2030 COMPREHENSIVE PLAN UPDATE
APPENDICES – PART II (K-W)

JUNE 2010

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

CITY OF BURNSVILLE 2030 COMPREHENSIVE PLAN UPDATE

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2008

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

City of
BURNSVILLE

Water Resources Management Plan

City of Burnsville, Minnesota

October 2002
Revised: March 2008

Agency Review Draft 3-14-08

Replace with photo cover for final

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Water Resources Management Plan

EXECUTIVE SUMMARY

INTRODUCTION

This Executive Summary provides an introduction to the City of Burnsville's (City) updated Water Resources Management Plan (WRMP or Plan) and a look into some of the key issues related to water resources that are facing the City over the next ten to twenty years. The section begins with a brief history of water resource management in Burnsville dating back to the 1960's. Next, the summary provides an overview of the efforts and philosophy behind recent work to update the Plan. The Executive Summary closes with an outline of the major Plan sections and a review of two high-priority goals identified in the Plan.

History of Water Resource Management in Burnsville

Burnsville has experienced phenomenal growth in the last forty years, increasing in population from about 2,700 in 1960 to more than 60,000 today. This growth, along with topographic constraints in many areas of the City, contributed significantly to local flooding problems. Numerous small local ponds flooded on occasion because they had limited storage capacity and no natural overflows. The only solution at that time was to drain these ponds into other low spots. Ponds that were receiving water from other locations were subsequently threatened themselves by storm water that had never been directed to them before, causing legal dilemmas.

The City's first comprehensive drainage plan was completed in 1966. The 1966 drainage plan addressed extreme fluctuations in water levels on Crystal Lake. On several occasions in the late 1960's and in the early 1970's, it became necessary to pump the lake to lower its level. The City ultimately decided to install a gravity storm sewer system so that the discharge (i.e., lake level) would not be subject to the uncertainties of a mechanical pump. The next major hurdle was to construct a large lake/pond north of County Road 42 near the Savage/Burnsville border. The "new" Sunset Pond was created to accept the surface water from the new homes and businesses in west central Burnsville and the outflow of water from Crystal Lake. Shortly after completion of Sunset Pond, the downstream pipes were installed and the Crystal Lake outlet was finally in-place.

In 1994, the City completed its first generation local water resources plan (*Comprehensive Stormwater Management Plan*, OSM). Through the 1994 plan, the City formalized a policy of using natural ponds and wetlands as part of the storm

water drainage system. The City completed its second generation plan in 2002 and this 2008 plan represents an update to that 2002 plan.

The Lower Minnesota River Watershed District and the Black Dog and Vermillion River Watershed Management Organizations (WMOs) have in recent years taken steps towards, or completed, updating their watershed plans. Each of these organizations have jurisdiction over water resources related issues within portions of the City. In addition, the U.S. Environmental Protection Agency has instituted a storm water related permit program (i.e., the NPDES Phase II program) for communities for which the Minnesota Pollution Control Agency (MPCA) is in the process of developing the detailed requirements. Burnsville is one of the many cities in Minnesota that will be subject to these national storm water permit requirements.

Updating the Plan

From about 1999 through 2002, the City worked with stakeholders to identify current water resource issues and develop a comprehensive strategy for addressing water resource related issues, with the goal of updating the City's 1994 plan. City staff developed a strategy that focuses on water quantity and water quality issues, incorporates new regulations required by local, state and federal agencies, and builds on recently completed plans for wetland protection and management, natural resource management and land use. Staff has expended considerable time and effort gathering data and resident feedback in preparation and development of this strategy. One of the key results of these efforts is this comprehensive WRMP.

In addition to City staff, an extensive list of individuals, groups, and committees were involved in the review and development of the 2002 Plan, including:

- The City Council;
- A Citizen Committee;
- Citizens at large via public forums;
- The Parks and Natural Resources Commission;
- The Economic Growth Committee; and
- The Planning Commission.

Policy Considerations Regarding Storm Water Management

Which water bodies should have the highest water quality goals?

What City standards are necessary to achieve water quality in lakes, streams and wetlands to be consistent with intended use and classification?

What steps should be taken to control excessive volumes and rates of runoff (i.e., flooding) and minimize related public capital and maintenance inputs?

Do extended high water levels warrant significant public expenditures to increase the capacity of the drainage system?

How can the City proactively continue development/redevelopment efforts and minimize impacts on water resources?

Do budgets for street sweeping, pond cleaning, lake treatments, etc., need to be increased?

Should the City aggressively pursue a campaign focused on improving water quality?

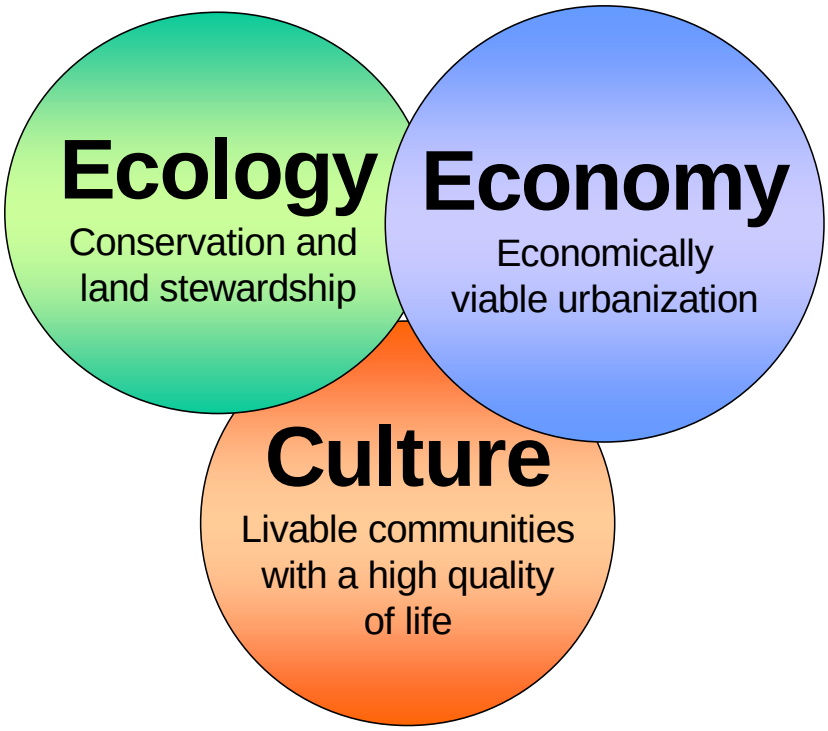
Profile of the Plan

This Plan represents a unique combination of resource management, regulatory controls and public works management. State Statutes require that plans be prepared for each watershed in the seven county metropolitan area. Local (i.e., City) plans must also be prepared and approved by the applicable watersheds and the Metropolitan Council. Once approved, the WRMP becomes part of the City's overall Comprehensive Plan.

The Plan is intended to guide and help plan for water resources management activities through 2016. Though long term in focus, the Plan has numerous future decision points related to recommended capital improvements and ongoing inspection, maintenance and monitoring activities. The WRMP will leverage the resources of the City, watershed management organizations (WMOs) and adjacent communities to produce effective results.

This Plan will also play an important role in addressing excess volume and water quality treatment issues such as those raised by the citizen committee involved in updating the City's shoreland ordinance. This group identified significant water volume (i.e., flooding) concerns and water quality issues. In addition, further development of storm water standards will help address many of the important water resource issues. Establishment of impervious cover criteria and pretreatment requirements for stormwater will help protect and enhance the City's existing water resources. Incorporating the Comprehensive Wetland Protection and Management Plan and the Natural Resources Master Plan into this WRMP will provide the City with a true "Integrated Resources Management" approach to managing its natural resources.

Figure 1 - The Planning Challenge.



Balancing ecology and economy to establish the desired culture.

As illustrated in Figure 1, the challenge for the Plan is to strike an appropriate balance between economic and ecological issues to maintain and enhance the desired culture in Burnsville; a culture based on a livable community with a high quality of life. This Plan is a unique combination of ecology, culture and economy.

The planning approach goes well beyond reacting to problems after they occur and, for the purposes of this Plan, the following steps define the process:

1. Assessing the current condition of water resources;
2. Establishing realistic, attainable, and affordable goals that can be implemented;
3. Developing strategies and priorities for achieving those goals;
4. Implementing long-term monitoring and public information programs; and
5. Supporting the strategies with adequate funding.

Many water quality plans that are developed on the basis of a storm drainage philosophy offer only water quality treatment solutions. Burnsville's strategy will first focus on pollution prevention and runoff volume reduction followed by water

quality and quantity treatment. Through an integrated effort beginning at the community and local level, the City's water resources can best be protected.

The WRMP is a single comprehensive strategy that addresses the City's existing and future water resource needs in a proactive manner while promoting both citizen and business participation. The primary focus of the Plan is to identify strategies to achieve the City-established End Statement on the environment.

> ***"People find Burnsville is an environmentally sensitive community ensuring preservation and enhancement of its natural resources."***

SECTIONS OF THE PLAN

The sections of this Plan are summarized in the following pages. Several topics are presented in greater detail in this overview of the Plan, in part to emphasize their importance. A few of the more significant water resources issues facing the City in the coming years are also highlighted.

Land and Water Resource Inventory

This section of the Plan includes a collection of previous studies conducted in Burnsville as well as water resource information from a range of other sources. Information is presented on: climate and precipitation; soils, geology and topography; surface water, ground water and wetland resources; land use and utilities; natural communities and rare species; public and water-based recreation areas; the Minnesota Valley National Wildlife Refuge; and navigation and pollutant sources.

Goals and Policies

The Plan establishes goals across 12 perspectives. These goals satisfy Minnesota State Statutes, §103B.235, and Minnesota Rules Chapter 8410, which establish requirements for the content of local water resource management plans. The 12 goals of this Plan are summarized in Table 1. Additional background information on two of the highest priority goals (Goal 1-Water Quantity and Goal 2-Water Quality) is presented following Table 1.

Table 1 - Summary of Plan Goals.

Goal Number	Goal	Goal Statement
1	**Water Quantity (Flood Control)**	Control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of runoff.
2	**Water Quality**	Achieve water quality standards in lakes, streams, and wetlands consistent with intended use and classification.
3	**Erosion Control**	Minimize soil erosion through increased education and enforcement.
4	**Wetlands**	Maintain or increase wetland acreage and increase wetland values in accordance with the adopted Comprehensive Wetland Protection and Management Plan.
5	**Public Participation, Information and Education**	Increase public participation and knowledge in management of the water resources.
6	**Monitoring**	Implement a comprehensive water resources monitoring program.
7	**Maintenance and Inspection**	Preserve the function of water resource facilities through routine inspection and regular maintenance activities.
8	**Recreation, Fish and Wildlife**	Manage water recreation activities and improve fish and wildlife habitat.
9	**Ground water**	Prevent contamination of the aquifers and promote ground water recharge.
10	**Regulatory Responsibility**	Maintain regulatory authority at the local level while recognizing the role of other local, state and federal entities and complying with specified programs and requirements.
11	**Finance**	Establish funding sources to finance water resources management activities.
12	**Land Use**	Recognize the relationship between land use cover and water resources management.

More on Goal 1: Water Quantity

At the August 15, 2000, Council work session, there was a clear consensus that water quantity issues should be the highest priority in the Plan. A summary of four of the significant needs identified in the 2002 WRMP is provided below.

Earley Lake. Following a flood event in July 2000, interest in developing an immediate solution to the Earley Lake problem was renewed as one of the top priorities for storm water management in the City. A feasibility study was

completed in the spring of 2001 that explored several alternatives to reduce or eliminate these problems. Two alternatives from the report were selected by the City Council as capital improvement projects. Hydrologic/hydraulic modeling for Earley Lake assuming both improvements showed a significant reduction in the flood levels for a 100-year storm event. Construction began in the fall of 2001 and was completed in the spring of 2002.

Northeast Burnsville - River Hills. Heavy rains in July 2000 focused attention on area-wide drainage problems in northeast Burnsville. A detailed model of pipe capacities was completed as part of the planning process. The model is based on field-verification of the in-place drainage system and a specific analysis of the inlet capacities of existing catch basins. Improvements at Galtier/Highway 13 and Chandler Court Pond were implemented during late 2000 and early 2001. Improvements in water quality also resulted from this project.

Additional storm sewer improvements that will address flooding problems in northeast Burnsville continue to be completed as part of the City's annual street reconstruction program.

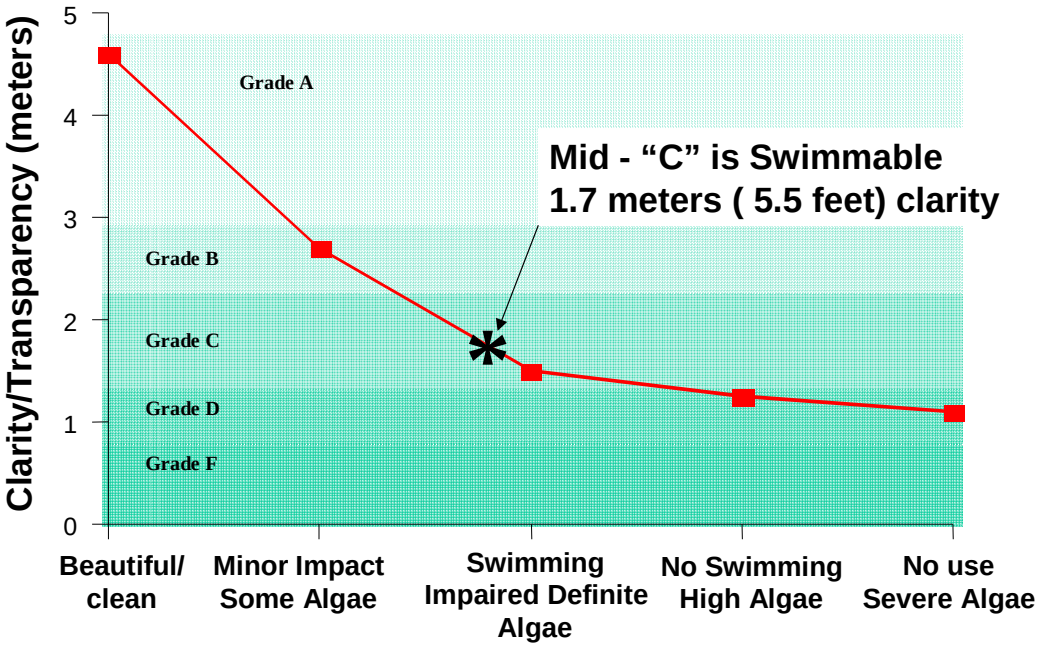
South Twin Lake. Local flooding relative to existing flood easements continues to be a problem. Modifications to the existing outlet structure were made to reduce the chances of the outlet plugging during large rainfall or runoff events.

Crystal Lake. Crystal Lake's high water levels have created concerns relative to lost recreational opportunities and shoreline erosion. Modifications to the outlet system were identified that will significantly reduce the duration of high water levels on the lake. During the July 2000 public meeting, Crystal Lake residents indicated that their preference was to first address water quality issues on Crystal Lake. Therefore, structural modifications of the Lake's outlet system have been a lower priority in the Plan.

More on Goal 2: Water Quality

The goal setting process for Burnsville lakes revolves around their recreational suitability. In 1990, the MPCA completed a questionnaire survey related to negative lake user perceptions (Heiskary, S. and C. B. Wilson, 1990). The survey involved 200 participants within MPCA's Citizen Lake Monitoring Program. The survey focused on individual perception of both the physical appearance of their lake, along with the perceived impacts on whole-body contact recreation (i.e., swimming). Results were analyzed as a function of Secchi disc transparency. Figure 2 illustrates how citizen perception drops with water transparency and how it relates to the Metropolitan Council's grading system.

Figure 2 - Citizen Perception of Lake Quality versus Lake Clarity



The water quality objectives of the Plan are centered on Burnsville lakes that support a full range of recreation uses including full-body contact recreation (i.e., they are swimmable). The priority lakes include Lac Lavon, Crystal Lake, Lake Alimagnet and the future (Kraemer) Quarry Lake. In addition, other significant water bodies have specific water quality goals established based on community input.

During the annual planning session in January 2000, the City Council discussed the issue of having "Grade B" lakes in Burnsville. The idea stems from a system used by the Metropolitan Council to establish lake quality report cards. The Metropolitan Council grading system ranges from A (best) to F (worst). The grading curve represents three water quality indicators as shown in Table 2.

Table 2 - Lake Grades and Lake Water Quality.

Grade	Total Phosphorus (µg/l)	Chlorophyll a (µg/l)	Secchi disc (meters)
A	<10	23	>3.0
B	10-30	23-32	2.2-3.0
C	30-70	32-68	1.2-2.2
D	70-90	68-152	0.7-1.2
F	>90	>152	<0.7

The three variables used in the grading system strongly relate to open-water nuisance aspects of a lake such as algal blooms. These conditions can also indicate accelerated cultural eutrophication (i.e., aging). In-lake phosphorus levels are related to the abundance of algae, chlorophyll a is a measurement of algae abundance and Secchi disc transparency relates to the appearance of the lake. This data supports the conclusion that the less algae in the lake, the better the clarity. Nuisances such as aquatic macrophytes (i.e., weeds) are not indicated with this grading system. Recent grades of selected lakes within the City are summarized in Table 3.

Table 3 - Grade of Selected Lakes in Burnsville.

Lake	Approximate 'Grade' (1994 to Present)
Crystal Lake	Consistently considered "C"
Keller Lake	Often considered "D"
Lac Lavon	Consistently "A"
Wood Pond	Sometimes "B", often "C"
Twin Lakes	Upper end of "C"
Earley Lake	"C"
Sunset Pond	Upper end of "C"
Lake Alimagnet	Often considered "D"

Based on the 2002 status (i.e., grade) of selected Burnsville lakes as shown in Table 3, the question was asked: "Is it possible to achieve Grade B lakes in Burnsville?" Certainly in the case of Lac Lavon, the goal should remain Grade A, as should the goal for future Kraemer/Quarry Lake in northwest Burnsville. But for the other significant water bodies, the question is one of dollars and practicality. If we throw enough dollars at any water body it is possible to achieve Grade B quality. However, the means and methods necessary to achieve the goal, if even financially feasible, still may not be acceptable to the public.

Based on citizen input, the City Council established the lake clarity goals shown in Table 4. For the purpose of future management, the goals will shift from an overall lake grade (i.e., A to F) to the Secchi disc transparency listed in Table 4.

The 2008 Plan includes updates to the water quality goals for Lake Alimagnet, Crystal Lake, Keller Lake based on studies completed after the publication of the 2002 Plan. Twin Lake has also been separated into two water bodies, North and South Twin, for the purposes of future management and each has its own water clarity goal. The completed studies detail new water quality goals and proposed capital improvement projects intended to facilitate improvements to meet the revised goals.

Table 4 - Lake Clarity Goals.

Lake	2008 Clarity Goal (meters) [2]	2002 Clarity Goal (meters) [2]	3-Year Average Clarity (meters)[1]
Lac Lavon	3.6	3.6	3.8
Quarry Lake	3.6	3.6	N/A – Future Lake
Crystal Lake	2.1	2.6	1.7
Wood Pond	TBD	1.7	1.5
Lake Alimagnet	1.3	1.7	0.6
Earley Lake	1.7	1.7	1.7
Keller Lake	1.8	1.7	1.3
Sunset Pond	1.7	1.7	2.4
North Twin Lake	1.7	1.7	1.7
South Twin Lake	1.4	1.7	1.7
Black Dog Lake		To be developed	No data available

1. Average of most recent three years monitored.
2. Revised 2006 Plan Update

The basics premise behind revising these goals is to establish realistic clarity goals, such that when the goal is met, it will allow the water body (if impaired) to be removed from the impaired waters list. The revised clarity goals are based on the most recent lake monitoring data and lake management plans prepared for each water body. The Water Resources Management Plan allocates funding to implement the strategies indentified in the lake management plans to achieve these revised goals. The City will re-evaluate all water quality goals when this Plan is updated in 2016 to consider whether clarity goals should be adjusted or added for any of the community's water bodies. For waters that are impaired, the City plans to work cooperatively with the local watershed organizations and MPCA to convert the lake management plans in to Total Maximum Daily Load (TMDL) studies.

Watershed Assessment

The Watershed Assessment section is intended to facilitate decision making and future goal setting. Through a comparative analysis of the subwatersheds, a method for developing an implementation schedule for future improvements and management activities is established.

The City's existing hydrologic model was updated as part of the planning process. The updated model includes recent modeling efforts at Keller, Crystal and Earley Lake, incorporation of Lakeville data in the Crystal Lake subwatershed and review and revision of existing subwatershed boundaries, land use and outlet structure inconsistencies.

Burnsville lies within the larger Minnesota River Basin in east central Minnesota. Within Burnsville, the Minnesota River Basin includes several smaller watershed units including the following three:

- Vermillion River Watershed
- Black Dog Watershed
- Lower Minnesota River Watershed

Each of these watersheds is discussed in detail in a separate section of the Plan. A total of twelve action and implementation plans are presented for individual lakes and subwatersheds located within these three watershed units.

Implementation

The Implementation section is the final section of the Plan. It is intended to provide guidance in carrying out the Plan objectives. The implementation section summarizes capital improvement projects, studies and ongoing maintenance, inspection, monitoring and other management activities recommended for the years 2002 through 2016. Estimated costs of recommended actions and an implementation schedule are provided for each of the next fifteen years. Procedures for amending the Plan are also discussed.

The implementation plan is based on goal-driven action plans. The process of developing the action and implementation plans is based on four steps:

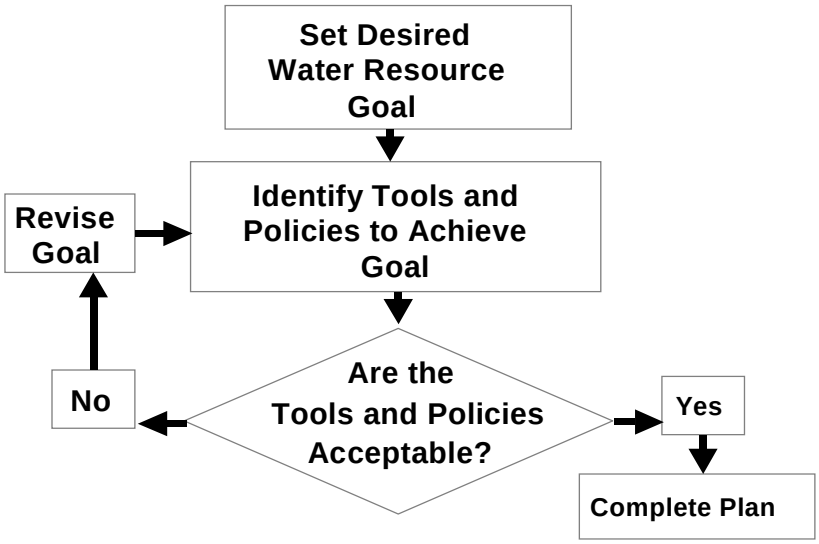
1. Development of goal statements consistent with Minnesota Rules Chapter 8410, the WMOs and Metropolitan Council;
2. Identification of issues or problems related to achieving the goals;
3. Identification of solutions corresponding to each of the issues; and
4. Development of specific action steps, including identification of resources, measurement, schedule and cost.

Based on the action plans from each Plan section, a process for accomplishing the goals of this WRMP is established.

Implementation Tools

Throughout the planning process, staff has worked to develop a collection of tools to help achieve the goals and objectives of this Plan. The process for applying these tools is illustrated in Figure 3.

Figure 3 - Water Resource Planning Flowchart.



To answer the question in Figure 3, "Are the tools and policies acceptable?' requires careful consideration of Ecology (conservation and land stewardship), Economy (economically viable urbanization) and Culture (livable communities with a high quality of life). This Plan sets out to help answer the question by prioritizing key actions over the next fifteen years to balance Ecology, Economy and Culture in a way that achieves the water resource goals of the City.

The implementation "tool box" for retrofitting existing systems or for new development/re-development projects contains a wide range of practices. The following list summarizes many of the available tools that were considered during the planning process, and will be used as applicable:

- Runoff Pre-treatment
- On-site Runoff Storage and Treatment
- Maintenance and Housekeeping
- Landscape Techniques
- Low-Impact Development (LID) Practices
- Reduced Impervious Cover
- Infiltration
- Phosphorus Ban
- Retention Basins
- Weed Harvesting
- Dredging
- Increased Monitoring of Water Quality
- Public Education and Involvement
- Partnering with Lake Homeowners, Watersheds and Other Communities
- Distributing Costs in an Equitable Manner

- Regulatory Tools
- Rural Street-Sections
- Improvements or Changes to Sand/salt Applications
- Reduced Parking Area or Pervious Pavements
- Utilizing Grants to the Fullest Extent

Of the multitude of tools available, regulatory tools focused on maintaining local control are extremely important. Examples of regulatory tools include erosion control, wetland protection and groundwater protection ordinances and/or standards. Shoreland and storm water ordinances also fall into this category. A full review of existing zoning and land use regulations will be undertaken to ensure that existing City regulations do not prohibit the use of innovative storm water management initiatives or pilot projects.

Compliance related activities also fall under the cover of regulatory tools. Future issues such as Total Maximum Daily Loads (TMDLs) and Federal Storm Water permitting are two such examples.

By establishing priorities, cost estimates and schedules the City has the tools to reach goals that are realistic, attainable, affordable and that can be implemented. Inspection and maintenance activities are expected to increase along with additional monitoring, public involvement and capital improvement projects. To finance these new activities, the City must also investigate and implement new funding alternatives.

Implementation Costs

The financial goal for this WRMP is to establish equitable funding sources to pay for water resources management activities. Following a detailed analysis and prioritization process for the recommended capital improvement projects and ongoing activities of this Plan (in 2001-2002) a 10-year project and activity implementation schedule was presented to City committees. The 10-year Plan had an estimated total cost over the 10-years of $24.6 million. While there was generally broad support for a 10-year implementation plan from 3 of 4 committees, there were also concerns for the financial impact of the Plan on industrial and commercial property owners. The Economic Growth Committee recommended a 20-year schedule.

Council subsequently approved the plan with a 15-year implementation schedule and an estimated cost over the next fifteen years of $27.3 million (in 2002 dollars). The additional costs of the 15-year schedule, as compared to the 10-year schedule, result from the additional 5-years of annual operating costs and anticipated ongoing project costs (e.g., storm sewer replacement program and pond clean out program). Table 5 includes the actual expenditures for the years 2002 through 2006 designated by an “A” following the number and revised annual expenditures based on the 2008 WRMP Update designated by an R following the number.

Table 5 - Implementation Plan Summary.

Year	2002 WRMP Estimated Expenditures ($ Million) (1)	Actual (A) or Revised (R) Expenditures ($ Million) (2)
2002	1.76	1.34 (A)
2003	1.57	1.66 (A)
2004	1.59	1.47 (A)
2005	1.71	1.36 (A)
2006	1.89	1.97 (A)
2007	1.76	3.12 (R)
2008	1.93	5.48 (R)
2009	1.89	1.04 (R)
2010	1.89	3.97 (R)
2011	1.89	1.07 (R)
2012	1.89	1.37 (R)
2013	1.89	0.82 (R)
2014	1.89	0.82 (R)
2015	1.89	0.82 (R)
2016	1.89	0.82 (R)
Total	**27.3**	**27.1 (R)**

1. All values are in 2002 dollars.
2. Values are actual dollars through 2006 and estimated amounts for 2007-2016 in 2006 dollars.

Relative to historical levels, the storm water utility fund was increased in 2001 and 2002 to help address the increased commitment to water resources management. Future increases will be needed to meet the needs of the Implementation Plan. Any increases in the storm utility fees resulting from the implementation plan would only apply to the 15-year plan schedule.

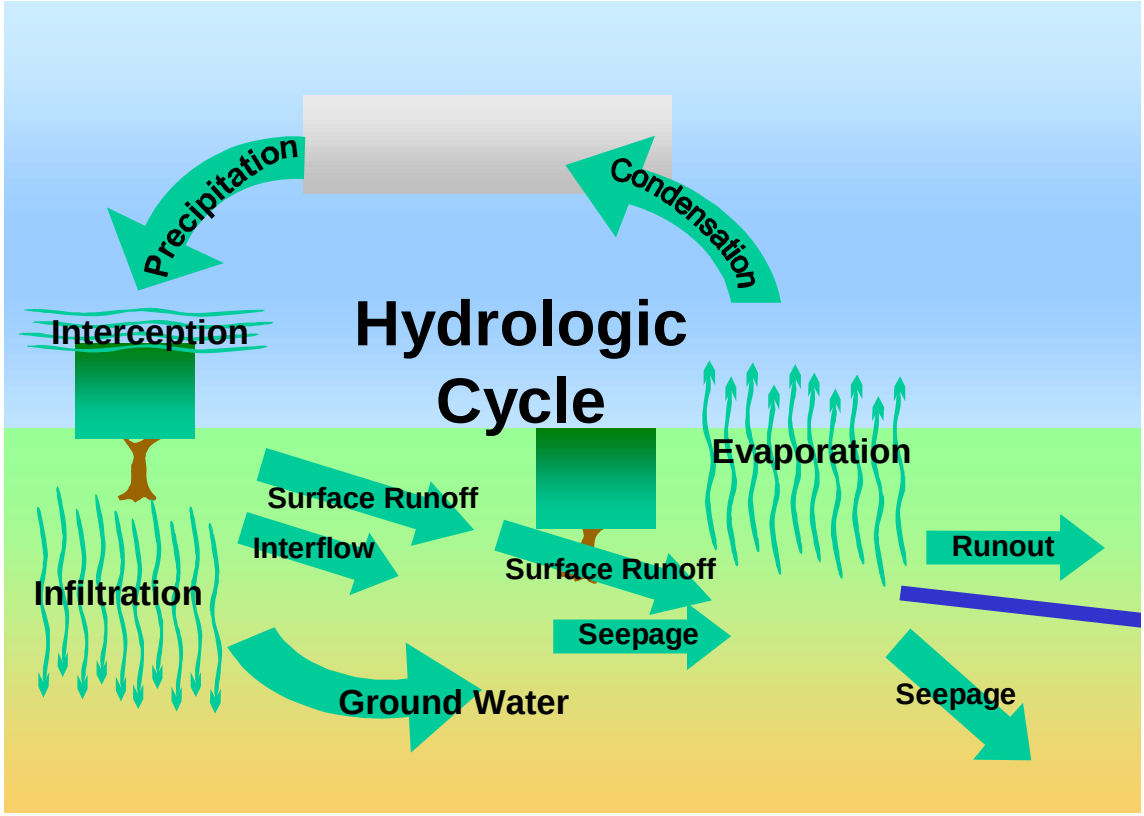
There is strong consensus that the new costs should be apportioned based on overall property contributions to runoff and pollutant loading. This is the current philosophy behind the City's storm water utility. In addition, a renewed focus will be placed on securing grants, enlisting regional watershed funding, seeking local partnerships with adjacent communities and investigating other financing mechanisms like Lake Improvement Districts.

Staff's intent is to revisit the goals, policies, tools and progress of the Plan on a three-year basis. The three-year average water quality results will be reviewed, the effectiveness of regulatory programs will be evaluated, and the success of public improvement projects will be assessed. Based on the three-year reviews, the WRMP will be updated to produce a truly dynamic plan.

LAND AND WATER RESOURCE INVENTORY

A comprehensive approach to storm water management requires management of water resources, drainage systems and land use in a unique combination of balance and prioritization. The approach must consider the entire hydrologic cycle, as illustrated by Figure 4. This section describes the land and water resource inventory in Burnsville.

Figure 4 - Hydrologic Cycle



CLIMATE AND PRECIPITATION DATA (BARR, 2000)

The Twin Cities metropolitan area climate is a humid continental climate, with moderate precipitation, wide daily temperature variations, warm humid summers and cold winters. The growing season varies from 142 days to 202 days, averaging 166 days. Freezing temperatures may occur until the middle of May and after the middle of September.

The nearest "first order" weather recording station is the Minneapolis-St. Paul Metropolitan Airport Station of the U.S. National Oceanic and Atmospheric Administration. The data from this installation is of highest value and accuracy. The National Weather Service forecast office for the metropolitan area, located in Chanhassen, also records weather data. Several Minnesota State Climatological network stations also exist and provide more detailed local weather data, kept by the Minnesota State Climatologist.

The highest temperature on record at the airport station to date was 108°F, set in 1936, and the lowest temperature was –34°F, set in 1936. The extreme conditions tell little except that temperatures range from uncomfortably hot to bitterly cold. The average annual temperature at the airport station is 44.9°F. Average total annual precipitation at the airport is 28.3 inches (1961-1990 average). The State Climatology Office of the DNR has information about temperature, precipitation and other climate data. Table 6 gives the precipitation summary for the airport station. Generally, the summer precipitation far exceeds that of the winter, the summer rainfall usually being sufficient for proper plant growth. From May to September, the growing months, the average rainfall is 17.3 inches, or about 61 percent of the normal annual precipitation. The normal percent of possible sunshine received in the area is 57 percent.

The annual snowfall averages about 50 inches, equivalent to about 5 inches of water. The heaviest monthly snowfall recorded to date at the Minneapolis-St. Paul International Airport was 46.4 inches of snow for the month of January 1982. The area averages 40 to 45 days per year when the snow depth is 6 inches or greater and about 20 days per year when the snow depth is more than 12 inches. Runoff from snowmelt can occur anytime during the winter, but the more severe snowmelt runoff conditions usually occur in March and early April.

Average weather imposes little strain on the typical drainage system. Extremes of precipitation and snowmelt are important for drainage design. The National Weather Service has data on extreme precipitation events that can be used to aid in the design of drainage systems. Extremes of snowmelt most often affect major rivers, the design of stormwater storage areas, and landlocked basins, while extremes of precipitation most often affect the design of conveyance facilities. Appendix D provides information on 100-year flood elevations, peak discharge rates, storage requirements, and other pertinent hydrologic information for the storm water retention areas and the trunk conveyance system within the City.

Table 6 - Precipitation Summary – Minneapolis/St. Paul Airport Station

Total Precipitation, Inches								Snow, Inches			# Days with Precip		
Month	Mean	High-Yr		Low-Yr		1-Day Max		Mean	High-Yr		=.10	=.50	=1.0
Jan	0.95	3.63	1967	0.05	1892	1.21	24/1967	12.6	46.4	1982	2.8	0.2	0.0
Feb	0.88	3.25	1922	0.03	1894	1.90	24/1930	9.6	26.5	1962	2.5	0.3	0.0
Mar	1.94	4.75	1965	0.09	1910	1.62	1/1965	12.2	46.1	1965	4.3	0.8	0.2
Apr	2.42	5.88	1986	0.16	1987	2.22	27/1975	3.6	21.8	1983	5.4	1.3	0.2
May	3.39	10.92	1942	0.21	1934	3.59	29/1942	0.1	2.4	1954	6.8	2.3	0.7
Jun	4.05	9.82	1990	0.22	1988	2.91	7/1984	0.0	0.0	1949	7.3	3.0	1.1
Jul	3.53	17.90	1987	0.11	1936	9.15	23/1987	0.0	0.0	1948	5.6	2.2	0.9
Aug	3.62	9.31	1977	0.20	1925	7.28	30/1977	0.0	0.0	1948	5.8	2.2	0.9
Sep	2.72	7.77	1903	0.41	1940	4.96	12/1903	0.0	0.4	1985	5.8	1.9	0.6
Oct	2.19	6.42	1911	0.01	1952	2.75	19/1934	0.4	8.2	1991	4.3	1.2	0.4
Nov	1.55	5.29	1991	0.02	1939	2.52	11/1940	7.3	46.9	1991	3.6	0.8	0.2
Dec	1.08	4.27	1982	0.00	1943	1.50	14/1891	11.6	33.5	1969	2.8	0.3	0.1
Annual	28.32	40.15	1911	11.54	1910	9.15	7/23/87	57.3	101.5	1983	57.1	16.5	5.3
Winter	2.91	6.24	1967	0.69	1958	1.90	2/24/30	33.5	71.7	1967	8.1	0.8	0.1
Spring	7.75	16.13	1965	2.12	1910	3.59	5/29/42	15.8	48.1	1965	16.6	4.3	1.1
Summer	11.20	23.52	1987	1.73	1994	9.15	7/23/87	0.0	0.0	1949	18.7	7.4	2.9
Fall	6.46	13.50	1911	1.71	1952	4.96	9/12/03	7.7	55.1	1991	13.7	4.0	1.2

Averages based on data from the years: 1961-1990 **Extremes from the years: 1891 -1996**

TOPOGRAPHIC DATA (BARR, 2000)

In general, the land within Burnsville slopes from south to north toward the Minnesota River. At the southern end of the watershed, an upland ridge slopes down to Crystal Lake. Continuing north, the upland transitions into an undulating glacial outwash plain. This area is pitted with shallow depressions surrounded by mounds of glacial till. Further north, the pitted outwash plain gives way to an outwash terrace, just above the Minnesota River floodplain. This transition corresponds roughly to the political boundary between the Black Dog WMO and the Lower Minnesota River Watershed District.

Some areas in east central Burnsville in the vicinity of Alimagnet Lake drain to the east to Alimagnet Lake and ultimately to the Vermillion River. Areas in the southwest corners of the City within the Credit River Subwatershed direct stormwater runoff to the south and west to the Credit River. The highest point within the City of Burnsville is Buck Hill, with an elevation of 1,215 feet above seal level. The lowest point in the City is just above the banks of the Minnesota River at approximately elevation 700.

Two-foot topographic information has been developed by the City of Burnsville and has also been incorporated into the Dakota County Geographic Information system database. Specific topographic information for areas within the City is available at the Burnsville City Hall.

Dakota County has 2-foot contour interval topographic mapping available for the entire county. There are also 10-foot contour interval 7-1/2 minute series topographic maps available from the U.S. Geological Survey.

SOILS DATA (BARR, 2000)

Soil Composition, slope and land management determine the effect of soils on stream and lake water quality. Soil composition and slope are important factors affecting the rate and amount of stormwater runoff. The shape and stability of aggregates of soil particles–expressed as soil structure–influence the permeability, infiltration rate, and erodibility of soils. Slope is important in determining stormwater runoff rates and hence susceptibility to erosion.

Infiltration capacities of soils affect the amount of direct runoff resulting from rainfall. The higher the infiltration rate for a given soil, the lower the runoff potential. Conversely, soils with low infiltration rates produce high runoff volumes and high peak discharge rates.

Four general soil hydrologic groups have been established by the Natural Resources Conservation Service. These groups are:

Group A Low runoff potential – high infiltration rate (0.30 – 0.50 in/hr)

Group B Moderate infiltration rate (0.15 – 0.30 in/hr)

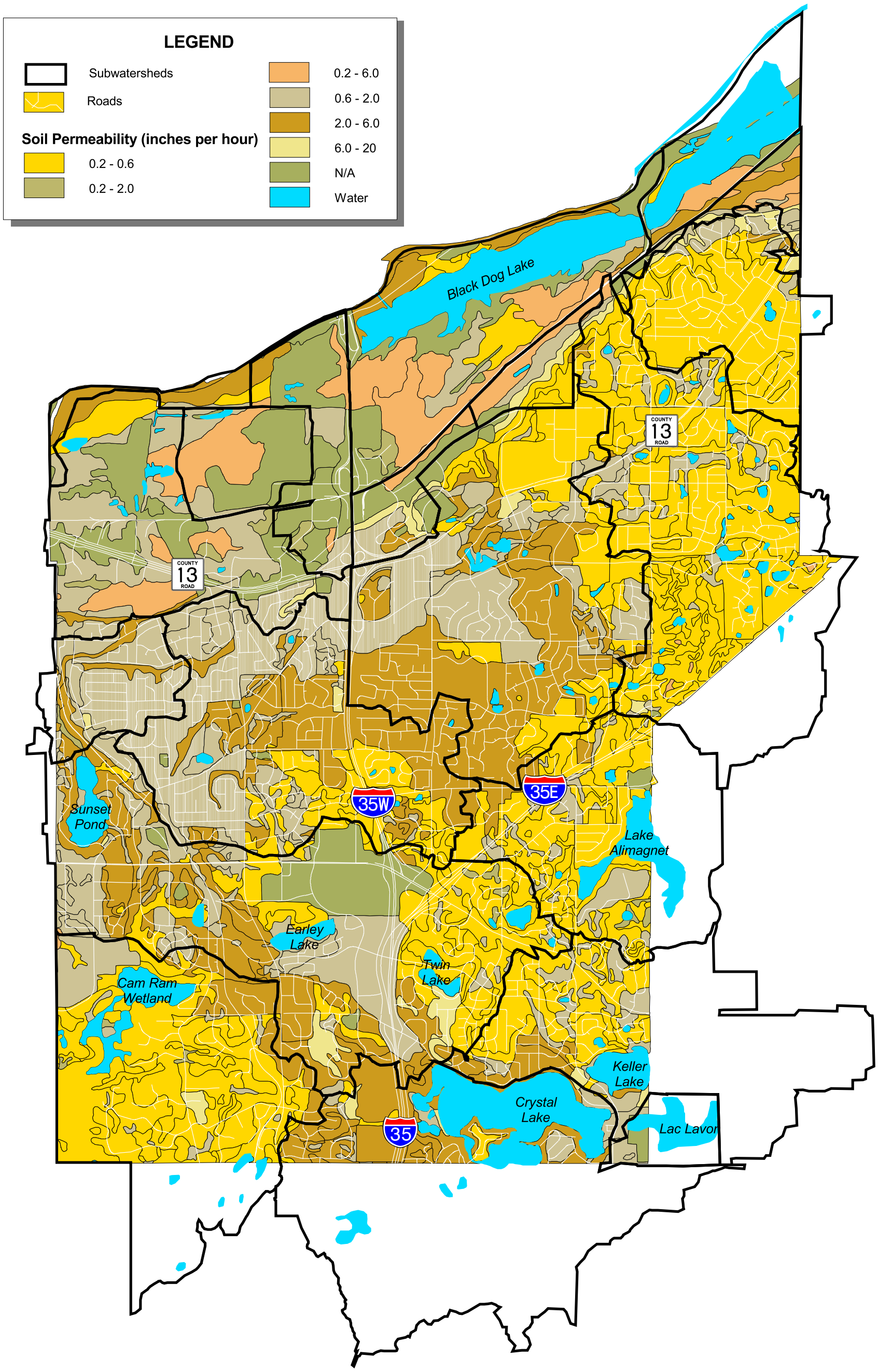
Group C Slow infiltration rate (0.05 – 0.15 in/hr)

Group D High runoff potential – very slow infiltration rate (0.0 – 0.05 in/hr)

The hydrologic grouping symbols (A-D) are combined with land use and used to estimate the amount of runoff that will occur over a given area for a particular rainfall amount. The Dakota County soil survey lists the hydrologic soil groups in tables, but does not map the soils according to these groupings. Figure 5 illustrates the general soil permeabilities throughout Burnsville.

Soil Information Used in this Plan

The hydrologic group of soils was used in the development of the City-wide hydrologic model, a summary for which is included in Appendix D. Soils hydrologic information is also used, in part, to help evaluate the potential performance of Low Impact development infiltration practices. More detailed information of how this soils information is used in evaluating required infiltration and filtration practices is provided in Appendix B.



Source: Dakota County Soil Survey

SEH	09/20/02	SOIL PERMEABILITY RATES	FILE NO. ABURNS9904.00	
	watershed.apr naf		FIG NO. 5	

Back of 11 x 17 – Figure 5

As land is developed for urban use, much of the soil is covered with impervious surfaces, and soils in the remaining areas are significantly disturbed and altered. Development often results in consolidation of the soil and tends to reduce infiltration capacity of otherwise permeable soil, resulting in significantly greater amounts of runoff.

Most of the soils in Burnsville are well to excessively drained. Silty and loamy sediments over glacial till can be found throughout the watershed. According to the Dakota County soil survey, there are four general soil types in the Burnsville area: 1) nearly level, silty and loamy soils (on floodplains); 2) level to very steep, silt, loamy, and sandy soils (on outwash plains and terraces); 3) nearly level to steep, loamy and silty soils (on uplands); and 4) gently sloping to very steep, loamy and sandy soils (on uplands and pitted outwash plains).

The Minnesota River Valley includes, on its lowest level, floodplain soils such as alluvium, peat, and muck identified as the Chaska-Minneiska-Colo soil complex. Alluvial soils are usually flood deposits. The particulate sizes range from gravelly sand to silt and clay, with silt and very fine sands being predominant. The alluvial soils are questionable with respect to supporting structures, although some building is economically possible, with wise application of loading techniques. Peat and muck are terms for soils of high organic content. In peat, one can identify some partially decayed vegetative (organic) matter such as reeds, grasses, mosses, and leaves. In muck, the decomposition has advanced to such a stage that the materials are not definable. Peat and muck are poor soils in an engineering sense. These soft materials require expensive methods to support structures.

At the edge of the Minnesota River Valley floodplain, just below the bluffs which border the valley, lie well-drained silt loams and more poorly drained silty clay loams. These soils are a result of erosion of soils on the higher levels of the bluffs.

More detailed soil information may be found in the Soil Survey of Dakota County, Minnesota prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service.

GEOLOGY AND GROUNDWATER RESOURCES

Geology (Barr, 2000)

Bedrock underlies Burnsville at a depth of between 0 to 500 feet, but averages between 100 and 200 feet. Bedrock at a depth of 0 corresponds to locations where the rock is exposed at the ground surface. This occurs in the watershed primarily at the bluffs along the Minnesota River. The bedrock is deepest (400 feet or more) beneath steep peaks of glacial till, such as Buck Hill. The rock underlying the watershed is a sedimentary formation with the oldest layer dating back to the Paleozoic era, approximately 600 million years ago. Over time with deposition of more sediment, the bedrock has reached a thickness of over 1,000 feet. The top of this formation is

rock, formed during the Ordovician period about 400 million years ago. Beneath the uplands of the watershed are the youngest sedimentary bedrock deposits. These shale and limestone beds transition to St. Peter sandstone beneath the outwash plain, finally to Prairie du Chien group dolomite and sandstone under the outwash terrace. One hundred (100) to 200 feet of glacial till covers most of the bedrock in the watershed. Much of the glacial till was deposited during the Pleistocene epoch beginning approximately 2 million years ago. The most recent glacial deposits were laid down about 10,000 years ago by the Wisconsin glaciation. Figure 6 shows the generalized regional stratigraphic column, the vertical relationship of the units and their approximate thickness.

There are minor buried bedrock valleys in Burnsville. Buried bedrock valleys are carved into the bedrock underlying the watershed. They are called buried since they are filled in as a result of glacial deposition. There may be little or no relationship between the location of surface valleys and buried bedrock valleys.

More information about the geology of Burnsville can be found in the Dakota County geologic atlas.

Groundwater Resources (Barr, 2000)

Two types of aquifers are present in Burnsville: surficial and bedrock aquifers. The following paragraphs provide general information about the aquifers in the Burnsville area; for more information, the reader is referred to the Dakota County Geologic Atlas and the Dakota County Groundwater Protection Plan.

Surficial Aquifers

Surficial aquifers are water-bearing layers of sediment, usually sand and gravel, which lie close to the ground surface. Many domestic and some irrigation wells in the watershed draw water from these aquifers. Since the surficial aquifers are more susceptible to pollution, they are not used for municipal or public supply wells. In some locations in Burnsville, the aquifer could provide sufficient water yield for some nonpotable industrial users. The typical depth of the water table beneath the watershed is approximately 200 feet.

Recharge to the surficial aquifers is primarily through the downward percolation of local precipitation. Some surficial aquifers may also be recharged during periods of high stream stage. Surficial aquifers may discharge to local lakes, streams or to the underlying bedrock.

The ponds and lakes scattered throughout the watershed recharge the groundwater. Some of these water bodies are landlocked and their only outlet is to the groundwater. Some of the landlocked lakes are probably perched above the regional level of the shallow groundwater in the watershed.

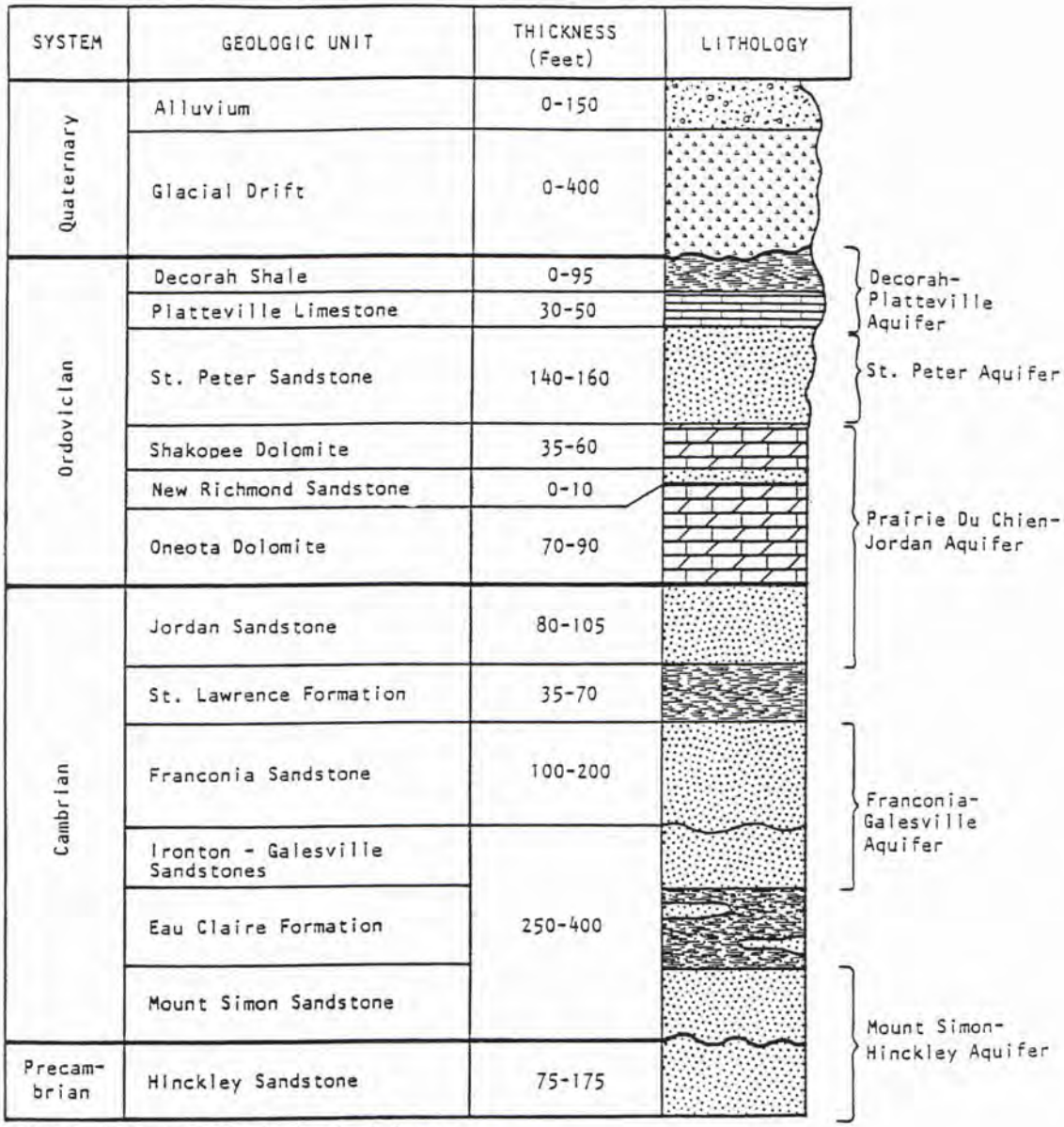
Bedrock Aquifers

Five major bedrock aquifers are available for water supply in Burnsville. The major bedrock aquifers are, in order of use and development: 1) Prairie du Chien-Jordan, 2) Mount Simon-Hinckley, 3) Ironton-Galesville, 4) St. Peter, and 5) Platteville. The aquifer used most often for water supply in the area is the Prairie du Chien-Jordan aquifer. The Prairie du Chien-Jordan aquifer is high yielding, more easily tapped than deeper aquifers, has very good water quality, and is continuous throughout most of the area.

The groundwater level in the Prairie du Chien-Jordan aquifer varies from 700 feet to more than 900 feet above mean sea level as shown in the Dakota County geologic atlas. The aquifer is recharged in areas where thin permeable drift overlies the limestone layers. Some recharge of this aquifer occurs locally from percolation through the overlying glacial deposits of St. Peter Sandstone. However, hydrogeologic considerations suggest this recharge would be a minimal contribution to the aquifer flow. Regional recharge of the Prairie du Chien-Jordan aquifer occurs to the south, in Freeborn and Mower Counties. Groundwater movement in the aquifer is generally from south to north, toward the Minnesota and Mississippi Rivers.

The aquifer with the highest water quality and highest possible yields is the Mt. Simon-Hinckley aquifer, but it is more expensive to use than the Prairie du Chien-Jordan because of its greater depth and there are limitations to its use. Minnesota statutes limit appropriations from the Mt. Simon-Hinckley aquifer to potable water uses, where there are no feasible or practical alternatives, and where a water conservation plan is incorporated with the appropriations permit. The water level of the Mt. Simon-Hinckley is approximately 700 feet above mean sea level. Recharge of the Mt. Simon-Hinckley takes place far north of the watershed, where the bedrock is closer to the surface, and occurs by percolation through the overlying drift and bedrock. Regional groundwater movement in the aquifer is to the southeast. The local direction of groundwater flow in the Twin Cities is tends to be toward Minneapolis, due to pumping of the aquifer.

Figure 6 - Geologic Cross Section



SOURCE: United States Geological Survey

LAND USE AND PUBLIC UTILITIES

Figure 7 shows existing land use in Burnsville. Intense commercial development is clustered along I-35W, County Road 42 and Highway 13. Figure 8, the City's zoning map, shows the anticipated future land use in Burnsville.

Burnsville is completely within the Metropolitan Urban Service Area (MUSA), the area delineated by the Metropolitan Council for sanitary sewer service.

There were less than about 1,200 acres of vacant land in the City of Burnsville as of 2002. As of 2008, the number changed to 404 acres. Many of these properties contain or are adjacent to wetland habitat identified during the field inventory. Development of the properties, or purchase by the City, may produce opportunities for improvement or protection of existing wetlands or creation or restoration of wetland habitat.

In 2007, the City evaluated the past, current and potential impacts of land use on loading of various pollutants to City waters. This analysis was completed as part of the new provisions required in the reissued 2006 NPDES permit. The permit required 30 Minnesota municipalities to complete a nondegradation assessment and report.

Based on the findings of the assessment, Selected MS4s were required to submit additional information to the Minnesota Pollution Control Agency (MPCA) Commissioner and to determine whether additional control measures, beyond those already identified in their SWPPP, could reasonably be taken to minimize the impacts of new or expanded discharges. The nondegradation assessment consists of determining the change in loading of annual runoff volume, total suspended sediment (TSS), and total phosphorus (TP) between 1988 and current conditions (2005) and between current conditions and projected future conditions (2020).

While the 1988 to 2005 loading assessment shows an increase in the runoff volume due to more impervious surfaces from 1988 to 2005, TSS loadings have decreased, and the TP loadings increased only slightly relative to 1988 levels. This result relates chiefly to the fact that numerous storm water treatment ponds accompanied the new development and re-development that occurred between 1988 and 2005. The results show that these ponds are working to remove significant amounts of total suspended sediment and phosphorus from storm water runoff.

Looking into the future, the projected level of development between 2005 and 2020 will continue to add impervious surface and result in additional annual runoff volume. Runoff infiltration is expected to play an increasingly important role in storm water management. The proposed standards within this WRMP will establish runoff volume control for both new development and redevelopment. These volume control and infiltration practices have the potential to offset the increase in runoff volume caused by the expansion of impervious surfaces.

Southwest Burnsville

The southwest area of the City contains rolling topography with areas of very steep slopes, as well as many of the largest remaining stands of trees in the community. The area is zoned rural residential requiring one-acre lots when City sewer services are available and two-acre lots when City sewer is not available.

As an update to the 1990 Comprehensive Plan, the City prepared a report entitled Southwest Public Services Study. The study reviewed natural conditions and explored the means and methods for extending public utilities to the area.

The key policy decision that resulted from the study was that the City adopted an official master plan for the future of this area and require all future subdivisions to be consistent with this plan. The resulting plan incorporates a design for the extension of public sanitary sewer, public water service and provision for storm water drainage improvements.

It is the intent to allow the area to remain unsewered for the foreseeable future. The City has addressed the southwest Burnsville area in more detail in Appendix A of the Master Plan for the area completed as part of the 1990 Comprehensive Plan.

SURFACE WATER RESOURCES

Public Waters (Lakes, Wetlands, Streams, Ditches)

Figure 9 shows all the DNR-protected waters located within the Black Dog watershed in Burnsville, based on the DNR Protected Waters maps, the City Comprehensive Wetland Protection and Management Plan and the City Natural Resources Master Plan. There are no protected or public ditches in Burnsville. There are three remnant trout streams and a remnant calcareous fen in Burnsville according to the DNR and Lower Minnesota River Watershed District as illustrated in Figure 10. However, there is currently not a trout population in these streams.

Policy 5 in Section 5.6 of the Black Dog Watershed Management Organization Plan requires the City's Plan to address disturbed shoreland areas. There are no known disturbed shoreland areas within the City.

Stormwater System, Hydrologic Data, and Flooding Information

Figure 11 shows the major subwatersheds, including an overview of the water resource inventory and storm sewer system. This information was from the City's Stormwater Management Plan, the WMO Plans, topographic data, and storm sewer as-built drawings. A more detailed map showing drainage areas and corresponding subcatchment identifications is provided in Figure D-1 in Appendix D of this Plan.

A Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) was completed for areas within the City of Burnsville along the Minnesota River. Included in the FIS is a floodplain study of the Minnesota River completed by the United States Department of Interior. The results were outlined in a report entitled "Flood Plain Areas of the Lower Minnesota River" dated 1973. This report identified the boundaries of the floodway and floodplain.

A flood insurance study (FIS) for the City of Burnsville was originally completed in September 1977, and provides flood information for properties adjacent to Alimagnet Lake and the Crystal Lake-Keller Lake system. Recent updates to the City's FIS have been completed in the form of two Letters of Map Revision (LOMR). Updated base flood elevations were established for Twin Lakes and Earley Lake (SEH, 2004) in central Burnsville and for the Cam Ram Wetland Area (SEH, 2005) in southwest Burnsville. These LOMRs were reviewed and approved by the Minnesota Department of Natural Resources and FEMA. Dakota County has also been working on updates to the County-wide FIRM maps and is expected to have draft maps available for review in 2008.

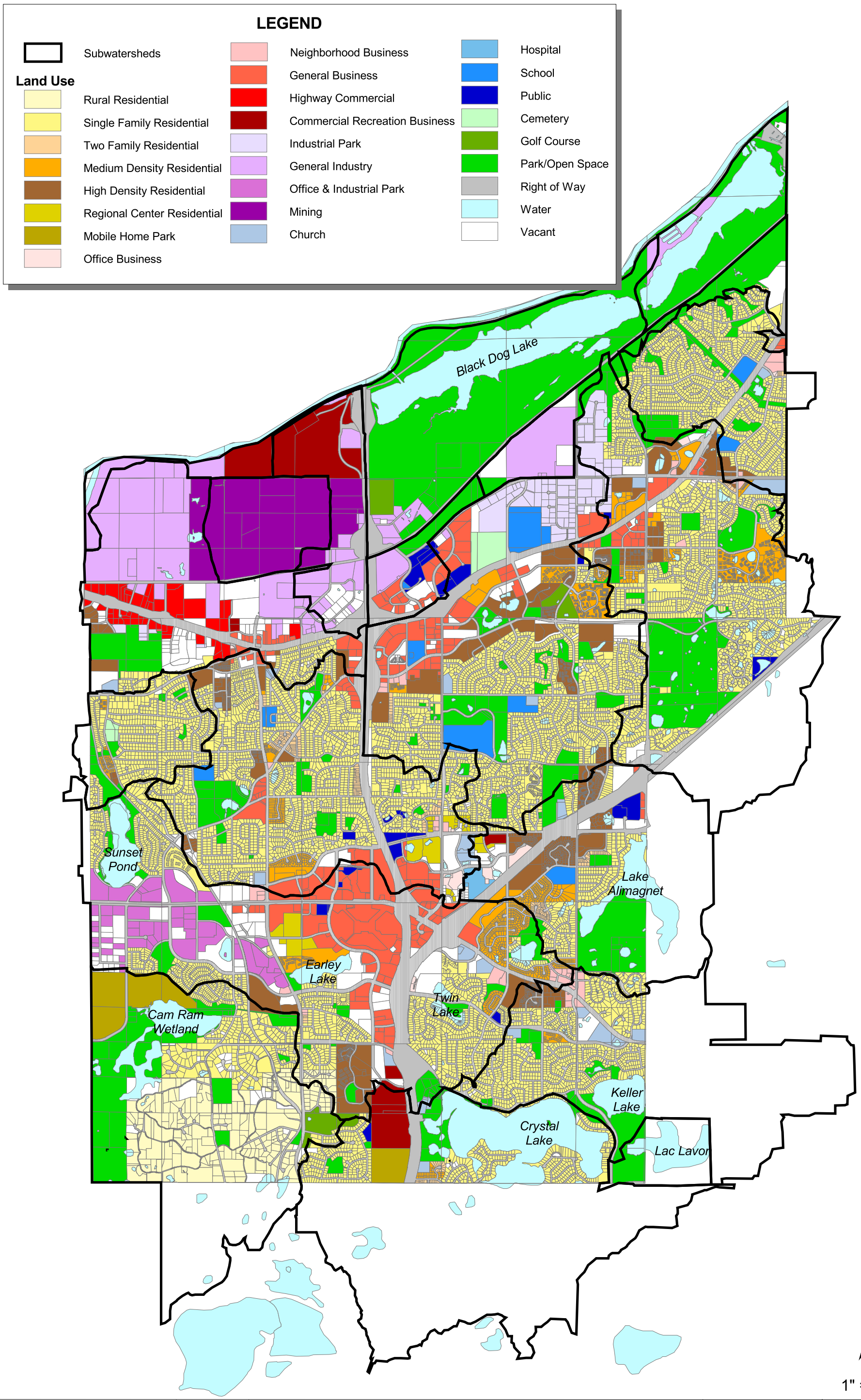
Appendix D provides information on 1% (100 year) flood elevations, peak discharge rates, storage requirements and other pertinent hydrologic information for ponds and wetlands, and for the trunk conveyance system. The information in Appendix D has been updated since the 2002 Plan by including the results of Flood Insurance Rate Map updates completed throughout the City and information from several other site specific hydrologic/hydraulic studies. The information should be used as a starting point in the development planning process, recognizing that new information may be available for these water bodies relative to the potential risks of flooding.

Water Quality Data

Water quality data including Secchi disc depth (clarity), total phosphorus and chlorophyll –a concentrations were collected at the following lakes, in the following years:

- Crystal Lake – 1973, 1980, 1983, 1989, 1994-2007,
- Keller Lake – 1996-2007
- Lac Lavon – Secchi disc only 1989–1991, 1997–2007
- Earley Lake – 1994-2007
- Wood Lake – 1996-2007
- Sunset Pond – 1994-1998, 2000-2007
- Twin Lakes – 1999, 2001-2007

More detailed discussion of the current quality and future management activities for these lakes is provided in the Watershed Assessment Section and specific Watershed Sections in this Plan.



SEH	9/20/02 burns.apr naf	EXISTING LAND USE	FILE NO. ABURNS9904.00 FIG NO. 7	

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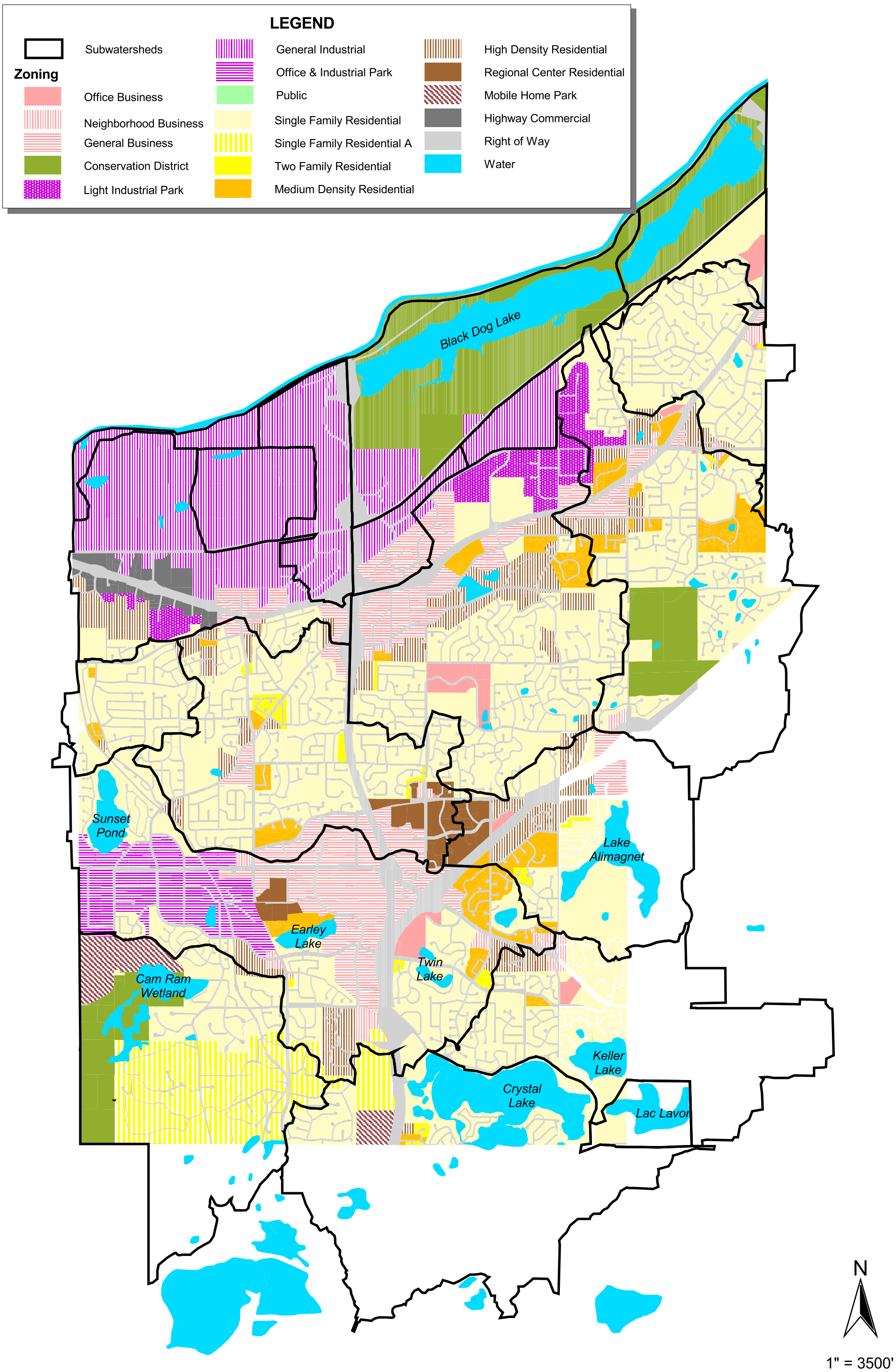
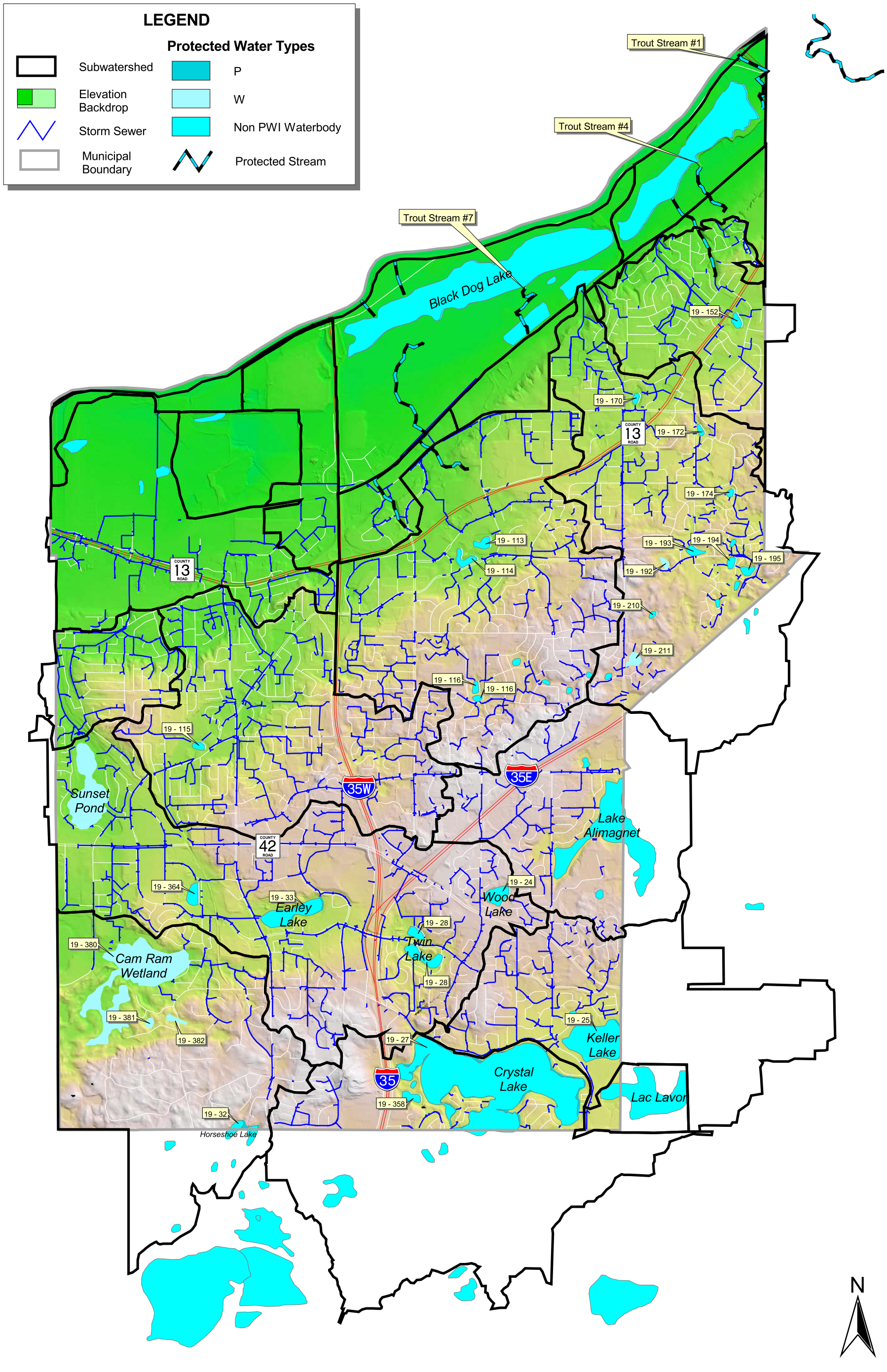


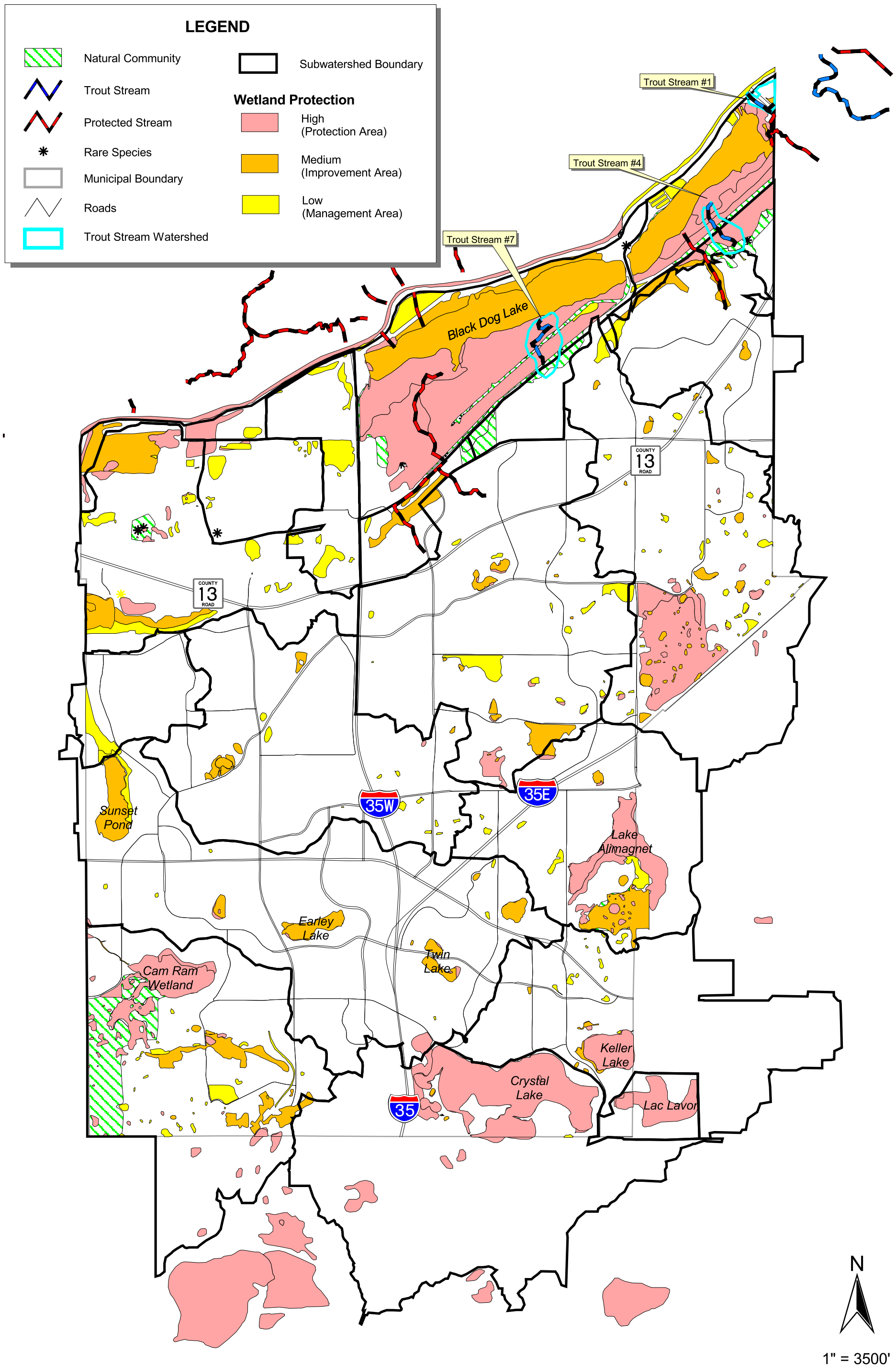
SEH	9/20/02 burns.apr naf	CITY OF BURNSVILLE ZONING MAP	FILE NO. ABURNS9904.00 FIG NO. 8	

Back of 11 x 17 Figure 8



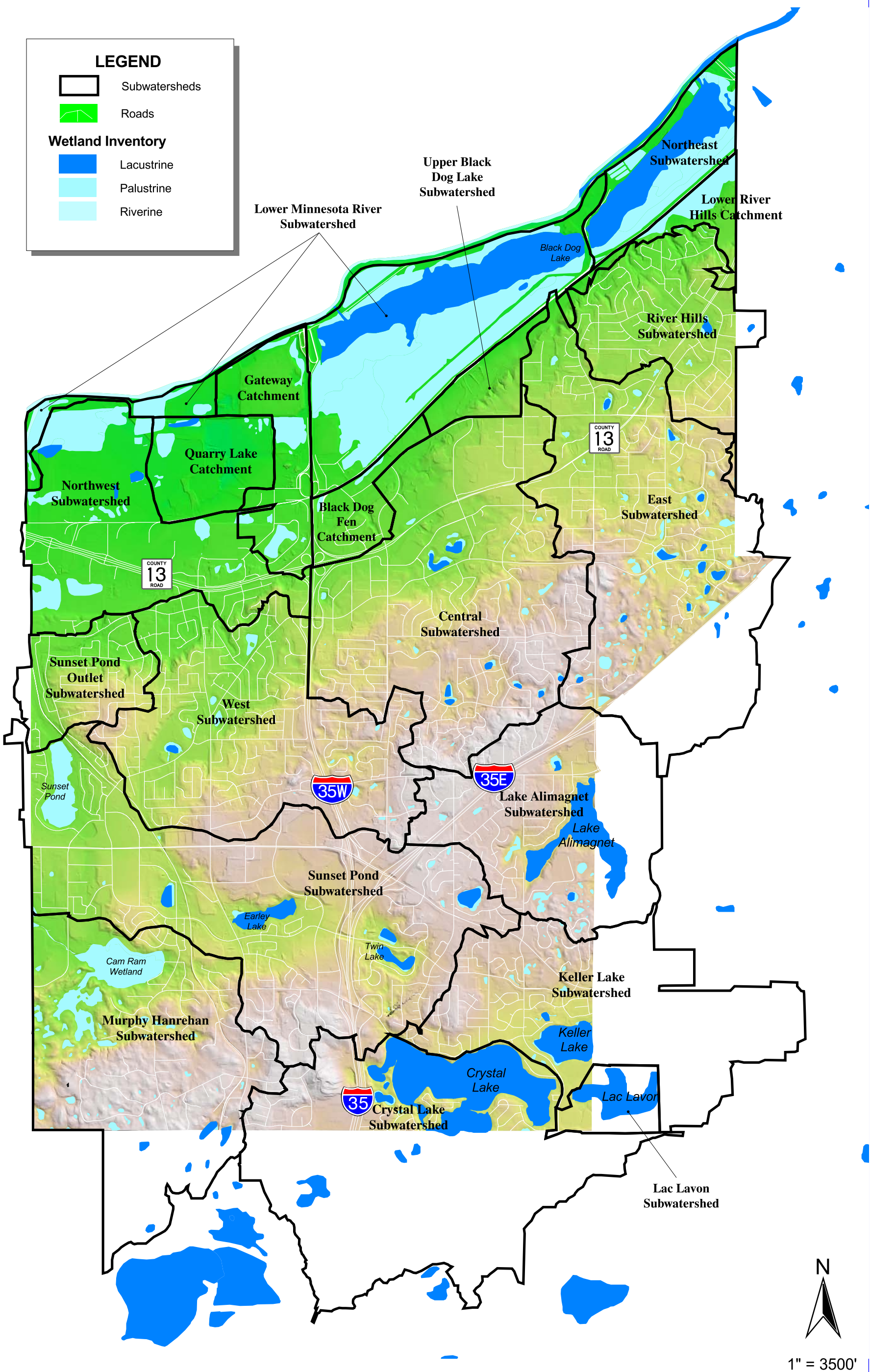
SEH	9/20/02 watershed.apr naf	STORM SEWER AND PROTECTED WATERS	FILE NO. ABURNS9904.00 FIG NO. 9	

back of 11 x 17 – Figure 9 – Black Dog WMO Public Waters



SEH	9/20/02 watershed.apr naf	INVENTORY OF NATURAL RESOURCES	FILE NO. ABURNS9904.00 FIG NO. 10	

back of 11 x 17 – Figure 10 – Inventory of Natural resources



SEH	9/10/02	BURNSVILLE MAJOR SUBWATERSHEDS WITH ELEVATION MODEL BACKDROP	FILE NO. ABURNS9904.00	
	watershed.apr naf		FIG NO. 11	

back of 11 x 17 – Figure 11 – Burnsville major subwatersheds

WETLAND MANAGEMENT

The City's first Wetland Protection and Management Plan (WPMP) was completed in 1988 (SEH). An updated Wetland Protection and Management Plan (SEH, 2008) was developed to provide the City with an updated wetland inventory and functions and values analysis, to provide enhanced management strategies to preserve and protect the wetland resources, and to comply with local watershed organizations plans. The regulatory framework developed in the WPMP has been incorporated into the City's existing planning and zoning regulations and implemented by ordinance.

As a brief background relating to the City's wetland management program, is it important to recall the extent of water resources with the City. The City covers approximately 17,282 acres, of which approximately 2,785 acres, or 16 percent, is wetland or other surface water features. These water resources include eight lakes, 264 wetlands, 59 storm water or other created ponds, and portions of three designated trout streams. Wetlands alone constitute 1,794 acres, or about 10 percent of the city area. One of the most prominent features is the Minnesota River and the extensive backwater and wetlands associated with it. The Minnesota River wetlands and Black Dog fen, within the Minnesota Valley National Wildlife Refuge, account for 913 acres. This represents just over half of the wetland habitat within the City.

The purpose of the WPMP is to establish a comprehensive wetland protection and management program to protect, conserve, and manage the wetlands within the City. The Plan also recognizes that development and redevelopment will continue well into the future, and will serve as a guide for City staff and developers to follow as they evaluate the potential impacts of a given project. The WPMP will serve as the toolbox for the City, and includes the best available mapping of the wetlands and water resources, differentiation of wetlands from other water features, and development of regulatory policies and goals. The WPMP is also intended to meet or exceed the requirements of the watershed management organizations within the City.

The WPMP was prepared following the requirements of Mn. Rule 8420.0650, Local Comprehensive Wetland Protection and Management Plans. The WPMP includes:

- Updated inventory of the wetlands in the City; including accurate mapping, functions and values analysis, and classification;
- Differentiation of jurisdictional and regulated wetlands from other water features;
- Development of regulatory and non-regulatory options for wetland preservation and protection;
- Identification of potential wetland mitigation sites within the city;
- Refinement of a GIS-based wetland management system.

This Plan has also been prepared with the requirement that it comply with the standards of the local watershed management organization plans. The City is located within four major watershed units. These watersheds are regulated by three organizations including: Black Dog Watershed Management Organization (BDWMO), Lower Minnesota River Watershed District (LMRWD), and Vermillion River Joint Powers Organization. The fourth watershed, Credit River, is administered by the BDWMO for the portion of the watershed within Dakota County.

Wetland Inventory and Classification

An inventory of wetlands was performed in 1997, to assess the extent and distribution of wetlands and to collect data reflective of wetland quality in the City. Data for the function and value assessment was collected during a brief visit to each wetland basin or complex. Collected data include a physical description of the basin and characterization of the plant community, hydrologic characteristics and wildlife and fishery habitat. Characterization of adjacent upland areas was also performed including a description of adjacent land use, disturbances or other influences on each wetland. The field assessment resulted in collection of data on 314 wetlands including 2,681 acres of wetland habitat. These data are summarized in Table 7.

In contrast, there were 532 wetland basins identified on the National Wetland Inventory (NWI) totaling 2,790 acres of wetland habitat. Most of the NWI was mapped between 1982 and 1993 from aerial photography taken between 1974 and 1984. Comparison between the NWI and the 1997 inventory indicates a loss of 218 basins and 109 acres of wetland habitat. This represents a 22 percent loss in the number of wetland basins and a loss of four percent of the wetland habitat in the City since the National Wetland Inventory was assembled in the 1980s. That loss is in addition to the approximately 85.7 percent loss of wetland in Dakota County between the 1860s and the 1980s. Assuming the total wetland loss in the City is similar to that estimated for Dakota County (85.7 percent), there may have been as much as 19,510 acres of wetland habitat in the City of Burnsville in the 1860s. The 1997 inventory reveals a total loss of 86.3 percent of the historic wetland area.

The 1998 wetland inventory was reviewed and updated using recent high-resolution aerial photographs. The previous inventory used field-based attributes, but the boundaries were based on the National Wetlands Inventory (NWI). The NWI is a good reference, but is not accurate enough to substitute for a current wetland inventory. This revised database replaces the former inventory. Review and updating of the 1998 inventory was needed as many of the former basins were not mapped correctly, mapped basins were not present, and some wetlands may have been missed. The results of the 2008 inventory are shown in Figure 13, which includes the management classification for each wetland. The official inventory will reside within the City's GIS database. Table 7 lists the distribution of the wetlands identified in the 2008 inventory.

Table 7 - Comparison Between the National Wetland Inventory and the 1997 Wetland Inventory (SEH 1998)

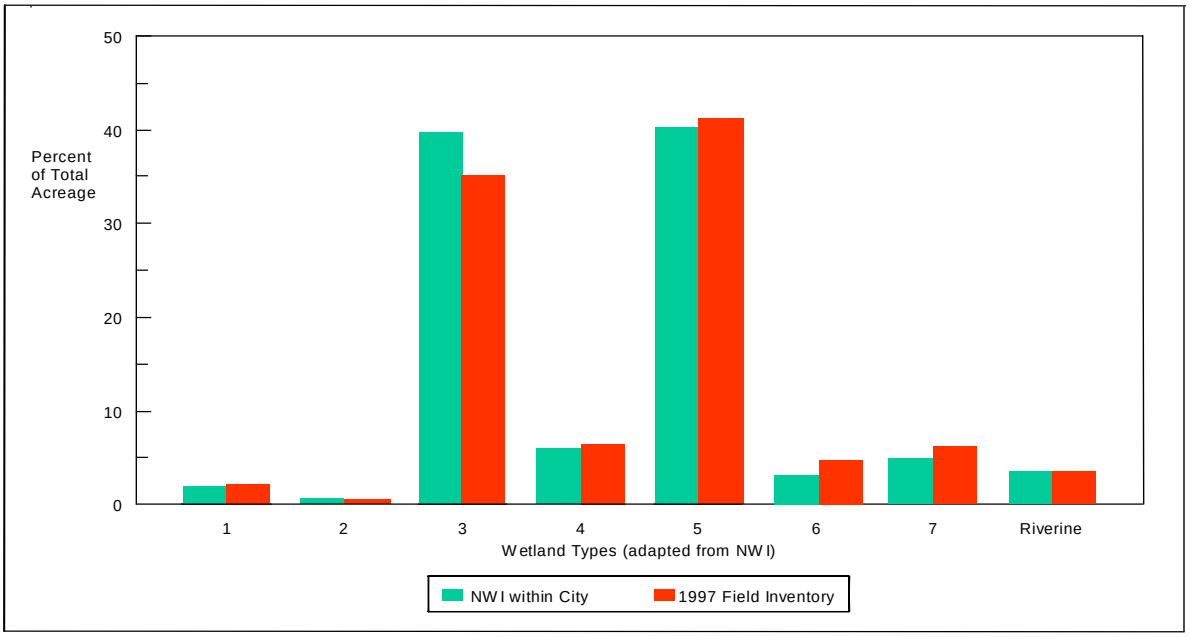
Wetland Type	Number of Basins			Total Area (acres)		
	NWI	1997	Net Change	NWI	1997	Net Change
Type 1	24	18	-6	58	62	+4
Type 2	2	12	+10	14	8	-6
Type 3	179	97	-82	1108	944	-164
Type 4	95	66	-29	170	174	+4
Type 5	137	83	-54	1121	1103	-18
Type 6	34	10	-24	88	128	+40
Type 7	59	25	-34	136	166	+30
Riverine	2	3	+1	95	93	-2
Totals	**532**	**314**	**-218**	**2790**	**2678**	**-112**

Summary of Basins Based on Wetland Type 2008 Update

Wetland Type	Description	Number of Basins	Total Area (acres)
Type 1	Seasonally Flooded	16	55
Type 2	Wet Meadow	11	12
Type 3	Shallow Marsh	72	1,041
Type 4	Deep Marsh	54	73
Type 5	Shallow Open Water	50	128
Type 6	Scrub Shrub	7	35
Type 7	Wooded Swamp	18	418
Riverine	Rivers and Streams	1	1
Pond	WCA-regulated Storm Water Ponds	35	31
Total		**268**	**1,794**

The distribution of wetland types as a percent of the total is shown in Figure 12. Figure 12 also shows a comparison between the distribution identified by the NWI within the City of Burnsville and that identified by the 1997 field inventory. Figure 13 illustrates the location of various management classes of wetlands throughout the City as presented in the updated 2008 Wetland Protection and Management Plan.

Figure 12 - Comparison of Wetland Types



One of the requirements of a Wetland Protection and Management Plan was to provide a wetland inventory and functions and values analysis. This was completed with the 1998 Plan, but has been reevaluated with the 2008 revision. This is necessitated as several issues have been detected through review of the 1998 inventory. One of the biggest needs was to differentiate wetlands from other water features. The 1998 plan includes many storm water treatment ponds, which may still be regulated under the WCA, but would not be subject to buffer, bounce, and water quality pretreatment standards. The 1998 inventory also included lakes, which would also not be regulated as wetlands, but would remain protected as Public Waters, and through the Surface Water Management Plan.

The primary goals of the updated wetland inventory were to:

- Improve the accuracy of the wetland inventory.
- Differentiate wetlands from other water features.
- Prioritize wetland regulations based on functions and values.
- Identify the status and trends of wetlands from the 1998 inventory through the 2008 revision.

Each basin within the city has been classified into one of four categories. These categories are the basis for which protection standards have been established. The 1998 inventory attributed classifications based on the Natural Resource Evaluation,

supplemented with data from the City's 1994 Storm Water Management Plan, the Dakota County Biological Survey and other sources.

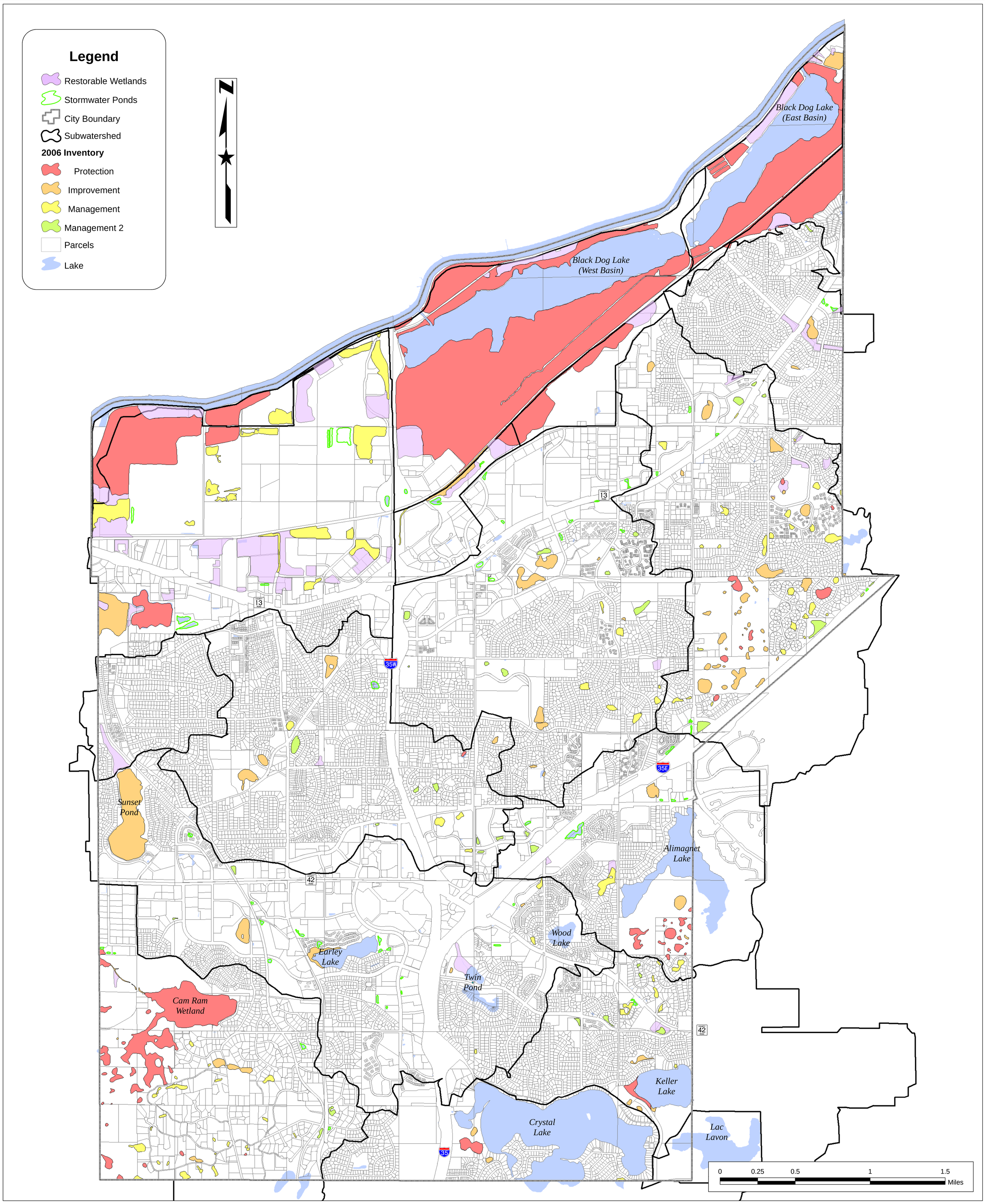
The database and supplemental information were used to determine the classification of each wetland basin by sorting the data according to total points and applying the ranking strategy. The resulting classifications include the following categories:

Protection Areas - Basins with Native Grades of A or B, sites with complete Community Structure, any sites supporting rare species, and any sites within or adjacent to significant natural communities as identified by the Dakota County Biological Survey. This is comparable to the Preserve Classification used in the MnRAM.

Improvement Areas - Basins with 3 of 4 of the Community Structure criteria, sites greater than ten acres in size, Minnesota Department of Natural Resources Protected Waters and Wetlands (Public Waters), and basins within existing City parks that are not classified as Protection Areas. Although there is some overlap, this classification is similar to the Manage I and Manage II MnRAM classifications.

Management Areas - Remaining wetlands, but generally of low quality and located outside of protected areas. Management wetlands are also likely to receive untreated storm water runoff, but have not been altered to enhance treatment capabilities. This classification is comparable to the Manage II and Manage III MnRAM classifications.

Management II Areas – These basins include any of the water features that may have been historic wetlands, and would remain subject to the requirement of the Wetland Conservation Act. These basins will have minimal protection standards as they currently function primarily to provide storm water management.



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01/29/2008

Wetland Classification Map

BURNVSILLE, MINNESOTA

Figure

13

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NATURAL COMMUNITIES AND RARE SPECIES

In 1999, Burnsville created its first Natural Resource Master Plan, and one of the first in all of the Minneapolis/St. Paul metropolitan area. This progressive act set in motion programs and policies to protect Burnsville's natural resources, such as a prairie management plan, a water resources management plan, and goose and deer management policies, and initiated a policy to direct the private development of remaining open space in an environmentally sound manner.

The City completed an update to the Natural Resources Master Plan in 2007 (Barr) and the work behind it assesses the current state of natural resources in Burnsville and makes recommendations for their preservation and restoration on both public and private lands. The updated plan also reviews and makes recommendations for Burnsville's various natural resources related plans and policies, in order to synchronize the effort to manage natural resources.

In creating this document, a study was conducted to survey the ecological status of Burnsville's publicly owned upland natural areas. New in this plan is an extensive urban forestry component which evaluates and makes recommendations for street trees, developed park trees and natural areas forests. The entire city, including private lands, was mapped for land cover type which maps developed and undeveloped land throughout the city. The inventory found that Burnsville has made great strides in protecting and improving water resources, protecting and restoring prairies, and is taking an ecological approach in developing private open space.

Forces degrading Burnsville's natural resources, however, are mounting, and Burnsville should next direct attention to its upland natural resources, in particular its remaining natural woodlands and trees in built areas. Degradation caused by invasive plant species encroachment, and the stress put on native plant communities due to the urban heat island effect (caused by heat accumulated on pavement) and climate change are occurring at a surprisingly rapid rate and are degrading Burnsville's natural areas. Communities throughout the metro area are all facing these challenges.

To complement Burnsville's current work to protect natural resources, the NRMP recommends actions to be taken to protect and enhance its vulnerable natural resources. The plan makes recommendations for monitoring, land management and restoration of publicly and privately owned lands. Focus has now shifted to upland natural resources, since diligent work has accomplished significant protection to the city's water resources.

The Minnesota DNR produces the Minnesota County Biological Survey identifying natural communities and rare species. The Dakota County survey map was completed in 1997. It identifies where evidence indicates the presence of rare plant and animals. The survey shows the presence of rare plants and animals in Burnsville: along the western border of the City, in and near Murphy-Hanrehan Regional Park; in southern Burnsville, west of Crystal lake and I-35; and just east of I-35W, between Highway 13 and Burnsville Parkway. The survey also identifies the original

vegetation in the area of the WMO as a mixture of brush prairie, oak openings and barrens, aspen-oak land, and upland deciduous forest.

The Black Dog Scientific and Natural Area, calcareous fens and additional rare plants and animals are in the Lower Minnesota River Watershed District.

The Burnsville Natural Resource Master Plan (SEH, 1999) set the stage for how natural resource inventory, evaluation, and management will be undertaken in the future. The purpose of the Plan was to identify existing natural resources in the City; identify strategies to protect, preserve, and manage those resources and educate the community about the importance of doing so. Natural resources include terrestrial (upland), wildlife, and aquatic resources and the adjacent areas needed to maintain them, irrespective of land ownership boundaries. The City's Wetlands Plan (SEH, 1998, updated 2008) evaluated aquatic resources (rivers, lakes, wetlands, and ponds). The results of the Wetlands Plan were integrated into the Natural Resources Master Plan such that the protection and management categories are consistent.

The 1997 “report card” on the status of Burnsville natural resources had mixed results. There were a handful of wooded and wetland sites which were above average quality. Most sites were of average quality which is not surprising for an urban setting. Management techniques for maintaining and improving the grades of these natural resources identified in the Natural Resources Master Plan.

Trout streams listed in the Minnesota Metro Trout Stream Watershed Program were identified and considered in the Natural Resource Management Plan. These trout streams within Burnsville are illustrated in Figure 10.

Terrestrial Resources

Terrestrial communities (woodland, prairie, meadow) selected for field inventory were identified on half section aerial photographs. Minnesota Department of Natural Resources (Mn/DNR) County Biological Survey sites were not reevaluated.

Wildlife and Rare Resources

Based on information from the Minnesota Department of Natural Resources County Biological Survey, rare animal species documented in Burnsville are Peregrine falcon, Bell's vireo, Blanding's turtle, Acadian flycatcher, Hooded warbler, Red-shouldered hawk, and Cerulean warbler. The first three were all in the vicinity of the Minnesota River Valley within the Bluff Valley Resource Management Unit (RMU) and the others fall within the Southwest RMU. Additional rare species in Burnsville are plants. They are found in several locations but primarily together in undisturbed natural communities.

Greenways and Corridors

Greenways and corridors potentially serve as movement pathways for plants and animals and bridge disjunct complexes of natural communities. Often they are linear and follow streams and rivers.

It was found that no significant linear greenways or corridors run through Burnsville, other than the river valley. The Minnesota River Valley runs along the northern border of the City of Burnsville and this area should be the focus of any efforts to connect areas managed by Burnsville and state and federal government agencies.

Resource Management Units

Resource management units (RMUs) are high concentrations of natural resource sites and important lakes and rivers. Lakes and rivers are not listed in the sites database for the reasons explained under inventory. All lakes in RMUs are considered high priority natural resources and as such are justified for the same staff and funding as high priority resources in the sites database.

RMUs contain high (protection), medium (improvement), and low (management) priority sites. The focus of management activities will be on the high priority sites. From an ecological perspective low and medium priority sites can have an effect on high priority sites and will be protected and managed to the extent that they affect high priority sites. All sites will be managed to at least maintain their current qualities to the extent possible.

The three categories of sites are:

1. High Priority Sites (Protection) - Sites with native community grades of A and B, any sites with rare species, and sites with complete community structure. These sites will receive priority for protection and management and priority for funding, regardless of whether or not they fall within a Resource Management Unit.

2. Medium Priority Sites (Improvement) - Sites with native community grades of C, all sites greater than 10 acres, and areas which meet 3 or 4 of the community structure criteria. These sites will be focused on for improvement when they are part of a Resource Management Unit.

3. Low Priority Sites (Management) - Sites with native grades of D, and areas which meet only 1 or 2 of the community structure criteria. Resources will be directed towards maintaining these sites, unless part of a Resource Management Unit Improvement Plan.

Map Inventory

Mapping was performed using Geographic Information System (GIS) data layers. Existing data layers on wetlands, ponds, lakes, and rivers were integrated with a new

terrestrial data layer and the existing Mn/DNR natural communities and rare species. All terrestrial, aquatic, and Mn/DNR sites are shown in Figure 10.

MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE, RECREATION AREA AND STATE TRAIL

The Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail (shown on Figure 14) were established as a result of efforts of local citizen groups to protect the Lower Minnesota River Valley. The Minnesota Valley Trail was authorized by the state legislature in 1969. Federal legislation entitled "The Minnesota Valley National Wildlife Refuge Act of 1976" declared that the policy of the Congress would be to preserve the Minnesota River Valley and, as a federal action, establish the 9,500-acre Minnesota Valley National Wildlife Refuge and an adjacent 8,000-acre wildlife recreation area.

There are approximately 24,000 acres of existing and authorized wildlife refuge, parks, trails, and open space located along the Minnesota River corridor. These lands are managed in accordance with the "Minnesota Valley National Wildlife, Recreation Area, and State Trail: Comprehensive Plan, July 1984." The plan was produced by the Department of the Interior, U.S. Fish and Wildlife Service, and the Minnesota Department of Natural Resources.

The refuge portion of the area is managed by the U.S. Fish and Wildlife Service with two main objectives: to provide habitat for a diversity of plants and animals and to provide opportunities for people to observe and learn about the valley's wildlife.

The recreation area is managed by local, city, and county governments and by the DNR. These agencies are developing recreational and educational opportunities that are compatible with the valley's natural resources.

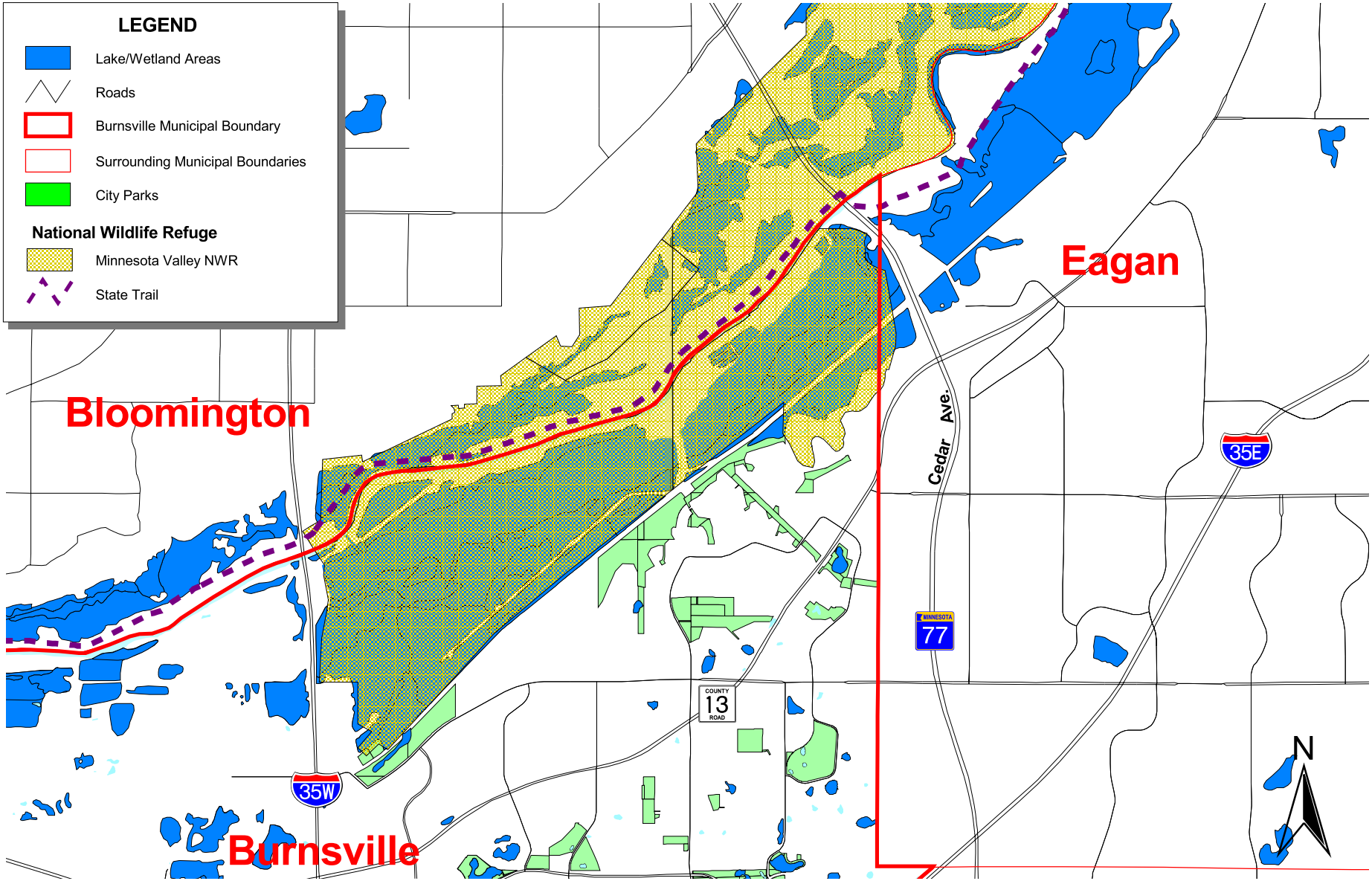
The state trail is managed by the DNR's Division of Parks and Recreation. Management objectives are to develop an accessible, scenic, recreational travel route between Fort Snelling State Park and Le Sueur. Upon completion, this state trail will be a multi-use recreational corridor through the entire Lower Minnesota River Valley. It will link with other metro area trails and provide hiking, bicycling, horseback, riding, snowmobiling and cross-country skiing opportunities for the two million people who live in the Twin Cities metro area.

PUBLIC AREAS FOR WATER-BASED RECREATION AND ACCESS (OSM, 1994)

Burnsville has numerous water bodies totally or partially within its borders that are used for water based recreation. The City has two water bodies which are used for a variety of motorized boat recreation: Crystal Lake and Alimagnet Lake. Crystal Lake has a public boat launch and is very heavily used by motorized boats. Alimagnet Lake only has a public canoe launch making motorized boat launching difficult and as a

result of the motorized use tends to be limited to lakeshore owners. Internal combustion motors are prohibited on all other lakes and ponds in Burnsville with the exception of Keller Lake, which has a 5-horsepower limit. Electric trolling motors are allowed on all lakes except Sunset Pond. More detailed information on water use restrictions for each lake is provided in the Watershed Sections of this Plan.

The public does use other lakes in Burnsville for water-related recreation such as non-motorized boating, fishing, hiking on trails adjacent to water and birdwatching. The primary lakes are Keller Lake, Lac Lavon, Sunset Pond, Earley Lake and Wood Lake. The City has parkland adjacent to each of these as well as Crystal and Alimagnet Lakes.



1" = 4000'

Source: Lower Minnesota River Watershed District

SEH	9/20/02 watershed.apr naf	MINNESOTA VALLEY NATIONAL WILDLIFE REFUGE	FILE NO. ABURNS9904.00 FIG NO. 14	

NAVIGATION (BARR, 1999)

The Minnesota River is navigable from the confluence with the Mississippi River to the Carver Rapids, just above the City of Carver. The effect of the Hastings Dam, located on the Mississippi River at Hastings, Minnesota, on the Minnesota River extends as far as the Carver Rapids. The Carver Rapids are just upstream of the most westerly boundary of the District. The Hastings Dam controls the water surface of the Minnesota River within the District.

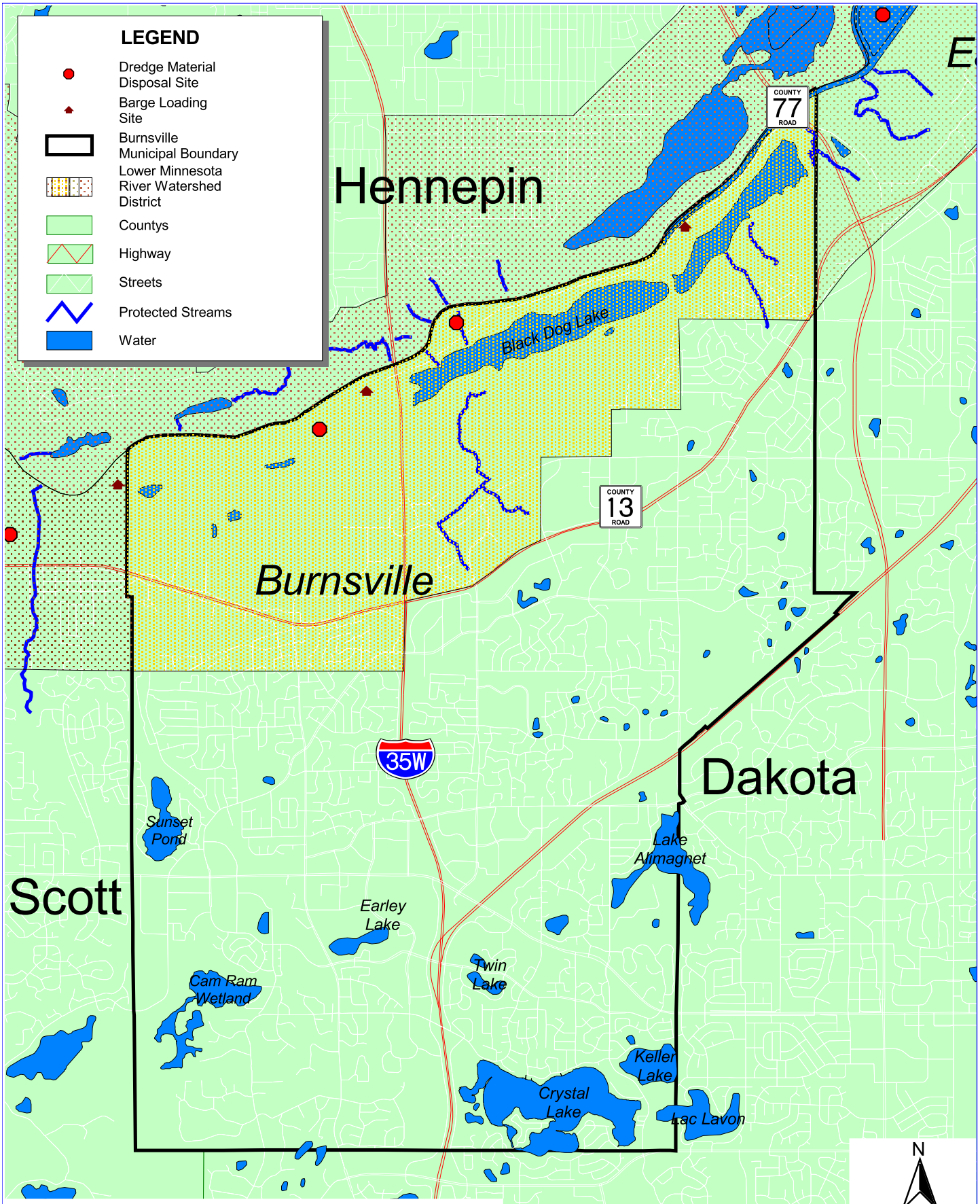
Construction of a navigation channel on the Minnesota River was first authorized in 1892. In that year, Congress authorized the Minnesota River navigation project which provided for the construction of a 4-foot channel from the mouth of the Minnesota River at its confluence with the Mississippi River upstream for a distance of 25.6 miles to Shakopee. This authorization is still in effect, and the U.S. Army Corps of Engineers (COE) is required to provide for this maintenance.

In 1942, a channel 9 feet deep and 100 feet wide was dredged by the COE from the mouth of the Minnesota River to Savage (13.2 river miles) at the expense of local interests. The 1958 River and Harbor Act authorized improvements on the Minnesota River from its mouth upstream to river mile 14.7, a point one-half mile above the railroad bridge near Savage. Under this authorization, a channel 9 feet deep and 100 feet wide was provided. Three cutoffs to eliminate bends in the river were made to aid navigation. Wide passage or turnouts were provided to permit tows to pass safely.

Maintenance of this channel is accomplished by cooperative agreement between the Lower Minnesota River Watershed District and the COE. Periodic dredging is required to maintain the navigation channel.

Both private pleasure craft and commercial traffic navigate the Lower Minnesota River, but commercial barge traffic dominates. The major commodity transported on the river is bulk grain or grain products, shipped from five storage and loading terminals operated by Peavy, Continental, GTA, Bunge, and Cargill grain companies. Other commercial terminals handle petroleum products (Richards Oil Co.), salt (U.S. Salt Co.), and coal (Northern States Power Co.).

Figure 15 illustrates commercial navigation on the lower Minnesota River.



Source: Lower Minnesota River Watershed District

SEH	9/20/02	COMMERCIAL NAVIGATION	FILE NO. ABURNS9904.00	
	watershed.apr naf		FIG NO. 15	

POLLUTANT SOURCES (BARR, 2000)

The following environmentally contaminated sites have been identified within Burnsville:

1. Safety Kleen Corporation, 1401 Cliff road – an RCRA Treatment, Storage, and Disposal Facility.
2. Freeway Sanitary Landfill, 113th Street West and I-35W.
3. Old Freeway Dump, east of I-35W and 1/4 mile north of 121st Street West.

The MPCA identified numerous leaking underground storage tank (LUST) sites in Burnsville. The MPCA also has lists showing registered above- and underground storage tanks, according to City. The MPCA also has information on permitted feedlots and permitted wastewater discharges.

Information on pollutant sources is available from the MPCA (651.296.6300). This detailed information has not been included here as it is subject to frequent change and may be obtained by calling the MPCA at the number listed or visiting the MPCA's website. The MPCA's website (www.pca.state.mn.us) has information on various pollutant sources and related regulatory programs.

Pollutant source information is also available from the Dakota County Environmental Management Department. The Department maintains maps and a database that display MPCA-reported LUSTs, MPCA-reported spills, MPCA-registered ASTs and USTs and Dakota County-licensed hazardous waste generators. This information maybe accessed by the public upon reasonable request to the County.

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GOALS AND POLICIES

Minnesota Rules 8410 - Surface Water Management (BWSR, 1992) require the establishment of Goals and Policies for the effective management of water resources. The italic passages that follow are from the 8410 rules, illustrating consistency between the WMO Plans and the City's plan. Many of the requirements listed are specific to WMO plans and do not apply directly to Local Plans. However, they are provided to illustrate how the City's Plan goes beyond the requirements for local plans by addressing many of the components of WMO plans.

M.R. 8410.0080 - Establishment of Goals and Policies (WMO Plans)

Subpart 1. Plan Contents. Each plan must contain specific goal statements and corresponding policies relating to the overall purposes specified in Minnesota Statutes, Section 103B.201. The goals and policies of the Watershed Management Organization shall attempt to avoid conflict with County, regional, or state goals and policies. The goals must be outlined in sufficient detail to provide direction regarding what the policies should accomplish, provide direction to the organization's board, and allow for the success or failure of the goals and policies to be quantified. The goals and policies should recognize the fundamental relationship between water quality and land use. Development of goals and policies must, at a minimum, address the issues in Subparts 2 to 9.(BWSR, 1992).

M.R. 8410.0170 Subp. 5. Establishment of policies and goals. (Local Plans)

Each local plan must state specific goals and corresponding policies related to the purpose of these plans, be consistent with the policies and goals of the organization plans within the city or township, and address the relation of the local plan to the regional, state, and federal goals and programs outlined in part 8410.0070.

END STATEMENTS ON THE ENVIRONMENT

In 1997, City Council adopted an "End Statement on the Environment," which reads:

> ***"People find Burnsville is an environmentally sensitive community ensuring preservation and enhancement of its natural resources."***

This Plan supports the City's End Statement on the Environment by developing specific goals and policies and by translating them into action.

Goals

A ***goal*** is a desired end toward which water management efforts are directed. This section of the plan identifies goals for water resources planning and management functions and for specific water bodies. The goals of this plan were established in accordance with the purposes of the water management programs required by

Sections 103B.201 to 103B.251 and in conformance with the goals of the watershed management organizations having jurisdiction in Burnsville including the Vermillion River Water Management Organization, Black Dog Watershed Management Organization and the Lower Minnesota Watershed District.

The Plan proposes goals across 12 perspectives. These goals also satisfy the requirements of Minnesota Statutes, Section (103B.235) and Minnesota Rules, Chapter 8410 for local water resource management planning. The plan goals are summarized in Table 8.

Table 8 - Summary of Plan Goals

Goal Number	Goal	Goal Statement
1	**Water Quantity (Flood Control)**	Control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of runoff.
2	**Water Quality**	Achieve water quality standards in lakes, streams, and wetlands consistent with intended use and classification.
3	**Erosion Control**	Minimize soil erosion through increased education and enforcement.
4	**Wetlands**	Maintain or increase wetland acreage and increase wetland values in accordance with the adopted Comprehensive Wetland Protection and Management Plan.
5	**Public Participation, Information and Education**	Increase public participation and knowledge in management of the water resources.
6	**Monitoring**	Implement a comprehensive water resources monitoring program.
7	**Maintenance and Inspection**	Preserve the function of water resource facilities through routine inspection and regular maintenance activities.
8	**Recreation, Fish and Wildlife**	Manage water recreation activities and improve fish and wildlife habitat.
9	**Ground water**	Prevent contamination of the aquifers and promote ground water recharge.
10	**Regulatory Responsibility**	Maintain regulatory authority at the local level while recognizing the role of other local, state and federal entities and complying with specified programs and requirements.
11	**Finance**	Establish funding sources to finance water resources management activities.
12	**Land Use**	Recognize the relationship between land use cover and water resources management.

Policies

Each goal has several corresponding policies. A policy is a governing principle that provides the means for achieving established goals.

Standards

Standards are an extension of the policies. They provide specific, detailed guidance regarding water management practices. Plan standards are included in Appendix D of this Plan.

Action Plans

Specific Action Plans have been developed for each of the major lakes. The Action Plans identify problems related to achieving the stated goal and solution for addressing the problems.

Implementation Plans

For each of the goals, a related Implementation Plan has been established. The Implementation Plan corresponds directly to the stated goal and policies, and to the identified subwatersheds. The Implementation Plans include specific activity steps, available resources, and the means of measuring the completion of the activity step, a target date for completion and an estimated budget. A lead department is also identified in the annual implementation plan summaries in the Implementation section of this Plan. The combination of these implementation plans will formulate the overall strategy for implementing the Water Resources Management Plan.

GOAL 1: WATER QUANTITY

M.R. 8410.0080, Subpart 2. Water Quantity. Each (WMO) plan must outline goals and policies describing how storm water runoff will be managed. The maximum allowable peak runoff must be established for appropriate subwatersheds to the extent necessary to assure that the goals and policies of the organization will be met and address how runoff from developments creating more than one-acre of new impervious surface will be managed [note: this requirement is no longer in Statutes] *with respect to Minnesota Statutes, Section 103B.3365. The plan must describe the criteria used for defining "appropriate subwatersheds."*

Goal: Control flooding and minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of runoff.

Traditional storm water management deals with just one component of the hydrologic cycle; surface runoff. Large amounts of energy are directed towards alleviating significant negative impacts of surface runoff and flooding on the cultural, water, and natural resources. The primary management strategy is shifting from detention in both existing natural (wetland) and constructed basins, to low impact development (LID) techniques and Integrated Management Practices (IMPs) that emphasize reduction of runoff volume and on-site runoff control via infiltration or small volume storage to mimic predevelopment hydrology for more frequent rainfall events. This trend will help remedy the negative impact of storm runoff on lake quality. With increased value placed on wetlands, the number and extent of wetlands that can be used for detention will decline. The approach to water quantity management relates directly to water quality, wetland management, erosion control, and land development strategies. By doing a better job at managing the quantity of runoff, the other goals of this Plan are more easily and efficiently achieved.

Water Quantity Objectives

At the August 15, 2000, Council work session, there was a clear consensus that water quantity issues should be the highest priority in the plan. Flooding in several areas of the City in July 2000 played a key role in establishing water quantity (i.e., flooding) issues as the highest priority of this Plan. Figure 16 illustrates the location of flooding resulting from the July 2000 storms. The following paragraphs summarize a few of the City's highest profile water quantity issues.

Earley Lake

Following a flood event in July 2000, interest in developing an immediate solution to the Earley Lake problem was renewed as one of the top priorities for storm water management in the City. A feasibility study was completed in the spring of 2001 that explored several alternatives to reduce or eliminate these problems. Two alternatives from the report were selected by the City Council as capital improvement projects. Hydrologic/hydraulic modeling for Earley Lake assuming both improvements showed a significant reduction in the flood levels for a 100-year storm event. Construction began in the fall of 2001 and was completed in the spring of 2002.

River Hills/ Northeast Burnsville

Heavy rains in July 2000 focused attention on area-wide drainage problems in northeast Burnsville. A detailed model of pipe capacities was completed as part of the planning process. The model is based on field-verification of the in-place drainage system and a specific analysis of the inlet capacities of existing catch basins. Improvements at Galtier/Highway 13 and Chandler Court Pond were implemented during late 2000 and early 2001. Improvements in water quality also resulted from this project.

Additional storm sewer improvements that will address flooding problems in northeast Burnsville were completed between 2002 and 2007 as part of the City's street reconstruction program. This work included portions of Hayes Drive, Hayes Court, 27th Avenue North, 27th Place, London Drive, London Court, and Prescott Court.

South Twin Lake

Local flooding relative to existing flood easements continues to be a problem. Proposed modifications to the existing outlet structures could increase the discharge capacity at lower water levels. However, during further evaluation of this system, it was determined not to result in substantial improvements, without major modifications to the downstream conveyance system in South Cross Boulevard. Improvements were completed to install a trash guard at the outlet to help reduce the plugging of the outlet by floating debris.

Crystal Lake

Crystal Lake's high water levels have created concerns relative to lost recreational opportunities and shoreline erosion. Modifications to the outlet system were identified that will significantly reduce the duration of high water levels on the lake. During the July 2000 public meeting, Crystal Lake residents indicated that their preference was to first address water quality issues on Crystal Lake. Therefore, structural modifications of the Lake's outlet system will be a lower priority in the Plan.

Keller Lake

In the mid-90s, a study was prepared to evaluate options to increase the discharge from Keller Lake to Crystal Lake (SEH, 1996). No improvements to the system were made. The conditions that precipitated the study appear to have been short-term. However, improvements to Crystal Lake's outlet may improve the conditions that were studied in 1996.

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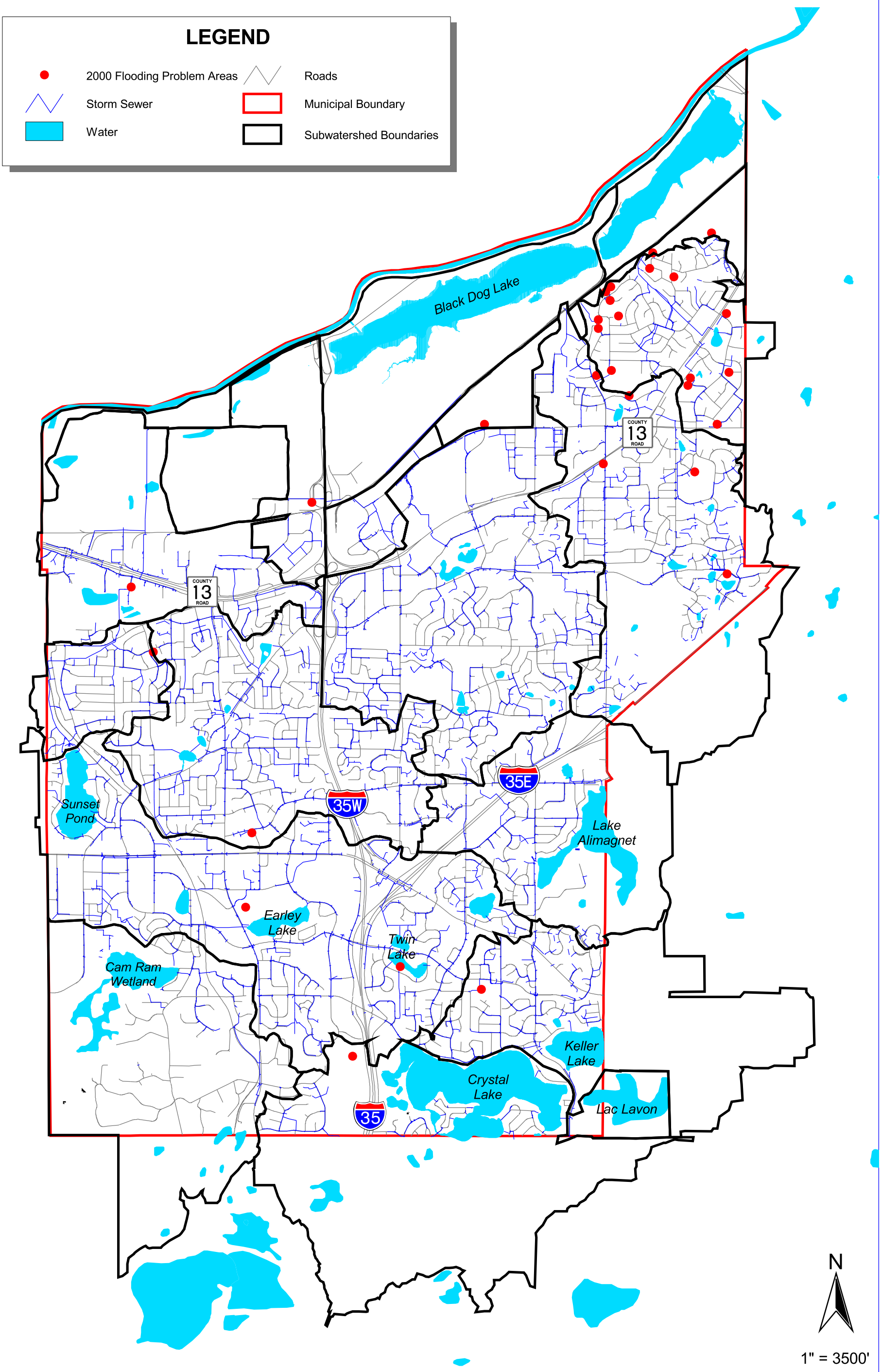


SEH	9/20/02	JULY 2000 WATER QUANTITY PROBLEM AREAS	FILE NO. ABURNS9904.00	
	watershed.apr naf		FIG NO. 16	

Back of 11 x 17 – Fig. 16

Policies and Implementation Plan

Tables 9 and 10 present policies and implementation activity steps the City has developed to meet the water quantity goals of this plan.

Table 9 - Water Quantity Policies

Subject:	
➢ Storm Water Runoff (Rate and Volume) Management	
Purpose:	
➢ Control runoff	
Goal:	
➢ Control Flooding and Minimize related public capital and maintenance expenditure necessary to control excessive volumes and rates of runoff.	
Water Quantity Policies	
Policy 1.1:	Low Impact Development (LID) techniques (or volume control/infiltration practices), along with conventional constructed detention ponds for large, infrequent rainfall events, should be relied upon to help mimic pre-development hydrology and to control downstream flooding. Existing peak flow rates shall not be exceeded.
Policy 1.2:	Increases in the volume of runoff should be minimized by utilizing infiltration and/or filtration practices to control the runoff volume from frequent rainfall events to existing levels, in areas where soils and site constraints are favorable.
Policy 1.3:	Where LID techniques are not feasible, the City prefers regional detention areas to small, on-site ponds for large, infrequent storm event runoff rate control, whenever practical.
Policy 1.4:	Emergency overflows or outlets to drainage systems that are below the low-slab elevation of adjacent structures, or other provisions designed to minimize flooding, shall be provided to prevent flood damages.
Policy 1.5:	Encroachment into the flood plain and flood way (volume) below the established 1-percent flood levels shall be prohibited except when mitigating action is demonstrated to preserve the storage capacity, prevent a surcharge in the flood profile, and minimize excessive velocities.
Policy 1.6:	The minimum building elevation shall be elevated to prevent flood damage from the established 1-percent storm event, in accordance with established City ordinances and the standards of this plan.
***Policy 1.7*:**	The City encourages the use of alternative landscape techniques and materials to reduce rates and volumes of runoff.
Policy 1.8:	The City shall acquire easements covering ponds, wetlands, flood plains and ditches as part of land development approvals.
Policy 1.9:	For runoff tributary to the Credit River or to the Lower Minnesota River Watershed District from: a. undeveloped subwatersheds, post-development discharge rates leaving the watershed shall be maintained at or below predevelopment rates for all flood events up to and including the critical 100-year event; and b. from fully developed subwatersheds, discharge rates leaving the watershed shall be maintained at existing rates for all flood events up to and including the critical 100-year event.
Policy 1.10:	The City will not limit itself to the use of gravity flow stormwater conveyance systems and may consider pumps in areas where feasible to reduce watershed to lake area ratios.

Table 10 - Water Quantity Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1 Implement improvements to reduce flood levels and duration on Earley Lake	• Water Resources Management Plan • Area developers • Burnsville Center • Asbuilt drawings • Hydraulic modeling	• Feasibility Study • Public Hearing • Construction Contract • Completed Improvements	Done	NA
2 Implement trunk storm sewer improvements in Northeast Burnsville (South River Hills) to mitigate flooding problems	• Water Resources Management Plan • Area developers • Asbuilt drawings • Hydraulic modeling	• Feasibility Study • Construction Contract(s) • Construction Improvements	2002 2002 2003 2008	$15,000 NA $400,000 $600,000
3 Update hydrologic models for Credit River, Black Dog Fen and trout stream tributaries and promote reductions in peak flow rates.	• Developer's engineer files • City's consulting engineer design files • State/County/WMO design files • Contour maps • Land use maps • Soils maps • Black Dog Fen Investigation,	• Model • Technical memo and revised data tables	2003	$35,000
4 Identify known flooding and drainage problem areas using GIS	• City maintenance staff • Field review • Reports of resident complaints	• Map of problem areas • Implement local drainage improvements	Annual 2002-2006 2007-2009 2010-2016	NA $50,000 $60,000 $70,000
5 Develop a model site to establish, promote and monitor the effectiveness of alternative landscape features and innovative stormwater measures	• Available Alternative landscape resources • Heart of the City Storm Water guide for developers • Earley Lake Infiltration Garden • Water Quality Implementation Plan	• Site acquired • Site developed • Monitoring data and report	2003 2004	See Table 13 #4
6 Oliver Court storm sewer improvements to increase capacity (Black Dog Watershed – West Subwatershed)	• Drainage Study (URS/BRW Dec. 2000)	• Completed plans and construction	2003	$110,000

GOAL 2: WATER QUALITY

M.R. 8410.0080, Subpart 3. Water Quality. Each (WMO) plan must outline specific water quality goals and policies for natural surface water storage and retention systems within the organization. Goals should be related to parameters or quantities that can be measured. The relationship of land use to water quality should be considered when developing goals and policies. The goals and policies should be developed to strive for compliance with applicable water quality standards and be suitable for the intended uses of natural surface water storage and retention.

Goal: Achieve water quality standards in lakes, streams, and wetlands consistent with intended use and classification.

Water quality is often directly related to the level of nutrients in the water body. While nutrients comprise only one category of substances that can effect water quality, nutrients, principally phosphorous, must be controlled to achieve the water quality goals of this Plan. Phosphorous is almost always the limiting factor to plant growth. Increase the phosphorous and the plant species dominating the lakeshore, open water, or marsh will certainly shift to favor those plants which can best take advantage of the increased supply of phosphorous.

Controlling Nutrients through Housekeeping Practices

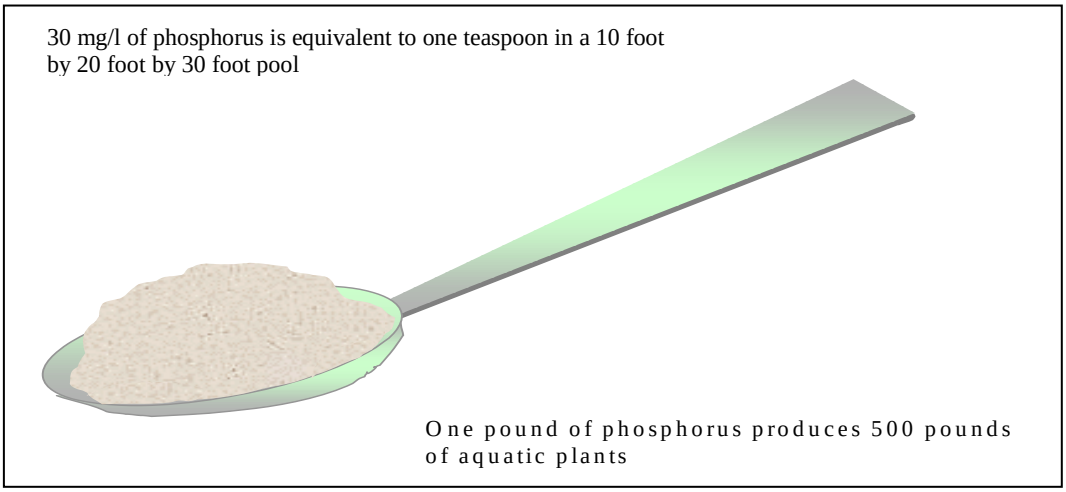
Housekeeping practices are a way for individuals to make a difference. According to the Minneapolis Chain of Lakes Clean Water Partnership, many people do not realize that organic materials, like leaves and grass clippings, fertilizer and pesticides, and pet waste can disrupt the fragile ecosystem of a lake.

Leaves and Grass Clippings

Leaves and grass clippings that make their way to lakes are doing even more damage than fertilizers, pesticides and motor oils, according to the Minneapolis Chain of Lakes Clean Water Partnership. Once in the lakes, these organic materials decay, releasing phosphorus. The excess phosphorus increases algae growth, inhibiting the growth of other aquatic plants. When algae die and decay, they exert a biological oxygen demand (BOD) on the lake, depleting available oxygen for fish.

Fertilizer Application

Fertilizer may be necessary for a healthy lawn, but the nutrients in fertilizer can be harmful to lakes and wetlands. Phosphorus from fertilizers runs off lawns and ultimately discharges to area lakes and wetlands. One pound of phosphorus can yield 500 pounds of algae. Algae can turn a lake green and damage or even kill the lake's ecosystem.



Fifteen to thirty percent of phosphorus in urban runoff comes from lawns. In general, the soils in Burnsville are already rich in phosphorus. Applying the right fertilizer, in the right amount, ensures a healthier lawn and healthier lakes and healthier wetlands. The City adopted a phosphorus free fertilizer ordinance in 2001 in direct response to this planning process. The City's fertilizer ordinance prohibits fertilizers near water bodies, requires commercial applicators to be licensed, and requires everyone to use phosphorus-free fertilizer unless a soil test is conducted to verify the need for phosphorus.

Animal Waste

From time to time, metro area beaches are occasionally closed for short periods during the peak swim season. It is not because of high nutrient concentrations, poor water clarity or swimmers itch. The beaches close as a result of high fecal coliform bacteria levels. Fecal coliform is a direct result of pet and migratory waterfowl (especially Canadian geese) waste. An education-based approach can reduce this problem. Although many people enjoy seeing Canadian geese, the birds often wear out their welcome when they become too numerous on lawns, parks and golf courses. Yards, beaches and docks become fouled with their feces. The fecal matter contributes to poorer water quality by increasing nutrient loading. See the Recreation, Fish and Wildlife Section (Goal 8) for more detail on the City's goose control strategies.

The City completed a Goose Control Plan in 2001 to help address problems with Canada Geese.

Highly Impervious Areas

Part of the planning process for developing water quality treatment projects was to identify highly impervious areas throughout the City that could be targeted for future water quality treatment practices. Treatment practices will be considered by the City in newly developed areas as well as for retrofitting existing storm systems in highly

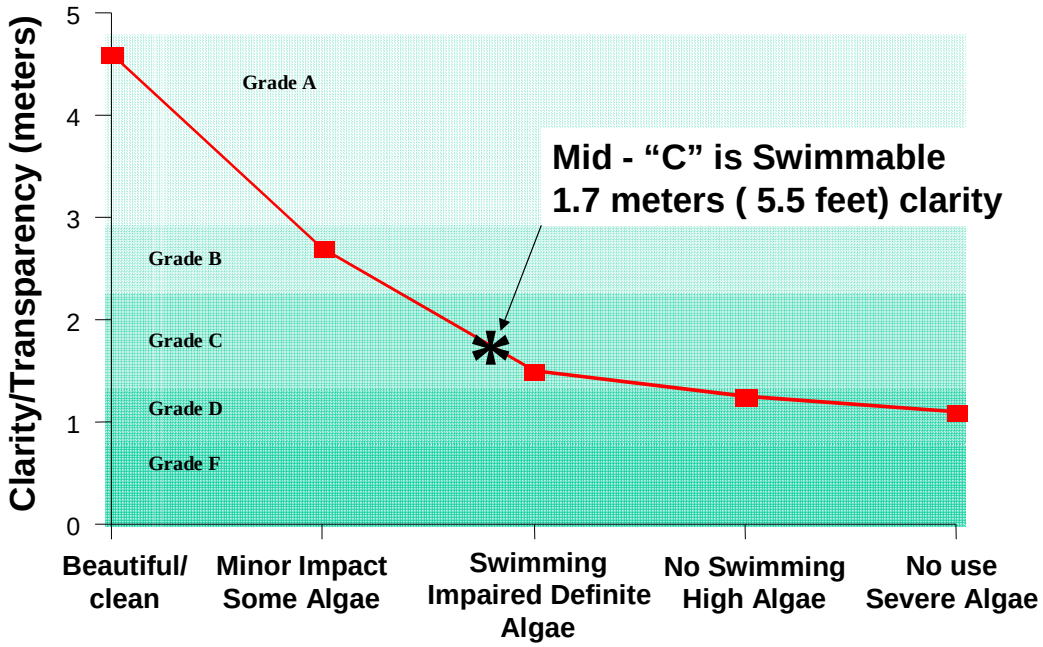
impervious areas of the City. The following list summarizes a few of the targeted areas.

- Burnsville Center;
- Heart of the City at Nicollet Avenue and TH 13;
- Office/Industrial Park areas along County Road 42 near Burnsville Parkway and Southcross Drive;
- Highway Commercial/Industrial areas along TH 13 in northwest Burnsville; and
- General Business Park areas on Nicollet Avenue north of TH13.

Water Quality Objectives

The goal setting process for Burnsville lakes revolves around their recreational suitability. In 1990, the MPCA completed a questionnaire survey related to negative lake user perceptions (Heiskary, S. and C. B. Wilson, 1990). The survey involved 200 participants within MPCA's Citizen Lake Monitoring Program. The survey focused on individual perception of both the physical appearance of their lake, along with the perceived impacts on whole-body contact recreation (i.e., swimming). Results were analyzed as a function of Secchi disc transparency. Figure 17 illustrates how citizen perception drops with water transparency and how it relates to the Metropolitan Council's grading system.

Figure 17 - Citizen Perception of Lake Quality versus Lake Clarity



The water quality objectives of the Plan are centered on Burnsville lakes that support a full range of recreation uses including full-body contact recreation (i.e., they are

swimmable). The priority lakes include Lac Lavon, Crystal Lake, Lake Alimagnet and the future (Kraemer) Quarry Lake. In addition, other significant water bodies have specific water quality goals established based on community input.

During the annual planning session in January 2000, the City Council discussed the issue of having "Grade B" lakes in Burnsville. The idea stems from a system used by the Metropolitan Council to establish lake quality report cards. The Metropolitan Council grading system ranges from A (best) to F (worst). The grading curve represents three water quality indicators (See Table 2 – Executive Summary).

The three variables used in the grading system strongly relate to open-water nuisance aspects of a lake such as algal blooms. These conditions can also indicate accelerated cultural eutrophication (i.e., aging). In-lake phosphorus levels are related to the abundance of algae, chlorophyll a is a measurement of algae abundance and Secchi disc transparency relates to the appearance of the lake. This data supports the conclusion that the less algae in the lake, the better the clarity. Nuisances such as aquatic macrophytes (i.e., weeds) are not indicated with this grading system. Recent grades of selected lakes within the City (see Table 3 – Executive Summary).

Based on the current (Year 2002) grade of selected Burnsville lakes, the question was asked: "Is it possible to achieve Grade B lakes in Burnsville?" Certainly in the case of Lac Lavon, the goal should remain Grade A, as should the goal for future Kraemer/Quarry Lake in northwest Burnsville. But for the other significant water bodies, the question is one of dollars and practicality. If we throw enough dollars at any water body it is possible to achieve Grade B quality. However, the means and methods necessary to achieve the goal, if even financially feasible, still may not be acceptable to the public.

Based on citizen input, the City Council established the lake clarity goals shown in Table 11. For the purpose of future management, the goals will shift from an overall lake grade (i.e., A to F) to the Secchi disc transparency listed in Table 11.

Note that when comparing the City's clarity goal to the action level specified for strategic lakes in the Black Dog WMO, one must understand the differences in these approaches. For example, the City's 2002 clarity goal of 2.6 meters for Crystal Lake was the desired end point or level to achieve. The Black Dog WMO action level of 1.6 meters for Crystal Lake, however, reflected the level for maintenance of existing water clarity. When the clarity varies from the action level, up or down, some action will take place. This discussed in more detail in the Black Dog Watershed Section of this Plan for the four strategic water bodies in Burnsville under the jurisdiction of the WMO, as well as for Lake Alimagnet in the Vermillion River Watershed Section. The 2002 Plan recognized that for any of the water bodies listed in Table 11, the water clarity goal(s) would be re-evaluated upon completion of any diagnostic studies completed.

The 2008 Plan includes updates to the water quality goals for Lake Alimagnet, Crystal Lake, Keller Lake based on studies completed after the publication of the

2002 Plan. In addition, Twin Lake was separated into to distinct water bodies for management purposes and is shown with two separate water clarity goals for North and South Twin individually. The completed studies detail new water quality goals and proposed capital improvement projects intended to facilitate improvements to meet the revised goals**.**

Table 11 - Lake Water Clarity Goals

Lake	2008 Clarity Goal (meters) [2]	2002 Clarity Goal (meters) [2]	3-Year Average Clarity (meters)[1]
Lac Lavon	3.6	3.6	3.8
Quarry Lake	3.6	3.6	N/A – Future Lake
Crystal Lake	2.1	2.6	1.7
Wood Pond	TBD	1.7	1.5
Lake Alimagnet	1.3	1.7	0.6
Earley Lake	1.7	1.7	1.7
Keller Lake	1.8	1.7	1.3
Sunset Pond	1.7	1.7	2.4
North Twin Lake	1.7	1.7	1.7
South Twin Lake	1.4	1.7	1.7
Black Dog Lake		To be developed	No data available

1. Based on most recent three years of monitoring data available.
2. Average secchi disk reading.

The basics premise behind revising these goals is to establish realistic clarity goals, such that when the goal is met, it will allow the water body (if impaired) to be removed from the impaired waters list. The revised clarity goals are based on the most recent lake monitoring data and lake management plans prepared for each water body. The Water Resources Management Plan allocates funding to implement the strategies indentified in the lake management plans to achieve these revised goals. The City will re-evaluate all water quality goals when this Plan is updated in 2016 to consider whether clarity goals should be adjusted or added for any of the community's water bodies. For waters that are impaired, the City plans to work cooperatively with the local watershed organizations and MPCA to convert the lake management plans in to Total Maximum Daily Load (TMDL) studies.

Policies and Implementation Plan

Tables 12 and 13 present the policies and implementation activity steps the city has developed to achieve the water quality goals of this Plan.

Table 12 - Water Quality Policies

Subject:	
▸ Water quality in lakes, streams and wetlands.	
Purpose:	
▸ To protect and improve water quality.	
Goal:	
▸ Achieve water quality standards in lakes, streams, and wetlands consistent with their intended use and established classification.	
Water Quality Policies	
Policy 2.1:	Development that disturbs one-half acre or more, or creates 5000 square feet or more of new impervious surface, shall demonstrate that the project meets the volume control standards or total phosphorus and total suspended solids reduction described in the Appendix this Plan and the discharge standards in the City Comprehensive Wetland Protection and Management Plan.
Policy 2.2:	Development that meets the thresholds for coverage under the NPDES Construction Storm Water Permit, shall meet the permit requirements for discharges to all waters and follow specific requirements resulting from approved TMDL implementation plans..
Policy 2.3:	Proposed developments must identify all reasonable steps to avoid water quality impacts, and to mitigate impacts with appropriate best management practices (BMPs), to prevent water quality in receiving waters from falling below established standards, and to meet erosion control standards.
Policy 2.4:	The City shall maintain a response plan to minimize the impact of hazardous spills.
Policy 2.5:	The City shall supplement its regulatory approach with an education-based approach to achieve proper yard care measures that will reduce nutrient loading to lakes, creeks and wetlands and to reduce the impacts of animal waste.
Policy 2.6:	The City shall promote the reduction or minimization of hard surfaced areas.
Policy 2.7:	The City will balance protection of wetlands and utilization of wetlands to protect the water quality of other water resources (i.e., wetland, lake, stream) based on wetland classifications in the City Comprehensive Wetland Protection and Management Plan.
Policy 2.8:	The City encourages the use of alternative landscape techniques and materials and low impact development (LID) integrated management practices (IMPs) to reduce water quality impacts.
Policy 2.9:	The City will manage public properties in accordance with the appropriate best management practices.

Table 13 - Water Quality Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Continue citizen participation programs to encourage stewardship of lake water quality	• City staff • Dakota County • MPCA • Metropolitan Council (CAMP)	• Lake water quality grade	Annual	NA
2. Implement City Goose Management Program	• Minnesota DNR • Home owners • Available programs from other communities • Minnesota DNR • City Goose Management program • Recreation, Fish & Wildlife Plan Goal	• Lake water quality	Annual	$13,000
3. Develop and implement a program to investigate the nutrient characteristics of existing ponds on a prioritized subwatershed basis	• Prioritized list of subwatersheds • GIS database • U of M Approach • Black Dog WMO Study	• Documentation and database revision	2003-2016	See Table 27 #1
4. Develop a model site to establish, promote and monitor the effectiveness of alternative landscape features and innovative stormwater measures	• Available Alternative landscape resources • Heart of the City • See Water Quantity Goal	• Site acquired • Site developed • Monitoring data	Ongoing	See Table 61 #4 See Table 72 #1
5. Develop specific water quality enhancement strategies for Burnsville Center	• Available as-built drawings • Parking studies • Future use and operational plans	• Documented strategies and schedule	2004	$25,000 $3,250,000
6. Implement water quality improvement projects	• Heart of the City, Block #1 Bioretention (2002) • Wetland restoration site (0.8 acres) south and east of Crystal Lake Beach Parking Lot. • Judicial Pond/Judicial Road • Water quality projects in other areas of the City • North Twin Lake (Wetland banking credits)	• HOC Block #1 • Water quality improvements	2002 2005 2007 2008 2009 2010 2011 - 2016	$50,000 $200,000 $575,000 $35,000 $450,000 $370,000 $1,020,000
7. Provide adequate treatment to address potential discharge of storm water to future Quarry Lake	• Industrial Park Pond Study (SEH, 2001) • Future zoning and land use for Northwest Burnsville	• Completed land acquisition and constructed project • Revised zoning	2002 2002	See Table 80 #2
8. Encourage development to include low impact development techniques, use of alternative landscapes and promotion of infiltration	• Available Information • Example projects (see Heart of the City Subcatchment – Black Dog Watershed)	• Approved narrative with development plan • Implemented project	2002	See Table 61 #4

GOAL 3: EROSION CONTROL

M.R. 8410.0080, Subpart 9. Erosion. Each (WMO) plan must identify specific goals and policies that will control soil erosion consistent with the goals and policies outlined in this part.

Goal: Minimize soil erosion through increased education and enforcement.

Soil Erosion's Connection to Water Quality

Water quality problems are frequently linked to high phosphorus concentrations. Phosphorus is often transported to surface water through soil erosion but can also be transported to waters in a variety of other mechanisms**.** Nevertheless, erosion control is extremely important in the effort to improve water quality. Soil erosion and sediment deposition also can create pond and drainage way performance and maintenance issues.

Ponds and drainage facilities are impacted by erosion and sediment from a variety of sources including construction sites and street sanding in the winter. The coarse sediment accumulates in ditches and ponds where runoff velocities are low. Usually a sand delta appears at a storm sewer outfall that is a visible indication of the effectiveness of erosion and sediment control measures and road maintenance activities of the past winter. As the sediment builds up over time, it reduces the capacity of the drainage system and the pollutant removal capabilities of ponds by reducing storage volume below the outlet, and reduces infiltration rates. Extending the life of facilities involves source control and elimination of the material that causes the problem. Regulatory aspects will control a major portion of the sediment. Street maintenance and an effective sweeping program (see Maintenance and Inspection) will also have a positive impact.

Stream and River Bank Erosion

Stream bank erosion occurs as a result of increasing peak flow rates and sustained high flows which can severely damage stream bank vegetation, cause bottom scour and accelerate the erosion process. Each of the Watershed Organizations in Burnsville is specifically addressing this issue. Burnsville's efforts to control the rates of discharge provide adequate control at this time. The City Plan will be amended in the future to remain consistent with future stream protection strategies of the Watersheds.

The City will consider opportunities to implement bioengineering practices and approaches to help stabilize the river bank and reduce bank erosion along the Minnesota River.

Policies and Implementation Plan

Tables 14 and 15 present policies and implementation activity steps the City has developed to achieve the erosion control goals of this Plan.

Table 14 - Erosion Control Policies

Subject: ➢ Erosion control	
Purpose: ➢ To control erosion and sedimentation	
Goal: ➢ Minimize soil erosion through increased education and enforcement	
Erosion Control Policies	
Policy 3.1:	Erosion and sedimentation control plans shall be reviewed and enforced by the City of Burnsville for all grading activities. These plans shall conform to the general criteria set forth by the City's erosion and sediment control ordinance and applicable NPDES Construction Site Erosion Control Permits (MPCA).
Policy 3.2:	The City shall implement the erosion control ordinance to control erosion and sediment to extend the effective life of water resources facilities and reduce pollutant loading.
Policy 3.3:	The City shall develop proactive measures such as education, incentives and recognition of erosion control efforts to prevent soil erosion.
Policy 3.4:	Construction site inspection by the City must be completed prior to commencing earthwork activities to ensure the proper best management practices are in place.
Policy 3.5:	Horizontal, terrestrial buffer zones of 20 feet are encouraged around existing wetlands and storm water ponds. New development or redevelopment projects must provide the 20 foot buffer zone around wetlands and are encouraged to provide 20 foot buffers around existing storm water ponds. Buffers are required around new storm ponds, resulting from new development or re-development. Buffers shall be maintained in native vegetation, to provide habitat for wildlife. (See also Table 16.)
Policy 3.6:	The City will maximize the use of bioengineering approaches whenever possible for all slope stabilization and permanent erosion control projects, including consideration of reducing bank erosion along the Minnesota River.

Table 15 - Erosion Control Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Budget
1. Include an erosion and sedimentation component to the inspection and maintenance program	• See Maintenance and Inspection Goal and implementation plan	• Annual inspection process	NA	NA
2. Develop an erosion and sediment control guidance manual	• City ordinance • Existing practice manuals	• Approved document	2003	$15,000
3. Add a half-time staff position dedicated to erosion control activities	• Storm water utility	• Inspections	Annual (Start 2002)	$25,000

GOAL 4: WETLANDS

M.R. 8410.0080, Subpart 8. Wetlands. Each (WMO) plan must outline specific goals and policies regarding the management of wetlands within the organization and identify high priority areas for wetland preservation, restoration, and establishment. Wetland management goals and policies should address utilization, protection and preservation, and the enhancement or restoration of wetlands identified in the organization. Each plan must also evaluate the need to establish wetland-banking system.

Goal: Maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City, in accordance with the adopted Comprehensive Wetland Protection and Management Plan.

The key to meeting the City's wetland goal is the implementation of a Comprehensive Wetland Protection and Management Plan (WPMP). In 1997, the City received a grant from BWSR to develop a wetland plan. The plan was completed in 1998 and adopted by City Council. The wetland inventory was based on the wetlands shown on the National Wetland Inventory (NWI) and the City's Water Resources Management Plan (WRMP). In addition, the evaluation of each of the basins included in the inventory consisted only of a brief visit and visual analysis of each wetland. Field delineation, assessment of hydrology, identification of all plant species and characterizations of soils were not performed.

The City completed an update to the Wetland Protection and Management Plan (WPMP) in 2008 The main objective for the updated WPMP is to provide a current inventory of the wetland resources in the City, differentiate regulated wetlands from other water features, and develop a comprehensive approach to regulate and protect wetlands based on wetland functions and associated public values.

The WPMP includes an update of the results of a complete field inventory of the City along with an assessment of the quality of the wetland resources completed in 1998. It is intended to provide a guide for City staff and residents to make informed decisions about the future development and redevelopment of the City with respect to the protection, conservation, and management of wetland resources.

Strategies

It is a priority in the City of Burnsville to preserve and enhance the quality of the natural resources in the community. The following are the strategies that will be utilized by the city of Burnsville to preserve and evaluate the community's wetland resources.

- Maintain primary responsibility for managing water resources at the local level but continue coordination and cooperation with other agencies and organizations.

- Establish appropriate protection criteria based on wetland functions and values.
- Achieve water quality standards in lakes, streams, and wetlands consistent with their designated uses and established classifications.
- Protect and rehabilitate wetlands to maintain or improve their function and value.
- Minimize soil erosion and sedimentation in wetlands. Improve Water Quality.
- Use GIS and available resources on restorable wetlands to identify likely areas of wetland restoration. Identify opportunities to control invasive species.
- Provide information and educational resources to improve knowledge and promote an active public role in management of water resources.

Table 16 provides a summary of the updated buffer requirements as they affect each of the different wetland classifications. A map of the updated 2008 wetland inventory is provided as Figure 13, which is discussed in more detail in the Land and Water Resources Inventory section of this plan..

Table 16 - Summary of Wetland Buffer Requirements

Wetland Classification	Permanent Buffer Strip Average Width (feet)	Minimum Permanent Buffer Zone Width (feet)	Percentage Native Vegetation
Protection	50	30	Entire
Improvement	35	25	Entire
Management	25	20	Majority
Management II	20	20	Majority

Policies and Implementation Plan

Tables 17 and 18 present policies and implementation activity steps the City has developed to help achieve the wetland management goals. Please refer to the Wetland Protection and Management Plan (SEH 2008) for more detail.

Table 17 - Wetlands Policies

Subject: ➢ Wetland Management	
Purpose: ➢ To utilize, protect, preserve and enhance wetlands.	
Goal: ➢ Maintain or increase the amount of wetland acreage, and increase the wetland functions and values within the City, in accordance with the adopted Comprehensive Wetland Protection and Management Plan	
Wetland Policies	
Policy 4.1:	The City shall administer wetland protection and mitigation in accordance with the Minnesota Wetland Conservation Act and the City's Wetland Ordinance.
Policy 4.2:	The artificial water level fluctuation (bounce) in wetlands resulting from storm water runoff shall be managed in accordance with the City's wetland classifications.
Policy 4.3:	Where open water areas are permitted to be excavated in wetlands for the purpose of creating habitat diversity, the excavation shall be done in conformance with DNR regulations and the Minnesota Wetland Conservation Act and the City's wetland ordinance.
Policy 4.4:	The City will identify all restorable wetlands.
Policy 4.5:	The City will require conformance to the buffer requirements in the Wetland Management Plan and as prescribed in the wetland ordinance.
Policy 4.6:	The City of Burnsville will utilize the available technical resources of outside agencies, such as the Department of Natural Resources, Dakota Soil and Water Conservation District, the Board of Water and Soil Resources and/or the Watershed Management Organization, for review of private developments and City-proposed projects that may affect wetland resources.
Policy 4.7:	The City will utilize the U.S. Fish and Wildlife Service for review of projects that may impact the Refuge.
Policy 4.8:	Developers must provide field delineation in accordance with applicable rules and regulations to determine the jurisdictional boundaries of wetlands, including a report of the results of the field delineation, detailing the methodology and findings of the delineation. A printed and electronic copy of the approved delineation boundary will be required.
Policy 4.9:	Prior to any site development activities, the City will verify through a wetland boundary determination to identify the location and extent of any wetlands present. The results of the wetland boundary determination will be compared to the field delineation data provided by the developer.
Policy 4.10:	Any review of a proposed wetland encroachment will first address the issue of avoidance and project alternatives. Prior to allowing any wetland encroachment, all reasonable attempts to avoid such alteration must be demonstrated. This avoidance must also consider the reasonableness of the no build alternative.
Policy 4.11:	Sequencing Flexibility, as defined in the Wetland Conservation Act, may be applied to Management Area wetlands. Sequencing Flexibility shall not apply to wetlands classified as Improvement or Protection Areas.

Table 17 (Continued)

Policy 4.12:	Replacement for unavoidable wetland impacts will be provided by the developer (if possible, within the same subwatershed), in accordance with the requirements of the City Comprehensive Wetland Protection and Management Plan.
Policy 4.13:	The City will not allow excavation, or other non-filling related alterations to an existing wetland without the expressed written approval of the City Manager or designee. Excavation within the boundaries of existing wetlands will be allowed only if the action will not change the use or character of the basin. Excavation will be allowed without replacement in basins as Management Areas. Excavation will not be allowed in basins classified as Improvement or Protection Areas unless it can be shown that the proposed excavation will improve or enhance the functions and values of the basin.
Policy 4.14:	Management II wetlands having existing direct storm water discharges will be managed primarily for the purpose of storm water storage and treatment. Additional storm water runoff can be directed to these basins without prior treatment as long as the developer shows that the treatment capacity of the basin and other wetland functions and values are not adversely affected.
Policy 4.15:	Pretreatment of storm water runoff discharged directly into Management Area wetlands having no existing direct discharges of storm water shall be provided by the developer in accordance with City standards.
Policy 4.16:	Storm water runoff discharged directly into Improvement or Protection Area wetlands shall be pretreated in accordance with City standards.
Policy 4.17:	The City of Burnsville supports the use of banking wetland credits for the replacement of wetland impacts to Management Area wetlands. Those proposing banking projects are encouraged to locate mitigation banks in those subwatersheds within the City having lost significant wetland habitat and at sites approved by the City. Restoration of wetland habitat is preferred to wetland creation. Priorities for wetland banking include the potential restoration sites identified in this plan, interspersion of wetland types, successful revegetation with diverse native species, areas greater than 10 acres in size and position within a watershed that provides needed functions.
Policy 4.18:	The City will encourage developers to include wetland improvement as well as wetland protection strategies in proposed development and redevelopment projects. Public Value Credits (PVCs) may be provided for improvement of existing wetland habitat associated with development and/or wetland replacement projects, in accordance with established WCA rules.

Table 17 (Continued)

Policy 4.19:	Annual monitoring of wetland replacement, banking and improvement projects will be required as specified in the rules of the Wetland Conservation Act. The City will maintain an escrow account for each development or redevelopment project requiring wetland monitoring. A portion of the escrow will be returned to the developer each year upon receipt of the annual report. Any remaining balance in the account will be returned to the developer upon approval for the project by the Technical Evaluation Panel
Policy 4.20:	The City will continue its involvement in the Wetlands Health Evaluation Program (WHEP).
Policy 4.21:	The City will assess opportunities for purchase of vacant properties with restoration or wetland improvement opportunities. Incentive to explore property acquisition may include the need for wetland mitigation or banking for City projects, identification of a significant resource needing preservation, identification of tax forfeited property or offer of purchase by the property owner.
Policy 4.22:	The wetlands and associated recreational and wildlife habitat opportunities within the areas zoned as Conservancy Districts will continue to be protected to a maximum practical extent.

Table 18 - Wetland Implementation

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Continue citizen participation programs to encourage stewardship of wetland resources	• City Natural Resources Staff/Intern • Dakota County Staff • MPCA • WHMP	• Index of biological integrity	Annual	NA
2. Prepare and mail newsletter for public education about the importance of wetland resources and their protection and management	• City Natural Resource Staff • Burnsville Bulletin	• Completed Document • Mailing List	Annual	NA
3. Develop guidelines for developers that summarize City policies and requirements for development and redevelopment that may affect wetland resources	• City Natural Resources Staff • Comprehensive Wetland protection and Management Plan • Natural Resources Master Plan	• Published Guidelines	Complete	NA
4. Assess opportunities for wetland restoration and wetland banking in City parks and other vacant parcels	• City Staff	• Records of restoration and banking sites and access	Annual	NA

GOAL 5: PUBLIC PARTICIPATION, INFORMATION & EDUCATION

M.R. 8410.0080, Subpart 5. Enhancement of Public Participation; Information and Education. Each (WMO) plan must outline goals and policies describing who will participate and when public participation will be encouraged. Goals and policies must at least address the creation and purposes of advisory committees and public information programs.

Goal: Increase public participation and knowledge in management of the water resources.

Public involvement is a strategy that recognizes people want to be involved in decisions that affect any facet of their life. It creates and implements opportunities for the public to participate in the processes that lead to decision-making.

Web Site Availability - http://www.ci.Burnsville.mn.us.

The web site is an alternative medium to provide municipal information to both City residents and those people who live outside Burnsville. An electronic version of the water resources management plan will ultimately be accessible on the web. Because the Plan has such a wide audience from engineers and planners, to developers and citizens, to scientists and educators, electronic access to the text and mapping creates a better understanding of the goals, policies and activities of this Plan.

The City will continue to distribute information on pertinent water and wetland management issues via the Burnsville Bulletin. The Bulletin will promotes opportunities for residents to participate in water resources management activities.

The City will make an ongoing effort on both a City-wide and watershed level toward educating the public by distributing information to its residents on responsible practices they should employ to protect water resources within the community. The program shall also educate residents on the benefits of using phosphorus-free fertilizer. Educational information shall also be provided regarding the proper use of a wide range of lawn chemicals.

Policies and Implementation Plan

Tables 19 and 20 present policies and implementation activity steps the City has developed to achieve the goals of this plan.

Table 19 - Public Participation, Information and Education Policies

Subject: ➢ Enhancement of Public Participation, Information and Education	
Purpose: ➢ Encourage active community involvement in water resources management.	
Goal: ➢ Increase public participation and knowledge in management of the water resources of the community.	
Public Involvement Policies	
***Policy 5.1*:**	The City will use a public involvement process in resource management decision-making (i.e., the Parks and Natural Resources Committee).
***Policy 5.2*:**	The City will use a variety of media, including newsletters, local cable television and the City's Website, to inform the community about water resource issues program including alternative landscapes, phosphorus free fertilizer, aquatic plant management, etc. The City will make an ongoing effort on both a local and regional level by distributing information to residents on responsible practices to protect water resources. Educational information will also be provided regarding the proper use of a wide range of lawn chemicals and proper disposal of hazardous household materials.
Policy 5.3:	The City will work with existing public and private resources to increase public participation in water resources management.
Policy 5.4:	The City will establish model interpretive sites for public education.

Table 20 - Public Participation, Information, and Education Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Budget
1. Conduct Public Education Program to develop an understanding of goals, policies and implementation of the Water Resources Management Plan (WRMP)	• City staff • Lake association members • Environmental Quality Fairs • Earth Day Activities • Water resources management plan • City newsletter • Local Newspaper	• Public participation meetings • Resident Survey • Response to feedback • Lake plan revisions • City newsletter	Annual	NA
2. Involve civic, neighborhood groups, business, industry and schools to promote activities which improve water quality	• City staff • Schools • Existing stenciling program • Newsletter • Phosphorus free fertilizer ordinance	• Completed presentation • Presentation evaluations	Annual	NA
3. Expand the City's Web Site, describing this plan and citizen involvement opportunities	• City Staff	• Complete home page • System support and update	2002	NA
4. Continue to publicize and support the existing Parks and Natural Resources Commission	• City newsletter • PNRC Annual Plan • City Council	• Evaluate progress towards annual goals	Annual	NA
5. Pursue education related grants	• List of applicable programs • Grant applications	• Completed applications • Grant award	Annual	NA
6. Continue citizen program to assist in watershed monitoring	• Monitoring Goal	• See Monitoring Plan	Ongoing	NA
7. Involve stake holders in making decisions about water resources	• City staff • Lake association members • Environmental Quality Fairs • Earth Day Activities • Water resources management plan • City newsletter • Local Newspaper	• Public participation meetings • Resident Survey • Response to feedback • Lake plan revisions	Ongoing	NA
8. Explore an annual City Council recognition program for environmental projects completed in the City	• City Staff • BDWMO • Lower MN WD • Lake Association	• Recommendation to Council for recognition program	2004	NA

GOAL 6: MONITORING

MR 8410.0100, Subp. 5 Data Collection Programs. Each (WMO) plan must establish water quality and quantity monitoring programs tat are capable of producing accurate data to the extent necessary to determine whether the water quality and quantity goals of the organization are being achieved. The programs shall, at a minimum, include the location of sampling, the frequency of sampling, the proposed parameters to be measured, and the requirement of periodic analysis of the data.

Goal: Implement a comprehensive water resource monitoring program.

Types of Monitoring (Wells, 1992)

Water resources' monitoring is not a one-dimensional activity. Monitoring takes different forms and has different characteristics, depending on its purpose and intended uses. Typically, three general types of monitoring are conducted:

1. ambient;
2. compliance; and
3. special research or study monitoring.

Ambient monitoring focuses on describing baseline conditions and possible trends in water quality or quantity. Ambient monitoring provides "early warnings" of problems or resources needing particular attention. Ambient monitoring also gives the information needed to evaluate the effectiveness of management programs and projects.

Compliance monitoring is usually done in response to a specific statute, ordinance, or rule. Depending on the regulatory program, this monitoring may be conducted either by the regulated community or the regulatory agency. It is probably the least useful for determining water quality baselines and trends.

Special research and study monitoring is conducted to develop basic information about a specific issue, concern, or theme where such information is missing or incomplete. Monitoring results must be used carefully to make broad-based conclusions because it is often short-term in nature. Still, when compliance and special research and project monitoring data are properly integrated with ambient data, more complete analysis of ambient conditions or trends will result.

Local Data Collection

The DNR, Metropolitan Council, the WMOs and citizen volunteers have conducted monitoring in Burnsville. The future contribution of local governments to water data collection must be recognized, encouraged, and developed. Current lake water quality data for many of Burnsville's lakes is generally insufficient to establish baseline water quality. Clearly there is a need to expand the existing monitoring at the local level, even beyond that potentially available from citizen-volunteers. There is also a need

for the City to acquire additional water quality data, based on a review of existing information.

Lake Monitoring

Citizen Lake-Monitoring Program (CLMP)

The CLMP is a cooperative program combining the technical resources of the MPCA and volunteer efforts of citizen to collect water quality data on lakes (MPCA). Volunteers collect water transparency data using a Secchi disk on a once-per-week frequency. Long term transparency monitoring helps detect signs of water quality degradation. Data compiled from Secchi readings is used by MPCA staff to prepare water quality reports, compile trends analysis, plan lake protection strategies and define lake characteristics by region. There is a one-time fee for volunteers, to cover the cost of equipment. Volunteers receive instructions on using the disk, data sheets and a copy of annual lake water quality reports in their region.

Citizen-Assisted Monitoring Program (CAMP)

The CAMP program began in 1992 as a cooperative program between the Metropolitan Council and local governments. The purpose of the program is to obtain a profile of the water quality in the metro area. Data collected is analyzed by the Metropolitan Council and an annual report is produced for participating local governments. CAMP is similar to the CLMP, except that it is regional, not statewide, in nature. Through the CAMP program, Metropolitan Council collects water quality samples for basic water chemistry analysis.

Volunteers monitor lakes and make general observations about water color, temperature and odor; wind conditions; water surface conditions; cloud cover; lake level; air temperature; amount of aquatic plants; the lake's physical condition and its suitability for recreation. Volunteers may also collect water samples, and take detailed measurements of water clarity. Water samples are then analyzed by the Metropolitan Council for nitrogen, chlorophyll and phosphorus levels.

Water quality data including Secchi disc depth (clarity), total phosphorus and chlorophyll –a concentrations were collected at the lakes below, in the years listed:

- Crystal Lake – 1973, 1980, 1983, 1989, 1994-2007
- Keller Lake – 1996-2007
- Lac Lavon –Secchi disc only 1989 – 1991, 1997-2007.
- Earley Lake – 1994-2007
- Wood Lake – 1996-2007
- Sunset Pond – 1994-2007
- Twin Lakes – 1999, 2001-2007

Wetland Monitoring

Land use changes and landscape level activities will influence the functional status of wetlands. Changes in the amount of surrounding open space, surface water systems, and ground water can lead to changes in wetland bio-diversity, habitat, dominant vegetative cover, and hydrology.

Burnsville, in partnership with the Dakota County Environmental Education Program, operates a volunteer wetland monitoring program named the Wetland Health Evaluation Program (WHEP). Burnsville's WHEP program allows citizens to assist in monitoring the health of several wetland areas in the City by sampling and documenting wetland plant, frog, and invertebrate communities. Volunteers are trained in how to gather and document the health assessment information. Funding for the program was approved by the Minnesota Legislature in 1999 under the LCMR Trust Fund.

Stream Monitoring

The City acknowledges the stream protection efforts in Burnsville by the Lower Minnesota River Watershed District and the DNR. Monitoring trout stream segments in the City will also be evaluated and coordinated with the WMOs and DNR.

Storm Water Runoff Characterization

As part of the Water Resources Management Plan, six different locations were monitored during the 1999 growing season. These areas are shown in Figure 18 and include the following:

- Inflow to Wood Park Pond;
- Runoff from Burnsville Center;
- Industrial area near Southcross;
- Inflow to Crystal lake;
- Crystal Lake discharge to South Twin; and
- Inflow to Lake Alimagnet.

The sampling units used for this project were the Sigma Samplers, 900 Series. These sampling units were installed in storm sewer manholes, with the intake tube and flow sensor attached to the bottom of the manhole. No rain gauges were available, so the sampling units were programmed to collect samples once the water level in the manhole reached a certain depth. This depth varied between sites, with the average depth being between 0.4 and 1 inch. There were only two Sigma units available for use in the monitoring, so the units had to be rotated between the sites. Monitoring occurred from June until November 1999.

No samples were taken at Site #5, the flow from Crystal Lake to South Twin Lake. This was due to a large baseflow in the storm sewer system, and the difficulty in installing the sampling unit.

Only one set of data was taken at each site. The results can be seen in Table 21 for the following parameters that were analyzed:

- Total Suspended Solids (TSS)
- Total Phosphorus (TP)
- Total Kkjeldahl Nitrogen (TKN)
- Soluble Phosphorus
- Nitrate/nitrite as N
- Copper
- Lead
- Zinc

A comparison of the EPA's Results of the Nationwide Urban Runoff Program (NURP) Volume I-Final Report is illustrated in Table 22. Table 22 gives the median event mean concentration (EMC) by land use category. The EMC is defined as the total constituent mass discharge divided by the total runoff volume.

Table 21 - Summary of Burnsville Water Quality sampling

(1999 growing Season)

	Site 1	**Site 2**	**Site 3**	**Site 4**	**Site 5**	**Site 6**	**NURP Averages**		
Land Use	**Res.**	**Commer**	**Indust.**	**Res.**	**Res.**	**Res.**	**Res.**	**Commer**	**Indust.**
Location	Wood Park Pond	Burnsville Center	Inndustrial Area	Inflow to Crystal Lake	From Crystal to So. Twin	Inflow to Alimagnet			
Total Susp. Solids - TSS (mg/l)	46	3*	63	80	NS	20	101	69	69
Total Phosphorus – TP (mg/l)	0.2	0.086	0.37	0.29	NS	0.48	0.383	0.201	0.201
Total Kjeldahl Nitrogen TKN (mg/l)	0.3	0.6	1.8	1.5	NS	1.7	1.9	1.18	1.18
Soluable Phosphorus (mg/l)	0.087	0.083	0.19	0.19	NS	0.42	0.143	0.08	0.08
Nitrate/Nitrate (mg/l)	0.36	0.33	2.5	0.7	NS	0.62	0.736	0.572	0.572
Copper (:g/l)	10	10	10	10	NS	10	33	29	29
Lead (:g/l)	40	40	40	40	NS	40	144	104	104
Zinc (:g/l)	90	20	30	20	NS	20	135	226	226

* This sample was received outside of the EPA recommended holding time
NS = No sample taken.

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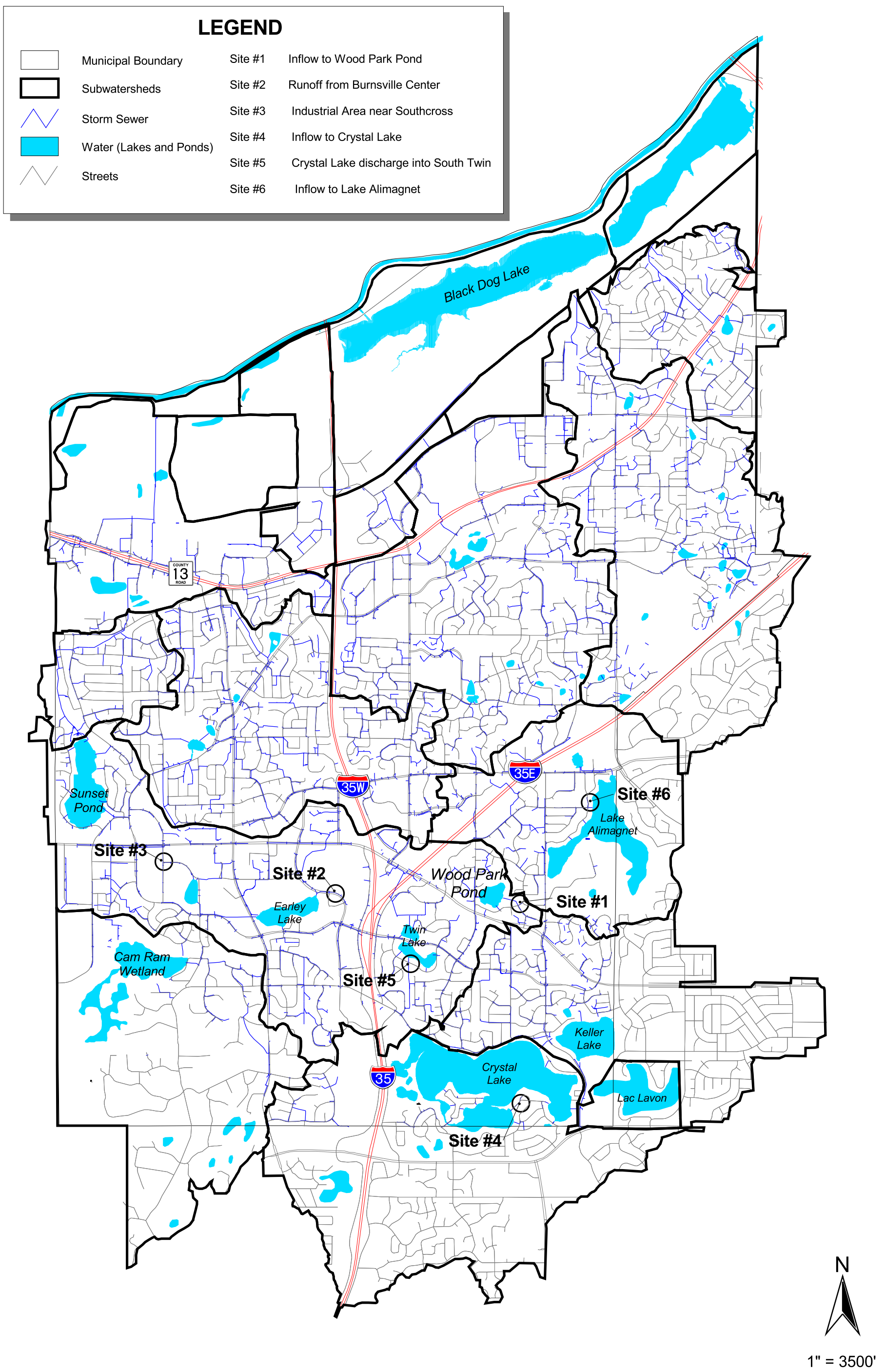

SEH	9/20/02 watershed.apr naf	WATER QUALITY SAMPLING LOCATIONS	FILE NO. ABURNS9904.00 FIG NO. 18	

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Table 22 - Median EMCs for All Sites by Land Use Category

(Source: Results of the Nationwide Urban Runoff Program Volume 1 Final Report, EPA 1983)

Pollutant		Residential		Mixed Use		Commercial		Open/Nonurban	
		Median	CV	Median	CV	Median	CV	Median	CV
Biological Oxygen Demand (BOD)		10.0	0.41	7.8	0.52	9.3	0.31	-	-
Chemical Oxygen demand (COD)	mg/l	73	0.55	65	0.58	57	0.39	40	0.78
Total Suspended Solids (TSS)		101	0.96	67	1.14	69	0.85	70	2.92
Total Lead		144	0.75	114	1.35	104	0.68	30	1.52
Total Copper		33	0.99	27	1.32	29	0.81	-	-
Total Zinc		135	0.84	154	0.78	226	1.07	195	0.66
Total Kjeldahl Nitrogen	:g/l	1900	0.73	1288	0.50	1179	0.43	965	1.00
$NO_2 – N + NO_3 – N$		736	0.83	558	0.67	572	0.48	543	0.91
Total P (TP)		383	0.69	263	0.75	201	0.67	121	1.66
Soluable P (TP)		143	0.46	56	0.75	80	0.71	26	2.11
SP/TP – median – 0.30		0.37		0.21		0.40		0.21	

*CV = Coefficient of Variation

Most concentrations for the sampled sites were under the EPA's guidelines. The Industrial area by Southcross Drive had the most parameters over the median EMC. TKN, soluble phosphorus, and nitrate/nitrite as N all exceeded these guidelines. In general, industrial sites tend to have higher pollutant loading due to their larger amounts of impervious area. The inflow to Crystal Lake had an inflated soluble phosphorus concentration by approximately 0.05 mg/L over the median EMC. The inflow to Lake Alimagnet had a high concentration of both TP and soluble phosphorus.

High nutrient loadings to water bodies can cause many water quality problems. It can lead to eutrophication issues, which can affect the biology of the lake along with the recreational use and aesthetics of the lake. The results from the water quality monitoring can be used in the future to target areas where more storm water management techniques could be applied, and water quality treatment facilities could be built.

The Black Dog WMO continues to monitor the quality outfalls from the Burnsville system including the box culvert behind Cub Foods at TH13, through Metropolitan Council's Watershed Outlet Monitoring Program (WOMP) (Barr, 2001). In addition, Citizen Lake monitoring and monitoring by Metropolitan Council continues to add to the significant database that exists for Burnsville's water resources. A monitoring element in the implementation plan will facilitate future trends analysis.

Current Monitoring Strategy

It is the City's intent to implement a monitoring program that meets or exceeds the monitoring requirements of the agencies having jurisdiction within the City. In addition to "traditional" monitoring elements, aesthetic and habitat indicators will also be monitored. Table 23 summarizes the City's monitoring program strategy.

Table 23 - Water Resource Monitoring Program Summary

Monitoring Location	Type of Monitoring	Monitoring and Follow-up Activities
Black Dog Lake	Monitoring by Xcel and City.	City to work with Xcel to analyze monitoring data. Consultant to review Xcel data, prepare a report and summarize for Council Report to Council on status of Black Dog Lake
Alimagent, Keller, Crystal, Lac Lavon	Annual participation in CAMP program	Annual aesthetic and habitat monitoring per BDWMO
Wood Pond, Earely Lake, Sunset Pond, Twin Ponds	Annual participation in CAMP program	Aesthetic and habitat monitoring every three years per BDWMO
Wetland Monitoring	Reference wetlands to be selected by the City	
Storm Water Ponds	Visual and Sediment accumulation surveys	On an as-needed, complaint or project specific basis
Remnant Trout Streams	Annual thermal and chemical (Cu) monitoring	
Key storm water outfalls	Minimum of three representative storm water events	

Policies and Implementation Plan

Tables 24 and 25 present policies and implementation activity steps the City has developed to meet the monitoring goals of this plan.

Table 24 - Monitoring Policies

Subject: ➢ Water Resource Monitoring Program	
Purpose: ➢ To make informed data-supported water resource management decisions at the local level.	
Goal: ➢ Implement a comprehensive water resource-monitoring program.	
Monitoring Policies	
Policy 6.1:	The City will conduct monitoring programs to develop baseline and long-term water quality records.
Policy 6.2:	The City will cooperate with all public agencies to conduct monitoring projects and share monitoring data with them.
Policy 6.3:	The City will establish citizen-monitoring programs.
Policy 6.4:	The City will establish private-monitoring agreements related to private ponds and wetlands.

Table 25 - Monitoring Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Implement water resource monitoring plan for the City to track water quality trends and monitor the effectiveness of water quality management programs	• Water Resources Management Plan • Natural Resources Department Budget • WMOs • Metropolitan Council • City staff • Lake Associations • Schools • Newsletter • Neighborhood meetings • Agency support • Dakota County	• Completed monitoring plan matrix • Formation of and active monitoring by citizen groups • Annual monitoring including report	Annual	$25,000
2. Maintain GIS database and establish a process for collection and retrieval of water quality data on GIS	• Monitoring reports • City GIS • Existing Filing System • GIS Records Management	• Electronic map - access to monitoring data • Adopted process and annual maintenance of data acquisition model	Annual 2006	NA $10,000

GOAL 7: MAINTENANCE AND INSPECTION

M.R. 8410.0100, Subp. 6. Management programs. Each organization (WMO) plan must assess or require local plans to assess the need for periodic maintenance of public works, facilities, and natural conveyance systems and specify any new programs or revisions to existing programs needed to accomplish its goals and objectives. Each plan must further identify which units of government or private parties are responsible for maintenance. Each plan must, at a minimum, assess or require local plans to assess:

A. the need and frequency for sweeping of public and private streets and parking lots;

B. the need and frequency for inspecting stormwater outfalls, sumps, and ponds;

C. the adequacy of maintenance programs for stormwater facilities and water level control structures owned by both organization members and nonmembers;

D. the condition of public ditches constructed under Minnesota Statutes, chapter 103D or 103E, if the organization has jurisdiction over these systems;

E. the need to establish a water body management classification system to provide for water quality and quantity management based on a hierarchical basis;

F. the need to establish local spill containment clean-up plans; and

G. the need for other management programs as considered necessary.

All proposed management programs establishing a classification system for the management of water bodies shall be consistent with chapter 7050. If organization classifications are inconsistent, the organization shall petition the Pollution Control Agency to revise the classifications in chapter 7050. (BWSR, 1997)

Goal: Preserve the function of water resource facilities through routine inspection and regular maintenance activities.

Inspections help to spot potential problems before they become major problems. Routine maintenance reduces the long-term costs related to drainage system maintenance, while achieving water quantity and water quality goals. The application of development standards ensures consistency in the work produced and the documentation of the constructed systems. Appropriate land use controls can be used to maximize the preservation of the natural drainage systems and to control increases in runoff rate, volume and pollutant loading.

Pond maintenance raises questions about the nature of the accumulated sediment and methods for disposal. Based on empirical data, the cycle for pond clean out averaged 25 years (Yousef, et. al, 1991). The rate of accumulation in Burnsville ponds will be faster due to sand/salt application in the winter. Local sediment testing should be

considered on a case-by case- basis to determine how material should be handled. Pond maintenance agreements with private pond owners can ensure that ponds are kept in good operating condition and that routine maintenance occurs. In addition, documentation and acquisition of proper ponding easements is very important.

An Effective Storm Drainage Maintenance Program

There are four basic steps to developing an effective storm drainage maintenance program.

- Evaluate Problems, Needs, and Opportunities;
- Definition of Goals and Objectives;
- Establishment of Policies, Programs and Priorities; and
- Development of Criteria and Standards for Evaluating Performance and Assessing the Degree of Attainment of goals.

Each of these four elements is covered by this WRMP. However, to be effective, three needs must be addressed: the need for good management; the need for good data; and the need for sound financing. Many well-conceived maintenance plans are never fully implemented because of the lack of funding. A sound and continuous source of revenue is vital to an effective maintenance program.

Stormwater Drainage Maintenance Plan

The City of Burnsville's Public Works Department developed a Stormwater Drainage System Maintenance Plan in November 1992 (OSM, 1994). This Plan was developed to assure that the City's system of stormwater retention/treatment basins and stormwater conveyance systems are adequately inspected and maintained to assure that they meet their design functions. Outlined below is a description of the various inspection and maintenance activities the City intends to undertake in regard to achieving this goals:

- Inspect stormwater retention and treatment basins a minimum of once every five years to determine if the basin's retention and treatment characteristics are adequate.
- The City's storm sewer system will be inspected at a minimum of two times annually. During these inspections, debris present at trash grates, catch basins grates, and other places within the system will be removed so as to provide reasonable assurances that the system will operate in an unobstructed manner during rainfall events.
- The City will sweep the streets in accordance with the water quality management provisions outlined within this report. Specifically, this will require prioritization of sweeping activities to be focused around areas draining to water bodies having high recreational use potential. Spring sweeping is anticipated to be completed no later than May 10th in these priority areas.

- On an annual basis, inspect storm sewer outfalls for evidence of scouring or the presence of significant deposition of silt. Scouring problem areas will be noted and stabilized. In areas where silt deposition is evident which is indicative of significant erosion upstream, an inspection will be made of the upstream watershed to identify the source of erosion. Suitable corrective measures will then be undertaken to correct the erosion problem.

The City is responsible for maintenance of storm water practices on City property and drainage easements, Dakota County and MnDOT are responsible for maintenance of practices on their respective properties and private systems are the responsibility of the property owners. The City will encourage the use of structural and non-structural storm water BMPs in private lands, including parking lot areas (such as those at Burnsville Center and other highly – impervious areas). The City intends to work with these private owners to develop maintenance plans and agreements.

Street Sweeping

The City currently sweeps streets a minimum of twice per year, with more frequent sweeping completed as staff resources are available. In the spring, broom sweepers are used to clean sand from the streets. Depending on weather, the work begins in March. The City purchased two high dump sweepers in the late 1990's and stopped contracting out this work. The street sweeping budget decreased while the work was completed earlier and more efficiently. Fall leaf sweeping of the whole City was conducted for the first time in 2001.

The street-sweeping plan will focus resources on areas around the highest quality resources first, before moving out farther into the watershed. The City plans to purchase a vacuum sweeper and hire additional staff to operate sweepers in 2004 to further expand and enhance the street sweeping program.

Storm Water Facility Maintenance Agreements

Many communities require pond maintenance agreements with private pond owners for ponds constructed to meet City standards due to development. A model storm water facility maintenance agreement is provided in Appendix E. The agreement is intended to ensure that storm water facilities are in good operating condition and that routine maintenance occurs. The agreement is intended to used as a model for establishing maintenance agreements on ponds and non-pond storm water facilities (e.g., rain gardens, bioretention areas, porous pavements, etc.).

Removal and Disposal of Accumulated Sediment

Pond maintenance raises questions about the nature of the accumulated sediment, whether or not it is contaminated, and methods for disposal. Research in Florida (Yousef, et al. 1991) focused on sediment accumulation rates, heavy metal enrichment (Cd, Cr, Cu, Fe, Pb, Ni and Zn) and leaching of metals from sediments using Toxicity Characteristics Leaching Procedure (TCLP), developed by USEPA,

from bottom sediments in detention /retention ponds. The two-year study of nine ponds found the following:

- Accumulated top sediments showed a higher percent volatile matter, and nutrient and heavy metal content than the more dense underlying soil;
- Metals are retained in the sediment;
- TCLP results suggest that these sediments are not hazardous waste; and
- Land disposal of the sediments could be possible on non-agricultural land, within diked areas or depressions in the vicinity of the pond, or transferred to landfills.

Local sediment testing should be considered on a case by case basis to determine how material should be handled. Table 27 identifies the level of effort the City has expended as part of their annual pond clean-out program.

Environmental Manhole Cleaning

Sump manholes have been constructed in strategic areas to trap coarse sediment. The manholes are cleaned annually. The following locations having environmental manholes are identified on Figure D-1 (See Appendix D):

- Lac Lavon Drive;
- Blue Bill Bay;
- Pershing Circle;
- Maple Island;
- East Crystal Lake Road;
- Sue Fischer Memorial Park (Youth Athletic Complex); and
- Burn-Haven Drive at the Regent at Burnsville Senior Housing Community.

Sanding Priorities

In 2006-2007 the City revised its policy on street sanding and went to all salt application for ice control. Only on very rare occasions does the City use sanding to supplement the salt applications. The City has also been experimenting with pre-wetting of the pavements and using anti-icing agents. The City has identified the four high-priority snow and ice control areas and has established a priority system for street deicing activities. The system generally follows the order below.

- Thoroughfares;
- Commercial/Industrial;
- Collectors and steep grades; and
- Residential intersections.

Policies and Implementation Plan

Tables 26 and 27 present policies and implementation activity steps the City has developed to achieve the maintenance and inspection goals of this plan.

Table 26 - Maintenance and Inspection Policies

Subject: ➢ Maintenance and inspection of the drainage system, ponds and water quality treatment practices	
Purpose: ➢ To maximize system performance and comply with NPDES Permit requirements.	
Goal: ➢ Preserve the function of water resource facilities through routine inspection and regular maintenance activities.	
Maintenance and Inspection Policies	
Policy 7.1:	The City will implement an annual inspection and maintenance plan for water resource facilities.
Policy 7.2:	The City shall require maintenance of privately constructed water quality treatment ponds through formal maintenance agreements.
Policy 7.3:	The City shall require adequate maintenance-related access for public and private water resources facilities (i.e., ponds, etc.).
Policy 7.4:	Pond clean-out activities shall be permitted under the City's Comprehensive Wetland Protection and Management Plan, and the State Wetland Conservation Act, which requires the issuance of an exemption.
Policy 7.5:	The City of Burnsville will sweep the streets at least two times annually. Future purchases of street sweeping units will give consideration to regenitive sweepers which have the greatest ability to pick up fine sediment and associated nutrients from the streets within the community. All streets will be swept as early as is practical and feasible, and the streets within the watersheds of priority water resources will be given first priority.
Policy 7.6:	The City will clean all sump catch basins or sump manholes at least annually and more often if inspection demonstrates that more frequent clean out is necessary.
Policy 7.7:	The City will establish and implement a snow plowing and snow/ice control policy that balances public safety and environmental protection.

Table 27 - Maintenance and Inspection Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Develop and implement annual inspection program for documentation of the condition of ponds and drainage system. Ensure proper inspection and maintenance of sump catch basins or sump manholes and retention/ treatment ponds	• Intern(s) • City staff • Specialized equipment • Annual inspection report • Follow-up field investigation • Public works staff	• Completed annual inspection & report • Pond cleanout program • Maintenance, improvements and equipment acquisition	Annual (Beginning in 2004) 2002 – 2004 2005 – 2006 2007 – 2008 2009 – 2016 Annual (Beginning 2004)	$40,000 $200,000 $250,000 $200,000 $150,000 $50,000
2. Acquire, write and preserve easements for the purpose of maintenance, including control of vegetation in easement	• Documentation from annual inspection reports • Property records	• Written easement descriptions • Executed easements	Annual (Beginning in 2003)	$10,000
3. Develop a prioritized plan for street-sweeping areas directly contributing to protected class wetlands	• Utility base maps • Equipment • Ice control practices	• Written street-sweeping program • Annual post-sweeping field review	2002 Annual	NA NA
4. Continue to sweep the streets in the spring, fall and spot sweeping in summer, giving priority to streets with the drainage area of priority water resources	• City Streets and Storm Sewer Department • Mechanical sweepers • (Purchased) Vacuum sweepers	• Annual sweeping program • Staff to operate sweeper • Purchase vacuum sweeper	Annual Annual (beginning 2004) 2004 – 2008	NA $60,000 $48,000
5. Evaluate snow and ice control program with emphasis on reducing sand use. Evaluate use of salt alternatives.	• City Streets department • BMPs of other agencies and available research	• Study salt alternatives • Evaluation of winter conditions, implement salt alternatives	2002 Annual (beginning 2003)	NA NA
6. Establish private maintenance and monitoring agreements	• Similar communities agreement • Example in Appendix E	• Approved agreements	Annual	NA
7. Storm Sewer Replacement Program	• Engineering and Infrastructure Department	• New/upgraded storm sewer system	2002 2003 2004 – 2007 2009 – 2012	See 76-4-2 $200,000 $325,000 $350,000

GOAL NO. 8 - RECREATION, FISH AND WILDLIFE

M.R. 8410.0080, Subpart 4. Recreation, Fish and Wildlife. Each (WMO) plan must outline how water resource based recreational activities and wildlife interests will be protected or improved through the implementation of the plan. In consideration of these issues, the plan must determine whether there is need to classify or prioritize individual water resources for management purposes.

Goal: Manage water recreation activities and improve fish and wildlife habitat.

Fisheries Management

Fisheries and Wildlife Management Responsibility

The goal of the DNR Division of Fish and Wildlife (DFW)-Section of Fisheries is to protect and enhance the fishery resource and the aquatic biological community for their long-term recreational, ecological, aesthetic, and economic benefits to the state. (Anon., 1993). DNR is the agency with exclusive responsibility for the management of fisheries in the waters of the state. The concept of ecosystem management requires that not just a species of interest be managed in a given water body, but that all plants, animals, and the physical and chemical constituents of the environment be part of the management program. (Anon., 1993).

Habitat Management

Habitat management on the part of the DNR involves several components:

- Stream habitat protection and improvement;
- Stream and Lake Crossings (roadways, utilities);
- Stream Channelization;
- Water Appropriation (from surface waters);
- Aeration;
- *Winter Aeration* is generally supported by DNR (Anon., 1993) when it benefits and/or does not harm the fishery;
- *Summer Aeration* should be used with caution, because the impacts these systems have on nutrient dynamics and fisheries is difficult to predict on individual lakes. (Anon., 1993) Summer aeration may be beneficial, neutral, or detrimental to the fishery, depending on the lake and the system used. (Anon., 1993);
- Shoreland Modification;
- Spawning Area Development and Management;
- Aquatic plant management; and
- Artificial habitat structures/fish attractors.

Biological Community Management efforts of DNR include (Anon., 1993):

- Lake Surveys and Fish Population Assessments; and
- Catch Surveys.

Fish Stocking

DNR will stock fish on a case by case basis, if justified in several situations including newly rehabilitated waters, winterkill lakes, or to introduce or maintain desirable species, compatible with the management of the indigenous fishes, to balance predatory species with prey. Stocking may be used to achieve the lake management plan presented in the Watershed sections of this plan. Lake stocking histories for Burnsville were not specifically researched as part of this plan.

Lake Rehabilitation (Anon., 1993)

Where possible, watershed problems that have contributed to changes in the fishery resource should be corrected before rehabilitation is undertaken. However, in many situations, it is very difficult or impractical to determine or correct these watershed problems and rehabilitation must be decided on a benefit/cost ratio. Although the primary objective of rehabilitation is the establishment of a recreational fishery, where feasible, re-establishment of biological diversity by stocking endemic non-game fishes should be considered. In general, only headwater lakes that are isolated waters inhabited by undesirable fish species and have a barrier to prevent the immigration of fish should be considered for rehabilitation (Anon., 1993).

Lake rehabilitation is the complete or partial elimination of fishes by the application of chemical fish toxicant, followed by restocking of the treated waters with game fish in combinations that will result in good fishing. The objective of rehabilitation is to provide good public fishing for stocked fishes and their offspring for enough years to justify costs. Chemical treatment is necessary in situations where control of undesirable species and recreation of a fishery by other means is not feasible. Lake rehabilitation techniques to improve a fishery are feasible when they can be justified by a favorable benefit/cost ratio or as a part of a general watershed management plan.

Two chemical treatment options are applicable to Burnsville lakes: (1) waters that are capable of supporting various game fish populations but have become predominated by carp or slow-growing panfish and (2) waters predominated by bullhead that have gained an advantage over game fish after occasional winters of low oxygen. Lake rehabilitation may be an option for achieving water quality goals in some of the City's lakes.

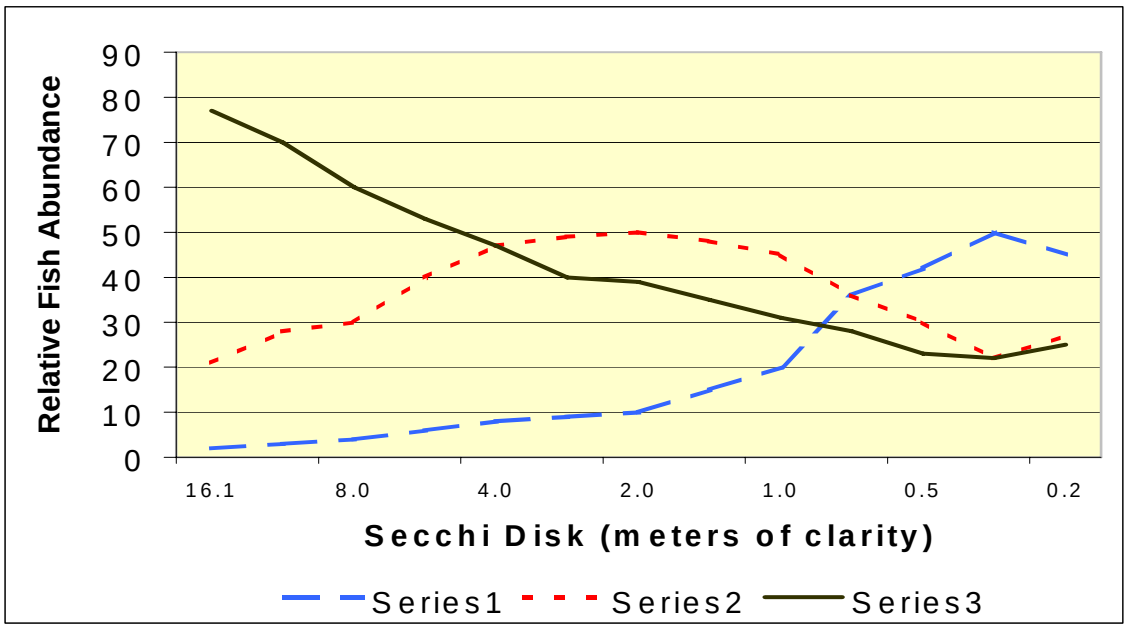
Fishery and Water Quality

Perhaps the best indicators of water quality are the yellow and black bullheads (Interagency Lakes Coordinating Committee, 1996). Yellow bullheads are found in abundance in lakes with clear water. In contrast, black bullheads reach their greatest abundance in very turbid, eutrophic waters. Similarly, northern pike are more

abundant in clear water because vision is an important factor for feeding. Members of the sunfish family also reach their highest abundance in clear, clean waters. Where small or largemouth bass, rock bass, bluegill and pumpkinseed sunfish are common, the lake is likely to be in good condition. Of these, sunfish, smallmouth and rock bass are usually associated with the highest quality. White and black crappie are more tolerant of a wide range of conditions. Both reach higher numbers in turbid water. However, presence of black crappie should not be taken as a sign of poor water quality. Walleye usually do not do well in small, clear lakes.

Based on fish abundance and trophic status, the relationships in Figure 19 were developed.

Figure 19 - Statewide Fish Abundance versus Water Clarity



Series 1: Black Crappie, Black Bullhead, White Crappie
Series 2: Walleye, Yellow Perch, Bluegill Sunfish
Series 3: Northern Pike, Yellow Bullhead, White Sucker

Public Access

Recreation from a fisheries perspective means public access, per DNR Policy No. 5, and fishing piers (Anon., 1980). Public access is not provided at each of Burnsville's eight major water bodies. New public access points and improvements to existing public access are consistent with lake rankings analysis presented in the Watershed Assessment Section of this Plan, and the lake management plans as presented in the specific watershed sections.

Water Recreational Activity: Power Boating Impacts

Studies dating back to the early 1970's found powerboat engines could produce significant stirring of bottom sediments in shallow lakes. (Wright, 1991).

Those same studies, according to Wright (1991), found that the activity of a 100-hp outboard motor causes significant increases in turbidity, orthophosphorus and total phosphorus. As powerboats stir up the nutrient-rich bottom sediments, phosphorus can be released, accelerating algae growth. The same studies establish a clear relationship between engine size and mixing depth as illustrated in Table 28. Mixing depth is defined as the maximum depth at which the engine stirred up the water.

Wright (1991) concludes by indicating that although the scientific literature cannot resolve the political issues related to powerboat controls, power boating is likely to have harmful impacts on shallow lakes.

Table 28 - Mixing Depths of Power Boats

(Reported by Wright, 1991, based on Yousef. 1974)

Horsepower	Mixing Depth
10	6 feet
28	10 feet
50	15 feet

Power boating restrictions were discussed with the public during the preparation of the City Comprehensive Storm Water Management Plan. Based on the discussions, powerboat restrictions were not adopted as a current water quality tool.

Wildlife Habitat

Open Water versus Habitat

Wetlands and associated habitat are often lost because of misdirected management efforts and related detrimental water level modifications. According to Weller (1981), increased water levels often are cited as desirable goals because the general feeling is that such marshes are more attractive to wildlife. In reality, they are just more attractive to man, both aesthetically and economically.

The increase in property value adjacent to ponds and wetlands (or the “Pond Premium”) averages about 10 percent and may be as high as 30 percent (Anon., 1995). Stevens (1995) found that respondents to a New England study were willing to pay an average of between $74 and $80 per year over a five year period for wetlands providing flood protection, water supply and water pollution control (defined herein as public works values) and between $81 and $96 per year for wetlands containing rare species of plants. Stevens calls most of this value “non-use” or existence value.

He cautions that failure to consider “non-use” values in decision making can therefore understate the value of preservation by substantial margins.

There is a distinct relationship between wetland ecology and open water. Table 29 illustrates this relationship.

Table 29 - Wildlife Habitat Factors Related to Open Water

(Weller, 1981)

	Degree of Open Water		
Factor	**Less than 12%**	**50-75%**	**Over 80%**
Water Depth	Shallow	Medium	Deep
Vegetation	Dense	Moderate	Sparse
Vegetation Type	Cattail Mono-culture	Cattail fringe with hard-stem shore	Hard-stem shore with no cattails
Bird Populations	Numerous Individuals	Many Individuals	Few Individuals
Bird Species Richness	Few Kinds	Many Kinds	Few Kinds
Muskrats	Few	Many	Few

The most crucial force dramatically influencing changes in wetland vegetation and associated wildlife communities is changing water depth, according to Weller (1981). Changing water level is the deciding influence on what plants grow where and what plant life forms dominate. Changing water levels also create stress for established plants.

Goose Problems

Although many people enjoy seeing Canada geese, the birds often wear out their welcome when they become too numerous on lawns, parks and golf courses. Yards, beaches and docks become fouled with their feces, and the fecal matter ultimately contributes to poorer water quality.

City staff recently prepared a comprehensive goose control plan (Burnsville, Canada Goose Management Program, July 2001). Burnsville has limited quality breeding sites for Canada geese, as many of the City's ponds are deep, have steep slopes and are without islands. These conditions limit the amount of emergent vegetation that normally provides ideal goose habitat. One exception is Sunset Pond, which is considered among the top three Canada goose breeding sites in the Metropolitan area.

The following list summarizes the key activities of the City's goose management program:

- Document goose damage through a complaint/damage recording system;
- Implementing an ordinance to prohibit water fowl feeding;
- Inform citizens through a variety of media and an annual workshop;
- Removal of aggressive geese or problem geese that may create traffic hazards;
- Reduce population of geese near beaches to fewer than 15 birds;
- For safety purposes, reduce population of geese to fewer than 10 birds in the summer near elder care facilities;
- Reduce population to fewer than 30 birds near Alimagnet, Crystal, Kraemer, and Sunset Pond Parks; and
- Reduce population to fewer than 15 birds near small parks, wetlands, residential and commercial areas and cemeteries where damage has been noted.

Aquatic Plant Management

Aquatic plants are an essential part of lake and wetland communities. Aquatic plants:

- Remove coliform bacteria and nutrients from the water and lake bottom;
- Help prevent shoreline erosion by breaking up wave action;
- Provide natural food and shelter for fish and wildlife; and
- Are one of the primary producers in the aquatic food chain; and affect the chemical, physical and biological characteristics of our lakes. For instance, a one-acre stand of bulrush can remove an amount of phosphorus equal to that present in wastewater created by 33 persons during the four-month growing season.

Permitting

The DNR requires permits for controlling or destroying aquatic plants or invertebrates in protected waters or wetlands. The permit program is based on Minnesota Rules, Department of Natural Resources, Chapter 6280 Aquatic Nuisance Control. The permits do not allow the following:

- Destroying or preventing the growth of vegetation by placing mats or plastic sheets or similar material on the bed of protected waters;
- Destruction of aquatic vegetation within posted spawning areas;
- Improving the appearance or aesthetics of undeveloped shoreline through aquatic plant removal; and
- Aquatic plant control where the vegetation does not interfere with swimming, boating, or other aquatic recreational activity.

DNR Permits are required to:

- Cut and pull by hand or mechanically control vegetation in an area over 2500 square feet;
- Apply herbicides or algaecides in protected waters;
- Move a bog of any size that is free floating or lodged in any area other than its original location;
- Destroy emergent aquatic vegetation in protected waters;
- Transplant aquatic plants into protected waters; and
- Use any machine that mechanically sifts lake bottom materials from protected waters lakeward of the ordinary high water level.

Chemical Control of Aquatic plants

According to Chapter 6280, the lesser of fifteen percent (in home rule charter or statutory City, or a town only) of the littoral area or 100 feet of shoreline per individual riparian property owner may be treated. There is an associated fee with the permit.

Controlling Algae and Excess Vegetation in Lakes

Alum Treatment (General Chemical Corp, 1996)

A straightforward and proven way to reverse the buildup of aquatic plants in recreational water bodies involves controlling a key nutrient, phosphorus, with alum (aluminum sulfate). Alum has been widely used to clarify and purify drinking water. A single treatment with alum generally prevents algae blooms for two to five years or more, depending on how much phosphorus enters the lake and its hydraulic residence time.

Aquatic plants need many nutrients. An over abundance of phosphorus from runoff frees algae and plants to grow excessively. Controlling phosphorus levels limits its

availability as a nutrient and halts biomass growth. If watershed management alone cannot eliminate algae blooms and other signs of eutrophication, the next step may be to bind phosphorus in the sediments with alum.

Alum is injected under water, usually in a rigid polyvinyl chloride (PVC) pipe. When alum is applied near the water surface, it improves clarity and removes phosphorus in the water column, as well as inactivating phosphorus in sediment. In severely stressed, hypereutrophic lakes, alum is most effectively dispensed near the bottom to treat sediment that becomes a nutrient sink, rather than a source.

Alum reacts with lake water to form two precipitates - aluminum hydroxide in reaction with the water itself and aluminum phosphate in reaction with dissolved organic and inorganic phosphates. The gelatinous aluminum hydroxide floc clarifies the water column by sweeping suspended solids and colloids from the water column as it sinks. When this floc reaches the bottom, it reacts with phosphorus in the sediment, binding the nutrient as insoluble aluminum phosphate complex. As this aluminum phosphate floc sits on the bottom, it coats the sediment as a thin layer that coalesces the fine sediment and limits suspension of phosphorus-rich silt by waves, currents or boating activity. Aluminum phosphate is a stable molecule that is unavailable as a plant nutrient. It will not revert back to a nutrient form under anoxic or anaerobic conditions often found in the lowest layer of a lake or in its bottom sediments.

Alum treatment requires extensive planning, in particular to determine the amount of alum needed. And, appropriate permits from the DNR are needed. Published values of batch applications, or the application from a boat or barge, range from $600 to $2,500 per acre (1996 dollars). The 1997 alum treatment of Wood Park Pond was completed at a cost of $22,000. The batch application cost was $1,133 per acre with consultant and laboratory costs of $1,311 per acre. A more detailed discussion of the Wood Park Pond project can be found in the Black Dog Watershed section of the Plan.

Copper Sulfate

Some locales treat lakes with copper sulfate (C_USO_4 $5H_2O$). The cupric ions (C_{u2}^+) inhibit both respiration and photosynthesis in algae. Copper sulfate is more toxic in soft, acid water than in alkaline water. Copper sulfate is an excellent algaecide, but it is without appreciable residual toxicity. Although copper sulfate may be quite effective in reducing phytoplankton abundance in lakes and ponds, it does little for the long-term condition. In other words, phytoplankton photosynthesis quickly returns to pre-treatment levels. As dead algae fall to the bottom and decompose, their phosphorus content is released to support another round of plant growth. In addition, the dissolved oxygen content (DO) of the lake/pond may be lowered or be completely depleted. Concentrations of copper sulfate used for phytoplankton control are seldom directly toxic to fish, but they do kill large numbers of invertebrate fish food organisms.

Weed Harvesting

Weed harvesting falls into two categories; mechanical and non-mechanical. Mechanical harvesting entails a barge-like machine to cut and collect lake weeds. Harvesters need at least two feet of freeboard to operate, creating a lot of floating vegetation. Most operations dispose of aquatic plants by using a shore conveyor, a transport barge or by making multiple trips to shore. Mechanical harvesting can produce weed fragments. Approximately 5 to 15 percent of the total cutting cannot be cleaned up immediately because of wind and wave action that washes the vegetation away. A partial solution is to use a cutter, because plants are not stacked on the back of the unit weighing it down like they are with a harvester. A cutter can work in as little as 9 inches of water.

Non-mechanical harvesting includes hand harvesting (pulling), raking, hand-held weed cutters and dragging. Non-mechanical harvesting can be highly effective. Careful pulling and hand raking can remove roots as well as stems and leaves, thereby minimizing re-growth of the plants for several years.

Forest Lake in northern Washington County is an example of a successful harvesting program. Harvesting began on the lake in 1982. Approximately 300 hours per year are devoted to operating the specialized harvester. The harvester is capable of cutting between 2000 and 2500 cubic feet of weeds per day. Cut weeds are transported by conveyor to trucks. Cuttings are transported to the local composting site. New harvesting equipment can cost $75,000 - $100,000 or more depending on specifications.

Aeration

Whole-lake or hypolimnetic (bottom water) aeration has been utilized to improve water quality. In general, whole lake aeration is used to avoid winter fish kill. *Winter Aeration* is generally supported by DNR (Anon., 1993) when it benefits and/or does not harm the fishery. *Summer Aeration* should be used with caution, because the impacts these systems have on nutrient dynamics and fisheries is difficult to predict on individual lakes. (Anon., 1993) Summer aeration may be beneficial, neutral, or detrimental to the fishery, depending on the lake and the system

Purple Loosestrife (Skinner, 1996)

Purple loosestrife *Lythrum salicara* L. is a perennial plant of European origin that is invading and degrading wetlands all across North America. Purple loosestrife forms dense, monotypic stands that replace native plant species in wetlands and lake shore habitats, degrading food, shelter, and nesting sites for native wildlife. The plant will grow in up to seven feet of water. Purple loosestrife's high seed production (each plant can produce 120,000 seeds) produces large seed banks that can last for many years, allowing the plant to recover quickly after disturbance.

Common native plants such as cattails, sedges, smartweed and others cannot compete with purple loosestrife. Consequently, animals that rely on native plant vegetation for food, shelter, and breeding areas are displaced. Loosestrife infested wetlands are also

less suitable to waterfowl because of the elimination of nesting sites and valuable food plants (waterfowl do not feed on loosestrife). Wetland mammals, like muskrats cannot utilize the plant in any way. Loosestrife is thought to be a poor nutrient assimilator.

Currently there is no chemical or mechanical means that provide long-term control of established stands of purple loosestrife. However, biological control, the use of natural enemies to control a pest, shows promise as a long-term method of reducing the effects of purple loosestrife on native aquatic environments.

Conventional Control

Efforts to control these infestations mechanically or with herbicides are very costly, must be repeated annually and do not provide long-term control. Conventional control, including cutting, burning, water level manipulation and herbicide treatment, have been largely unsuccessful except where small, isolated stands can be removed by hand or treated with herbicide. While conventional methods do kill purple loosestrife plants, once it has become established, its large seed banks, which are nearly impossible to destroy, allow rapid reestablishment. Each cut segment can generate a new plant.

Biological Control

Biological techniques reunite pest species, like purple loosestrife, with their natural enemies, such as insects, can keep many plant species from becoming pests. Successful biological control will not eradicate purple loosestrife, but it will significantly reduce the plant's negative effects on native species.

Four species of European insects have been released in North America to control purple loosestrife since 1992; one root-mining weevil, one flower-feeding weevil, and two leaf eating beetles. Of the species, the root-mining weevil and the leaf eating beetles will be the most important for the control of purple loosestrife due to the damage they cause to plant roots, leaves and stems. Burnsville is trying biological control of purple loosestrife at Crystal West Park and Alimagnet Park.

Eurasian Watermilfoil (Anon., 1993)

Eurasian watermilfoil can severely limit water recreational activities such as swimming, boating and fishing. It forms dense rooted mats of vegetation that reach the water surface. It can shade and crowd out native plants, reducing the biodiversity of aquatic ecosystems and harming fish and wildlife. There is little hard evidence so far for negative ecological impacts. However, given these concerns, it is necessary to confine this exotic plant and limit its spread in Minnesota.

Eurasian watermilfoil is a submerged aquatic plant native to Europe and Asia. Since its introduction to North America, during the 1940's, it has spread to nearly 40 states and three Canadian provinces. In Minnesota, milfoil was first discovered in Lake Minnetonka in 1987. By 1992, 55 Minnesota lakes had Eurasian watermilfoil infestations.

Eurasian watermilfoil is a perennial plant that spreads by vegetative propagation. It spreads when the plant fragments into pieces, which can taker root and grow into new plants. Milfoil plants break into fragments naturally or when watercraft got through milfoil beds. Water currents can carry fragments within and between water bodies.

Current attempts to eradicate or control milfoil in Minnesota rely primarily on herbicides. However, in consideration of public and professional concerns regarding herbicides, DNR has begun to investigate alternative control methods. According to DNR (Anon., 1993), efforts should now be made towards an Integrated Pest Management (IPM) approach for milfoil control that could ultimately include a combination of biological controls, improved use of herbicides and alternative methods such as mechanical control.

The DNR plan includes four major goals:

- Contain milfoil in Minnesota to existing water bodies and prevent the establishment of new infestations;
- Eradicate or control milfoil infestations in Minnesota in a way that does as little harm as possible to lake ecosystems;
- Support and conduct research needed to improve milfoil management; and
- Ensure that milfoil is considered in lake management.

Euarsian watermilfoil exists in Lac Lavon, Crystal Lake and South Twin Lake. The City is currently treating these lakes and discouraging any mechanical harvesting.

Zebra Mussels (Hansen, 2001)

Zebra mussels are a devastating aquatic invader that has recently been found in inland lakes of northeastern Wisconsin. The discovery of zebra mussels in a Forest County Wisconsin lake is a clear warning that Minnesota Lakes are vulnerable. Zebra mussels were introduced into the midwest in 1990 – likely carried in the ballast of European cargo ships – and have spread to at least 24 inland lakes in Wisconsin, the Mississippi and St. Croix Rivers and Lake Superior and Lake Michigan.

Once introduced, the tiny mussels can quickly overtake a lake. Just one of the zebra-striped, clam-like creatures – which grow to the size of a fingernail – can produce 30,000 to 40,000 eggs per season. Zebra mussels can form dense colonies on rocks, wood, metal and cement surfaces. They out-compete native mussel species for food and oxygen.

Zebra mussels feed on algae and water fleas, out-competing fish and potentially impacting the fishery by improving water clarity which allows young fish or small fish to be more easily preyed upon. The overall impact of an infestation would be a diminished recreation use of a particular lake.

Dredging

During preparation of the plan, lake dredging was identified by the public and the Council as a preferred lake management tool. Dredging is addressed by Minnesota Rules 6115.200 Excavation of Protected Waters (pp 5369 – 5377). In general, the DNR does not issue permits for lake dredging projects intended to improve lake depths and recreation opportunities.

Policies and Implementation Plan

The City has developed policies and implementation activity steps to achieve the goal of this section. These policies and activities are presented in Tables 30 and 31, respectively.

Table 30 - Recreation, Fish and Wildlife Policies

Subject: ➢ Water resource-based recreational activities and wildlife interests	
Purpose: ➢ To enhance water recreational facilities, and fish and wildlife habitat.	
Goal: ➢ Manage water recreation activities and improve fish and wildlife habitat.	
Recreation, Fish and Wildlife Policies	
Policy 8.1:	Natural areas, and wildlife habitat intended for preservation, shall be protected with appropriate BMPs during construction.
Policy 8.2:	Horizontal, terrestrial buffer zones of 20 feet are encouraged around existing wetlands and storm water ponds. New development or redevelopment projects must provide the 20 foot buffer zone around wetlands and are encouraged to provide 20 foot buffers around storm water ponds. Buffers shall be maintained in native vegetation, to provide habitat for wildlife. (See Table 16.)
Policy 8.3:	The City shall support programs for controlling exotic and invasive species of plants and animals.
Policy 8.4:	The City recognizes the need to balance water recreational activity with water quality and habitat issues.
Policy 8.5:	The City will explore new opportunities to integrate water resources based recreation activities and wildlife interests within wildlife corridors.
Policy 8.6:	The City will Pursue acquisition and/or preservation of the Priority Sites identified in the Natural Resources Master Plan.
Policy 8.7:	The City will Promote intergovernmental cooperation in protecting and improving areas with shared responsibility, such as sites in the Minnesota River Valley.
Policy 8.8:	The City will encourage changes to current landscaping requirements which will encourage the use of native plant materials and maximizing biodiversity.
Policy 8.9:	The City will encourage development along the Minnesota River Valley Area which will enhance its use as a recreational area and support the preservation of natural resources in a manner consistent with this Plan.
***Policy 8.10*:**	The City will review request for funds to assist lake homeowners groups with the control of aquatic weeds on all lakes which offer community wide opportunities for boating, swimming, and fishing. These lakes are: Alimagnet, Lac Lavon, and Crystal/Keller. The City will provide technical support to homeowner groups that wish to control aquatic weeds on all other water bodies.

Table 31 - Recreation, Fish and Wildlife Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Manage Eurasian Watermilfoil, Purple Loosestrife and invasive plant and animal species	• City Water Resources Staff • DNR representatives • DNR policies • Available research • Volunteers for identification of problem area • Public Process • Current efforts on Burnsville Lakes • Experiences of Lake Minnetonka • University of Minnesota • City Goose Management Program	• Identification of infestation areas • Policy and financing • Annual measurement of observed areas and control and reduction measured on the basis of annually observed areas • Goose Program Implementation	2002 2002 Annual (Beginning 2004) Annual	$8,000 $2,000 $25,000 See Table 13 #2
2. Explore aquatic plant harvesting options and opportunities	• Vendors • Other communities	• Weed harvesting recommendations • Purchase Equipment	2004 2005	$10,000 $100,000

GOAL 9: GROUND WATER

M.R. 8410.0080, Subpart 7. Ground water. If County ground water plan has not commenced at the time the plan or plan amendment is initiated, the organization shall assess the need and degree of involvement the organization (WMO Plan) has in ground water management and establish appropriate goals and policies.

Goal: Prevent contamination of the aquifers and promote ground water recharge.

Wellhead Protection Plan (WHPP)

The City has completed its WHPP in 2006 following review by the Minnesota Department of Health. The overall goal of a WHPP is to protect the public water supply from harmful contaminants. It is a preventative program, keeping harmful contaminants from entering the public water supply system. Dakota County also has a Ground Water Protection Plan that was adopted in April 2000. The information in the WHPP was used to help the City develop the prohibited infiltration zone that is part of the surface water management standards in Appendix C of this WRMP.

Prairie du Chien - Jordan Aquifer

The sensitivity of the Prairie du Chien - Jordan Aquifer to pollution was assessed by the Minnesota Geological Survey (MGS) in the Geologic Atlas for Dakota County. The relative sensitivity to ground water contamination of the aquifer underlying Burnsville ranges from very low to very high. This highly variable sensitivity is due a variable surficial geology and depths to bedrock. The sensitivity assessment is based on the soil type encountered, vertical conductivity, and depth to water table. The ratings are based on the relative travel times for contaminants to reach the ground water. There are numerous other factors that can effect the time it takes for a contaminant to move through the soils that are not considered in this rating.

Recharge Zones

Recharge to the bedrock aquifers beneath the City of Burnsville occurs in two ways, vertically and laterally. Vertical recharge occurs through overlying glacial sediments and other bedrock aquifers. This is accomplished because even low permeability units allow some leakage of ground water through them. Lateral recharge occurs as ground water moves laterally from outside the City or County, through the aquifer. Generally lateral recharge to the bedrock aquifers in Burnsville comes from the south.

Recharge to the water table aquifer occurs primarily from precipitation and surface water ground water interactions as well as laterally from outside the City. The lateral recharge to the water table aquifer comes from the southeast.

Ground water/Surface Water Interaction

Burnsville has developed a multi-layered groundwater model focusing on the Burnsville well field, Kraemer Quarry, Black Dog Fen and Savage Fen. The model will be utilized in design of groundwater withdrawal and minimization of impacts to

protected surface waters. The City is currently working with the Minnesota Department of Natural Resources and Metropolitan Council in developing a groundwater management plan.

Individual Sewage Treatment Systems

The Individual Sewage Treatment System (ISTS) Act was signed into law on May 10, 1994 (Anon., 1994), to reduce contamination of surface and ground water caused by inadequate septic systems. The law includes requirements for minimum sewage treatment standards, new construction, replacement of ISTS, disclosure of sewage-system information to property buyers and a mandatory licensing program for all ISTS professionals, including designers, site evaluators, installers, inspectors and pumpers.

Approximately 229 properties in southwest Burnsville continue to be served by on-site waste water systems. Figure 20 illustrates properties in the City where an ISTS exists based on the City parcel data base and sanitary sewer system as-builts.

A poorly maintained system can represent a significant threat to water quality, especially when the system is adjacent to significant wetlands and/or lakes. It is the responsibility of the property owner to maintain the system in proper working order.

In 2000, all existing individual systems were converted over to “A” systems. Theses locations must comply with a program that require inspection and pumping every three years.

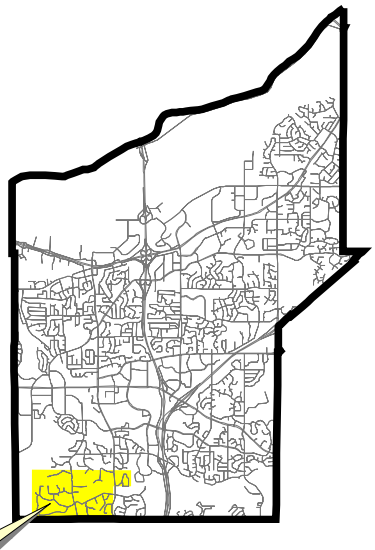
Policies and Implementation Plan

Tables 32 and 33 present policies and implementation activity steps the City has developed to achieve the ground water goals of this plan.

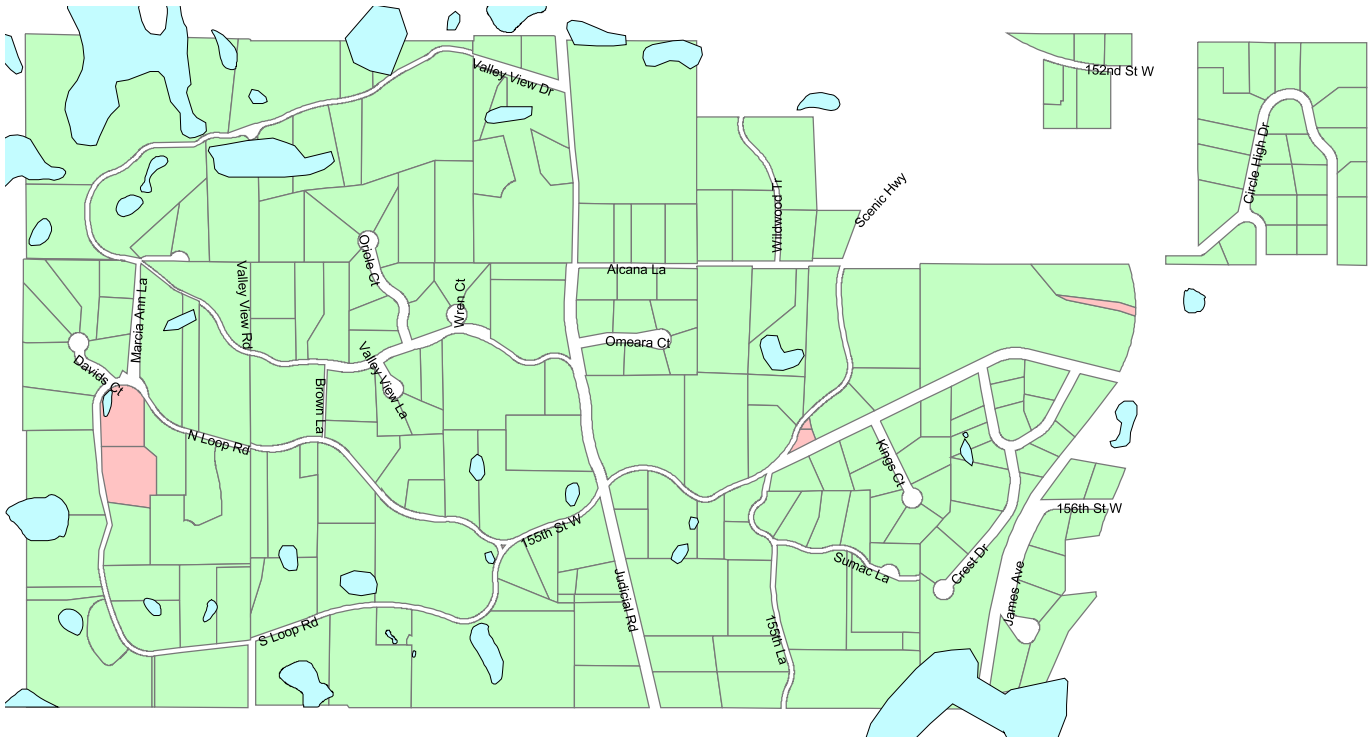
LEGEND

- Vacant Lots
- Occupied Lots
- Water

TOTAL UNSEWERED LOTS = 229
(ISTS SITES)



ISTS sites in Southwest Burnsville



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SEH	10/15/02	UNSEWERED PARCELS (ISTS) IN SOUTHWEST BURNSVILLE	FILE NO. ABURNS9904.00	
	watershed.apr sh		FIG NO. 20	

Table 32 - Ground Water Policies

Subject: ➢ Ground water Protection	
Purpose: ➢ To protect ground water by understanding and accounting for ground water/surface water interactions.	
Goal: ➢ Prevent contamination of the aquifers and promote ground water recharge.	
Ground water Protection Policies	
Policy 9.1:	The City shall develop and implement ordinances to protect identified wellhead areas.
Policy 9.2:	The City shall promote proper well abandonment.
Policy 9.3:	The City will consider alternatives to conventional storm water detention to enhance ground water recharge through infiltration in areas of the City that are not highly susceptible to groundwater contamination.
Policy 9.4:	Design and installation of on-site wastewater systems shall be in accordance with the standards set forth in Minnesota Rules, Chapter 7080 and the Individual Sewage Treatment System (ISTS) Act.
Policy 9.5:	The City will implement and enforce the existing Water Conservation Plan.
Policy 9.6:	The City shall encourage the use of alternative landscape techniques and materials to reduce dependency on ground water supplies.
Policy 9.7:	The City shall minimize the use of City wells in the Black Dog Fen and Savage Fen impact areas.
Policy 9.8:	The City will encourage the use of “gray water” and/or storm water to reduce reliance on potable water for lawn irrigation purposes.

Table 33 - Ground Water Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Prepare Wellhead Protection Plan (WHPP) in accordance with the Minnesota Department of Health rules	• Minnesota Department of Health Rules • Water Contingency and Conservation Plan • Groundwater Framework – • GIS data	• Completed plan	2002	NA
2. Update private well and individual sewage treatment system data	• MPCA (7080 Rules) • Private well driller records • GIS • Dakota County (wells)	• Complete data record via GIS	2004	$10,000
3. Include available alternative landscape design guidelines in developer packets and as part of grading plan review	• Available Alternative landscape resources	• Completed City packet for re-distribution	2005	$10,000
4. Develop a model site to establish, promote and monitor the effectiveness of alternative landscape features	• Available Alternative landscape resources • See Goals 1 and 2	• Site acquired • Site developed and monitoring data	2003 2004	See Table 13 #4
5. Update City's Water Contingency and Conservation Plan	• Water Contingency and Conservation Plan (OSM, August 1994) • DNR rules and guidelines	• Updated plan and report to city staff on changes to plan	2004	$25,000
6. Evaluate policies and approaches to protect water resources in the areas of sand and gravel operations in the City (active and inactive).	• City Staff • Dakota County	• Established Policies	2004	NA

GOAL 10: REGULATORY RESPONSIBILITIES

M.R. 8410.0100, Subp. 2. Regulatory Controls. In establishing required regulatory controls, items A to E must be considered by WMO Plans. (Note: Items A to E of M.R. 8410.0100 Subp. 2 are not repeated here).

Goal: Shift regulatory authority to the City while recognizing the role of other local, state and federal entities.

Several entities will have administrative responsibilities within the planning area. For a local water management effort to be successful, each entity's commitment and role must be clearly understood. Those currently having some level of administration responsibility include the City, WMOs, Dakota County, MnDNR, MPCA, and the U.S. Army Corps of Engineers and BWSR.

City of Burnsville

The major task of administering this plan will be in the permitting process. It is the intent of the City to assume the role of permitting for all land alteration, thereby enforcing the policies and standards of this plan.

The City's existing permit procedures include water management elements outlined in this Plan. Surface water management elements will be reviewed at the same time all other permits are reviewed. The storm water elements will meet the design standards of this plan (Appendix D).

Plat and Plan Approval

To ensure conformance to this plan, the City's preliminary and final platting process and site plan approval should require more detailed information. Erosion control, water quality and other pertinent information such as rate and volume control, regarding local plan standards are among the elements that should be addressed on final plan and/or final plats. Conditional approvals by the Planning Commission and/or Council must require the incorporation of conditional elements into the final plan to ensure compliance.

The final plan should be re-distributed to City staff to confirm the inclusion of the provisions under which the plans were approved. The Building Permit issuance process can be the check-point for staff to review final plans for compliance while holding the condition of building permit issuance as the incentive. Engineering and Natural Resources staff should have a sign-off procedure prior to Building Permit issuance.

The City's administrative responsibilities include, but are not limited to the following:

- Comprehensive Plan update(s);
- Land use regulation;
- Ordinance review and amendment;
- Local plat review and amendments;

- Permits;
- Wetland Management as LGU;
- Sediment and erosion control (ordinance);
- Groundwater - wells;
- Participation and cooperation with the programs of the WMOs, DNR and Dakota County;
- Hydrologic model update with comprehensive plan changes;
- Financing Alternatives;
- Capital improvements; and
- Conveyance system/pond maintenance;

Watershed Management Organizations (WMOs)

WMO responsibilities and authorities may include but are not limited to the following:

- Monitoring;
- Establishing land use or ordinance requirements;
- Local plan review and approval;
- Administering a permit program;
- Projects of regional significance; and
- Verification of local plan implementation.

Watershed Districts (WDs)

Watershed districts responsibilities and authorities may include, but are not limited to the following:

- Data collection, assessment and planning;
- Development review;
- Project inspections;
- Financial assistance for projects;
- Commercial navigation issues; and
- Administering a permit program.

Metropolitan Council: Comprehensive Plan Amendment

Metropolitan Council has a regional review authority regarding surface water management including:

- Local Plan review; and
- Regional controls related to nonpoint source pollution.

This plan and all subsequent amendments will become part of the City's Comprehensive Plan (adopted by reference), in accordance with Environmental Review 21040, 1995 revisions to Minnesota Statutes 103B.235, Subd. 3A and

473.859, Subd. 2 (Chapter 176, Laws of Minnesota 1995), as part of the adoption process for this plan.

The plan does not have to be re-submitted as a formal comprehensive plan amendment, subject to additional review, at a latter date. The adopted City Plan will satisfy Metropolitan Council's requirements and will be thereby recognized as an amendment to the City's Comprehensive Plan.

MPCA Phase II Storm Water Permit

Implementation of the USEPA's Phase II Storm Water Regulations (Title 40 Code of Federal Regulations, Part 122). The approach of the Phase II permit is to address water quality by focusing on six specific programming elements as shown in the inset below, for implementation of Best Management Practices (BMPs).

Six Minimum Control Measures for the NPDES Permit

(1) Public education and outreach on storm water impacts;
(2) Public involvement/participation;
(3) Illicit discharge detection and elimination;
(4) Construction site storm water runoff control;
(5) Post-construction storm water management in new development and redevelopment; and
(6) Pollution prevention/good housekeeping for municipal operations.

The Minnesota Pollution Control Agency is the NPDES permitting authority for the federal rule implementation. The MPCA implemented the Municipally Separate Storm Sewer System (MS4) permit program in 2003 and made revisions to the permit in 2006. The City prepared its original Storm Water Pollution Prevention Plan (SWPPP) in 2003 and applied for coverage under the permit as required by MPCA. The City's 2003 SWPPP was approved and the City operated under the permit by completing the measurable goals identified in each of the Best Management Practices (BMPs) within the SWPPP.

Nondegradation Assessment

The reissuance of the permit by MPCA in 2006 required cities to revise their SWPPPs and reapply for permit coverage. The City reapplied and obtained coverage based on the 2006 SWPPP and has since added BMPs that address Nondegradation requirements and a process for tracking impaired waters within the City and responding to planned or competed Total Maximum Daily Load (TMDL) studies and implementation programs.

The City was one of 30 cities required to complete a Nondegradation Assessment and Report that looked at the average annual loading of three pollutants (listed below) at 1988, 2005 and projected 2020 land use conditions. The three pollutants are:

- Total Suspended Sediment (TSS)
- Total Phosphorus (TP)
- Annual Runoff Volume

Following a required public input process and review by the local water management agencies, the City completed the study and submitted the Report to MPCA for review in 2007. The MPCA will conduct a separate public review process and notify the City of any comments or questions relating to the report.

While the 1988 to 2005 loading assessment shows an increase in the runoff volume due to the expansion of impervious surfaces from 1988 to 2005, TSS loadings have decreased, and the TP loadings increased only slightly relative to 1988 levels. This result relates chiefly to the fact that numerous storm water treatment ponds accompanied the new development and re-development that occurred between 1988 and 2005. The results show that these ponds are working to remove significant amounts of total suspended sediment and phosphorus from storm water runoff.

Summary of Loading Assessment Results

Year	Imp. surface (acres)	Imp. %	Runoff Volume (ac-ft)	Annual TSS (tons)	Annual TP (lbs)	Comments
1988	5,723	33.1%	10,145	1,379	9,104	Assuming No Storm Water Treatment
2005	6,563	38.0%	11,409	1,551	10,238	Assuming No Storm Water Treatment
2020	7,464	43.2%	12,925	1,757	11,599	Assuming No Storm Water Treatment
2005	6,563	38.0%	11,409	1,134	9,162	Assuming Storm Water Treatment by Ponds Only - Based on Ponds Created between 1988 and 2005
2020	7,464	43.2%	10,987	1,016	8,717	Runoff volume, TSS, and TP loads are assumed for the new impervious areas. Revised development and redevelopment standards considered.
1988 to 2005 relative changes	+840	+14.7%	+12.4%	-17.7%	0.65%	Increase in Runoff Volume, Reduction in TSS and minor increase in TP loading
2005 to 2020 relative changes	+901	+13.7%	-3.7%	-10.4%	-4.9%	Decrease in Runoff Volume, TSS and TP levels. TP and TSS reductions below 1988 levels and volume below 2005 levels.

Looking into the future, the projected level of development between 2005 and 2020 will continue to add impervious surface and result in additional annual runoff volume. Runoff infiltration is expected to play an increasingly important role in storm water management. The City is currently in the process of adopting new standards for storm water management which will place the focus on infiltration or filtration. The proposed standards will essentially translate into runoff volume control for both new development and redevelopment. The runoff infiltration practices have the potential to offset the increase in runoff volume caused by the expansion of impervious surfaces.

There is significant flexibility within the regulatory structure for regulators and communities alike (Treadway, 2000). With flexibility comes less certainty on cost impacts. The two biggest cost items will tend to be municipal operations/maintenance and capital investments to protect or improve water quality. USEPA has estimated the average annual cost per household for a Phase II implementation program to be $9.16 (Federal Register, December 8, 1999. Volume 64, No. 235, page 68791). Such costs would entail application preparation, record keeping and the reporting requirements for rule implementation. For the City of Burnsville, the total estimated annual Phase II implementation cost would be approximately $216,973 based upon a total number of households of 23,687 (U.S. Census Bureau, Census 2000, Table DP-1. Profile of General Demographic Characteristics: 2000, page 1991).

Total Maximum Daily Load

In October, 2001 the Minnesota Pollution Control Agency (MPCA) issued draft 303(d) list of impaired waters in accordance with the federal Clean Water Act. The following water bodies within Burnsville, were included on the list:

- Lake Alimagnet (19-0021);
- Earley Lake (19-0033);
- Keller Lake (19-0025);
- Crystal Lake (19-0027);
- Sunset Pond (19-0364).; and
- Minnesota River, Carver Creek to the Mississippi River (07020012-201).

Each of the water bodies were listed as having a "swimming" use impairment resulting from excess nutrients (principally, phosphorus). The MPCA is required to investigate the source(s) of nutrient loading both from point and non-point sources and develop a plan to reduce the loading to bring the water bodies into compliance with water-quality standards. This process is called the Total Maximum Daily Load (TMDL) analysis.

Whether the MPCA's Phase II storm water rule and the TMDL analysis for these lakes is tied together as an implementation procedure is unknown at this time (February 2002). However, based upon TMDL implementation elsewhere in the United States, it appears likely that this will transpire.

The MPCA has updated the 303(d) Impaired Waters list every two years, with the most recent draft list published for 2008. The City will take an active role in developing TMDL studies and implementation plans for the phosphorus impairments to these waters. City is currently partnering with the Black Dog WMO to complete studies on Earley, Crystal and Keller Lakes and intends to convert these lake studies into TMDL studies pending approval of the MPCA. The MPCA is leading the efforts to address mercury on a much larger scale. The following water bodies within Burnsville are listed along with the reason(s) for the impairment:

- Lake Alimagnet — Total Phosphorus
- Earley Lake — Total Phosphorus
- Keller Lake — Total Phosphorus
- Crystal Lake — Total Phosphorus; Mercury in fish tissue

In addition to these waters, portions of the City eventually discharge to downstream water bodies that are on the impaired water list including the Vermillion River (fecal coliform bacteria), the Minnesota River and Lake Pepin. As part of the City's NPDES permit program, the City will continue to track activity related to TMDL studies on each of these waters and respond according to the requirements of the permit program.

Regulatory Controls

The City of Burnsville has several codes and ordinances that relate to surface water management. The City's regulatory controls satisfy state and local requirements for water resources management. No new regulatory controls are required to insure plan implementation per Minnesota Statutes 103B and 8410 Rules. However, Table 34 indicates where modification to existing ordinances will help the City better realize the goals of this plan and the current status of each.

A summary of the key steps in the City's permit process for development activities is provided in Appendix F. A checklist for development projects is also included. Hydrologic and hydraulic analysis, design information and requirements are provided in Appendices C and D.

Table 34 - Regulation Status

Ordinance	Specifically Covered by Existing Code /Ordinance No.
Shoreland Mgmt.	Title 10, Chapter 8-10
Flood Plain Mgmt.	Title 10, Chapter 10
Wetland Protection	Title 10 Chapter 8-5, Comprehensive Wetland Protection and Management Plan
Erosion Control	Title 10, Chapter 8, Section 6,7,8
Woodland Protection	Title 10, Chapters 8 and 9
Public Utilities	Title 7 Chapter 2,Section 1
	Title 11 Chapter 5, Section 4
Environmental Protection	Title 10, Chapter 8
Storm Water Management	Title 4 Chapter 4, Section 3
	Title 7 Chapter 2, Section 15
Storm Water Utility	Title 7 Chapter 2 , Section 23
Ground Water (Wellhead) Protection	2001 Outdoor water restrictions
Low Impact Development Techniques and Incentives	Title 11 Chapter 5, Section 3
Non-Phosphorus-Based Fertilizer	Title 3 Chapter 26

Policies and Implementation Plan

The City has developed the policies and implementation activity steps in Tables 35 and 36, respectively, to help meet the regulation goals of this Plan.

Table 35 - Regulatory Policies

Subject: ➢ Regulatory Responsibility
Purpose: ➢ Align regulatory controls with storm water practices to maximize the protection of water resources
Goal: ➢ Maintain regulatory authority at the local level while recognizing the role of other local, state and federal entities and complying with specified programs and requirements.
Regulatory Responsibilities – Policies
Policy 10.1: The City shall develop and implement a storm water management ordinance. ***Policy 10.2:*** The City shall implement ordinances and programs to remain consistent with local, regional and national programs related to storm water management. ***Policy 10.3:*** The City will consider amendments to existing ordinances which present barriers to utilizing Low Impact Development techniques and other creative approaches to on-site storm water treatment.

Table 36 - Regulatory Responsibilities Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Prepare a storm water management ordinance	• Existing codes and ordinances • Similar ordinances • Public Input • City staff	• Completed ordinances	2002	NA
2. Finalize revisions to the shoreland ordinance	• Existing work completed to date	• Completed ordinances	2002	NA
3. Prepare Phase II Stormwater Permit as required by EPA/MPCA and comply with Total Maximum Daily Load (TMDL) requirements	• Rulemaking – MPCA rules • Available monitoring data • Water Resources Management Plan • Phase II permit • Load allocation modeling • Storm drainage system information • GIS	• Rules received • Phase II Permit Application • Develop pollution control plan • Comply with TMDL's	2002 2003 2004	NA $70,000 $25,000
4. Review low impact development techniques for proposed development projects	• Existing codes and ordinances • Water Resources Management Plan • Low Impact Development Techniques	• Revised City code	Ongoing	NA

GOAL 11: FINANCE

M.R. 8410.0110, Subp. 2. Financial impact on local government. Each (WMO) plan shall contain an analysis of the financial impact of implementation of the proposed regulatory controls and programs identified under part 8410.0100. The analysis shall include, at a minimum, an estimate of the costs associated with the (WMO) plan's implementation and anticipated sources of revenue.

Goal: Establish funding sources to finance water resources management activities.

Paying for water management projects has become more complex in recent years. In the past, special assessments against benefited properties financed most of the necessary improvements. However, the financial options have broadened considerably. The question is, which method(s) best suit the needs of the City.

The major categories of funding sources are (1) Ad Valorem Taxes; (2) Special Assessments; (3) System Development Charges (Building Permits, Land Development Fees); (4) User charges; and (5) Grants. Following is a description and financing principles used with each of these financing mechanisms.

Table 37 illustrates the advantages and disadvantages of the different financing methods.

Ad Valorem Tax

General Taxes

General taxation is the most common revenue source used to finance government services including minor maintenance measures for drainage and water quality facilities. Using property tax has the effect of spreading the cost over the entire tax base of a community.

Special Tax District

The tax district is similar to the administrative structure under general taxation except that all or part of the community may be placed in the tax district. The principle is to better correlate improvement costs to benefited or contributing properties.

Lake Improvement Districts (Knutson, 2001)

Lake improvement districts, provide a method to address lake problems and concerns at a local level that may not be addressed by other governmental bodies. A Lake improvement districts is a local unit of government that provides the opportunity of greater landowner involvement in lake management activities. Lake improvement districts may construct, own and or operate water control structures, conduct planning studies and receive federal and state financing. Lake improvement districts may be initiated by a petition to the County Board. The petition must be signed by 26 percent of the property owners within the lake improvement districts. The County Board may also initiate a lake improvement district.

Table 37 - Advantages and Disadvantages of Different Funding Alternatives

Funding Method	Advantages	Disadvantages
Ad Valorem Tax	1. Administrative structure for collection in place. 2. Simple and accepted source of revenue. 3. Allows for a larger revenue base. 4. Through tax districts contributors pay.	1. No incentive to reduce runoff or pollution. 2. No relationship to level of benefits received. 3. Discontinuous source of revenue. 4. Limitations on amount of expenditures due to budget constraints. 5. Competition with other City services (i.e., police, fire).
Special Assessments	1. Only benefited properties pay. 2. Revenues from assessment are applied to a specific project cost. No competition with general services. 3. Benefits directly related to cost for service. 4. Assessment can be deferred in hardship cases.	1. Rigid procedural requirements. 2. Runoff contributions cannot be assessed. 3. Difficult to determine and prove benefit. 4. May place an unfair burden on some segments of the population.
System Development Charges	1. New development generating runoff pays for runoff management. 2. Administrative structure for reviewing plans and collecting fees is in place. 3. Systems can be tailored to the specific needs through regulatory changes. 4. Revenues are applied to water management. No competition with general services.	1. Only addresses problems within the vicinity of the new development, not usually in existing developments. 2. Only address prevention not correction of major problems. 3. Limited usefulness as a financing mechanism.
User Charges or Storm Water Utility (already in-place in Burnsville)	1. Properties causing or contributing to the need for runoff management pay relative to their contribution to the problem. 2. Self-financing system not in competition with general services funds. 3. Existing and new developments both pay. 4. Flexibility in the system. 5. Continuous source of revenues. 6. Specific dedicated fund. 7. Administrative structure for collection already in place.	1. Some initial costs in development of rate formula and philosophy. 2. May require an expanded administrative structure.
Grants	1. Reduce cost burden to residents in the community.	1. Undependable source of revenue. 2. Increase administrative costs for securing and managing the funds. 3. Most often grants require cost sharing and thus additional funding source. This results in double administrative costs due to several funding sources. 4. Limited availability on an irregular schedule. 5. Requires considerable lead-time from application to receiving funds.

To finance lake improvement districts projects, the County Board may use assessments, against benefited properties, service charges, general obligation bonds or ad valorem tax on property in the lake improvement districts in any combination.

There are 14 lake improvement districts in Minnesota as of February 2001.

Special Assessments

Municipalities are familiar with the use of special assessments to finance special services from maintenance to construction of capital improvements. The assessments are levied against properties benefiting from the special services. The philosophy of this method is that the benefited properties pay in relation to benefits received. The benefit is the increase in the market value of the properties.

System Development Charge

Trunk charges or System Development Charges (SDCs) are one-time charges paid by new development to finance the construction of public facilities. SDCs are generally used for four basic reasons.

1. To shift the burdens from existing development to new development;
2. To synchronize the construction of new or expanded facility capacity with the arrival of new development;
3. To subject new development decisions to pricing discipline; and
4. To respond to anti-tax sentiments.

There are seven factors to determine the proportionate share of costs to be borne by new development:

1. The cost of existing facilities;
2. The means by which existing facilities have been financed;
3. The extent to which new development has already contributed to the cost of providing excess capacity;
4. The extent to which existing development will, in the future, contribute to the cost of providing existing facilities used community-wide or by non-occupants of new development;
5. The extent to which new development should receive credit for providing, at its cost, facilities the community has provided in the past without charge to other development in the service area;
6. Extraordinary cost incurred in serving new development; and
7. The time-price differential inherent in fair comparisons of amounts of money paid at different times.

To adequately address the issue of Storm Drainage Trunk Charge for New Development or SDCs, a comprehensive review of the existing water resources management plan would be conducted. Next, a capital improvements plan (CIP) would be refined. Work with legal counsel would be undertaken to establish the legal basis for SDCs. Finally, the SDC determination will be developed based on development needs, land use and total systems cost. Lastly, a public information element will be used to introduce the system to the community. The public information element will illustrate the approach as equitable and will dispel any myths our criticisms that may exist.

User Charges or Storm Water Utilities

User charges, which support storm water utilities, are a mechanism by which a City can generate funds through billings similar to water and sewer billings. The principle is to charge for services rendered to properties generating runoff, as well as the service to properties being protected from the effects of runoff, without consideration to an increase in market value of the property.

The City's storm water utility generated approximately $1.77 million in 1999. Eight different land use classifications are used to calculate specific rates. There is strong consensus that the new costs should be apportioned based on overall property contributions to runoff and pollutant loading. This is the current philosophy behind the City's storm water utility.

Infrastructure Trust Fund

A unique aspect of Burnsville's system of financing infrastructure improvements is the Infrastructure Trust Fund (ITF). The ITF, which was created by ordinance in 1996, essentially charged depreciation to existing taxpayers who are utilizing the benefits of the existing systems such as streets and parks, as well as drainage system infrastructure, instead of leaving the replacement costs to the next generation. The City Council appropriates money to the ITF from a tax levy fund or other available source, with a limit on the amount committed to the fund annually. Several project-specific spending limitations also apply to money in the ITF. The fund is intended to provide the basic funding for future infrastructure replacement costs.

Grants

Grants are available for surface water management and nonpoint source pollution. However, it is generally not a good financial practice to rely on grants for a service program. This source of revenue is not dependable and requires constant speculation as to its availability. Grants are useful but should only be used to supplement a planned local revenue source. Examples of some available granting agencies and past grant programs are shown in Table 38.

Table 38 - Example Grant Programs

Granting Agency	Grant Program
Environmental Protection Agency	604b Urban Water Quality Grant
	Underground Injection Control Program
	Environmental Education Grant
	Clean Lakes Grant
	Section 319 – Clean Water Act
U.S. Army Corps of Engineers	Section 22 Planning Assistance to States
U.S. Fish and Wildlife Service	Wallop-Breaux Funds
	Federal Aid in Wildlife Restoration Act
	Sport Fish Restoration Act
Minnesota Department of Natural Resources (1999)	Flood Hazard Mitigation Program
	Conservation Partners Grant (habitat)
	Metro Greenways Planning Grant
	Outdoor Recreation Grant Program
	Dam Safety Grant Program
	Water Recreation Cooperative Acquisition and Development Program
	Fishing Pier Grant Program
	Natural and Scenic Area Grant Program
Metropolitan Council	Water Quality Initiative Grant
	MetroEnvironment Partnership Grant
	Livable Communities Fund
Minnesota Pollution Control Agency	State Revolving Loan Fund
	Clean Water partnership
	Clean Water Legacy Act
Lower Minnesota River Watershed District	
Black Dog Watershed Management Commission	
Legislative Commission on Minnesota Resources	

Policies and Implementation Plan

The City has developed policies and implementation activity steps to achieve the finance related goals of this Plan, as shown in Tables 39 and 40, respectively.

Table 39 - Finance Policies

Subject: ➢ Paying for Water Resources Management	
Purpose: ➢ To adequately finance management activities in an equitable manner.	
Goal: ➢ Establish funding sources to finance water resources management activities	
Finance Policies	
Policy 11.1:	The City shall identify and implement available funding sources for water resources management.
Policy 11.2:	The City will actively pursue grants, donations, and in-kind contributions to help fund water resources management.
Policy 11.3:	The City shall assist citizens and businesses in their efforts to improve water quality, decrease water quantity and/or upgrade wetlands.
Policy 11.4:	The City shall encourage the WMOs to finance inter-community issues and projects.
Policy 11.5:	The City shall support the establishment of Lake Improvement Districts formed by petition in cases where inter-community funding is necessary and WMO funding is not available.
Policy 11.6:	Project cost allocation shall be determined on a project by project basis and may consider contributing area, tax value, percent of runoff, total pollutant loading or other units of measure as a basis for determining cost splits.
Policy 11.7:	Private development will generally be responsible for funding all on-site facilities design for on-site runoff and/or pollutant loading, and may contribute for construction, expansion and/or maintenance of off-site conveyance or ponding systems.

Table 40 - Finance Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Budget
1. Prepare study comparing planned expenditures to available financing and implement financing strategies of water resource management activities	• Implementation Plan (this report) • Current City budget process and assessment policy • Availability of funding sources • Bench-marking with other communities • City staff • Finance study • Public Involvement Plan	• Completed study • Identification of specific financing strategy • Annual Budgeting and plan implementation • 5-Year CIP	2002 Annual	NA NA
2. React to requests for the formation of Lake Improvement Districts with Lake Associations	• City Attorney • Dakota County • Lake Associations	• Formation of Lake Improvement Districts	Ongoing	NA
3. Explore options to provide financial incentives for commercial/industrial property owners using good storm water practices.	• City Staff • Lower MN WD • Black Dog WMO • Grants	• Established program • Implement program	2003 Ongoing	NA NA

GOAL 12: LAND USE MANAGEMENT

M.R.8410.0100, Subp. 2. If a (WMO) plan notes the existence of certain land uses that could adversely affect the organization's ability to achieve its water quality goals, and these uses cannot be properly managed or regulated with existing controls, the uses constitute a public nuisance according to Minnesota Statues, section 609.74. In those cases, the (WMO) plan must provide for the adoption of local controls to define and abate the nuisances. For the purpose of this chapter, public nuisances may include any action, failure to act, or land use practice that would impair water quality if allowed to continue.

Goal: Recognize the relationship between land use and water resources management.

Sustainable Development

One of the recent trends in planning for future growth is the concept of sustainable development. Sustainable development involves communities finding ways to meet their residents' needs for such things as good jobs, schools and housing without wasting or degrading the natural resources upon which future prosperity depends (Minnesota Planning, 1995). Although "growth" and "development" are often used interchangeably, they imply very different things for a community. "Growth" suggests bigger while "development" can mean getting better or achieving potential. By following the path towards sustainable development, communities can:

- Save money on infrastructure costs, such as roads, sewers, schools and police and fire protection, by avoiding duplication and anticipating future needs.
- Help ensure that the public costs of supporting new growth do not outweigh the benefits.
- Preserve natural assets and minimize pollution by giving community residents a way to clearly describe what kind of development they want, and where.
- Spur environmentally sustainable economic development by providing current and prospective businesses with information about areas' future.

To be truly sustainable over the long term, the development activity must include, but not be limited to, the following:

- Use the land - a finite resource that has no substitute - in ways that meet peoples diverse needs, conserve financial and natural resources, and preserve the land's ability to meet future needs.
- Create no more pollution and waste than the environment can recycle or render harmless.
- Include recreational and drinking water quality.

Land Development Density

Only a small percentage of Burnsville remains to be developed. Smaller lot sizes and increased coverage run counter to what would normally be recommended on a watershed management basis. For areas tributary to trout streams as identified in the Black Dog Watershed Management Plan (Barr, 2000) any time the level of impervious cover exceeds the 12-15% level, the resource will be permanently degraded (Galli, 1991).

The shoreland zoning standard established by the Minnesota Department of Natural Resources limits impervious cover to 25 percent. However, outside the shoreland zone, much higher levels of cover are allowed via existing zoning. Even if less than 10 percent of the City remains to be developed, long-term water resource impact of redevelopment as well as current and near term development are concerns. There is a value based decision that must be made, based on the cost to develop in Burnsville, the cost of affordable housing and the cost of having to retrofit treatment facilities into the urban landscape to treat higher density produced runoff.

Ordinance Revision

Based on discussion with City staff, the over riding philosophy behind the Water Resources Management Plan should be one of development/retrofit/treat versus limiting land cover to reduce pollutant loading. However, there are several methods to help the City achieve the balance between development and the environment.

Low Impact Development Practices

Low Impact Development concepts include narrower streets, reduced parking and vertical construction, all geared towards reducing the overall impervious cover of the watershed unit, as well as volume and rate control practices to mimic pre-development hydrology.

Narrower Streets

The City currently has a standard for low volume residential streets. The intent of the standard is to provide a street as narrow as possible and still provide traffic and pedestrian safety. Use of alternative street widths should be considered in areas of sensitive environments or where there are existing runoff quantity and/or quality issues. Maintenance, parking and safety issues of narrower streets must be considered.

Parking Requirements

Peter Kratz, in his August 27, 1996, presentation to the APWA National Conference in Washington D.C. identified that typical city standards require too much parking, representing a financial cost, security problems and environmental problems (i.e., changes in water quality). Some sources include Off-Street Parking Requirements: A National Review of Standards (David Bergman, 1991) and Flexible Parking Requirements (Thomas P. Smith, 1983) through the American Planning Association.

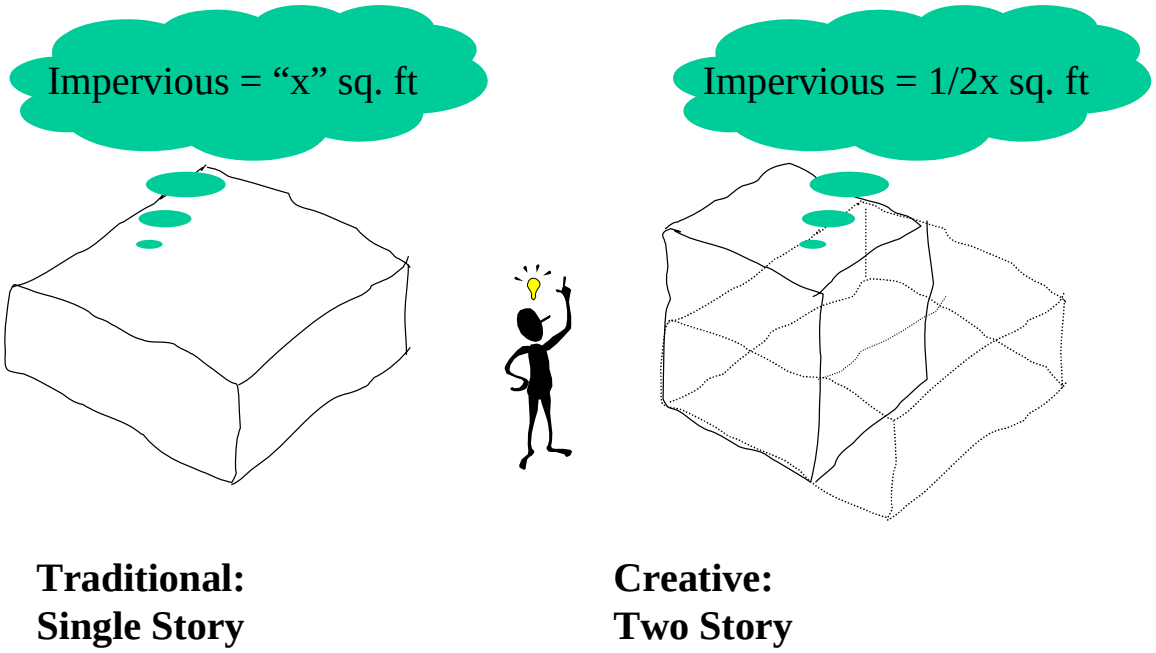
Encouraging the 45 degree parking space layouts will reduce percent impervious by eliminating one driving lane. Opening up the ordinance for porous pavement options where practical will also help. Additionally, future ordinances could consider establishing parking area maximum levels rather minimum levels as they are currently listed. Encouraging joint parking facilities and promoting parking ramps that could include access for public transportation to large employee facilities could also be considered.

Parking costs must be a consideration. A traditional parking stall costs about $1,500 per space (2002 dollars). Covered parking (open, but under a building) can run up to $5,700 per space (2002 dollars). Fully enclosed parking ramp costs can run as high as $9,000 per space (2002 dollars). The economic cost must be weighed against the environmental benefit. These figures are based on reported costs in 1995 dollars adjusted for inflation of 3 percent annually.

Vertical Construction

In commercial and industrial zoning districts, establishing a minimum height of two stories will limit the office-show room/one-story style commercial and industrial development already prevalent in Burnsville. A move towards vertical construction, as illustrated in Figure 21, reduces infrastructure, the land area relative to the usable space, roofing and exterior building surfaces and increases green space while achieving planned densities. Vertical construction does increase the building footing design, vertical circulation within the site and parking densities and costs. The alternative is towards more green space and away from connected impervious surfaces.

Figure 21 - Vertical Construction



Policies and Implementation

The City has developed policies and implementation activity steps to help meet the land use goals of this plan. These policies and activities are presented in Tables 41 and 42, respectively.

Table 41 - Land Use Policies

Subject: ➢ Land Use Management
Purpose: ➢ Revise ordinances and policies to promote sustainable growth.
Goal: ➢ Recognize the relationship between land use and water resources management
Land Use Policies
Policy 12.1: The City shall promote the use of Low Impact Development practices to replicate pre-development hydrology. ***Policy 12.2*:** The City will consider narrower street design, on a case by case basis, to increase green/open space and minimize impervious surface, in accordance with established City standards. ***Policy 12.3:*** Burnsville will encourage proof of parking and endorses shared-parking and green "show storage" areas to minimize impervious surfaces. ***Policy 12.4:*** On-site ponding and regional pond requirements will be reduced in proportion to reduction in runoff rates and/or volumes due to the use of Low Impact Development practices.

Table 42 - Land Use Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Develop a disconnected impervious policy which reduces the amount of impervious surface that can directly run off to the drainage system	• Current structural coverage • Industry standards for pollutant loading relative to connected impervious • Planning Staff • Public Works Staff	• Completed policy • Publicity-education campaign • Included in ordinance	2003 2004	NA NA
2. Modify existing zoning to move impervious cover requirements to a separate development density standards section	• Existing Zoning • Regulatory Responsibilities Strategy • Planning Staff • Public Works Staff	• Modified Zoning Ordinance	2003	NA
3. Develop parking standards, variances and incentives that may encourage overall less area for parking	• Planning Staff • Public Works Staff • Available ordinances and standard references • Developer Input	• Documented Standards	2005	NA

WATERSHED ASSESSMENT

Most of Burnsville lies within the larger Minnesota River Basin in east central Minnesota. The Minnesota River Basin includes several smaller watershed units including the Lower Minnesota and Black Dog (including the old Credit River watershed). About 6 percent of Burnsville is within the Vermillion River watershed, which is part of the Mississippi River basin. The extent and boundaries of these watersheds are illustrated in Figure 22.

The Vermillion River Watershed dominates Dakota County. The watershed stretches from Elko/New Market in the southwest to Lake Alimagnet in Burnsville in the northwest to Hastings in the east before discharging to the Mississippi River upstream of Red Wing.

The Black Dog Watershed covers parts of Burnsville, Lakeville, Apple Valley, Eagan and Savage. It includes the old Credit River watershed that covers southwest Burnsville. About 67 percent of Burnsville is within the Black Dog Watershed, comprising about 72 percent of the total watershed area. One of the primary goals of the watershed management organization (WMO) is to maintain or improve quality in the key ("strategic") water bodies in the watershed. Four lakes have been identified as strategic water bodies by the Black Dog WMO: Crystal Lake; Keller Lake; Lac Lavon; and Sunset Pond. The WMO will monitor these waterbodies, but leave direct management in the hands of the City. None the less, Burnsville's water quality goals for these waterbodies must meet or exceed the reasonably attainable water quality goals established by the Black Dog WMO. The WMO will also facilitate solutions to inter-community problems.

The remaining 27 percent of Burnsville lies within the Lower Minnesota River Watershed District (LMRWD). The LMRWD stretches along the Minnesota River valley from St. Paul to Chaska, mirroring the river both north and south. Significant resources that lie within both Burnsville and the Lower Minnesota River Watershed District include the Minnesota Valley National Wildlife Refuge, and Black Dog Lake.

METHOD OF ANALYSIS

The watershed approach to completing this plan extends beyond the activities of preparing this document. The analysis included incorporation of existing studies, plans and models to develop a comprehensive watershed approach.

Examples of previous work that was utilized in plan development include:

- 1994 Comprehensive Storm Water Management Plan
- 1998 Comprehensive Wetland Protection and Management Plan
- 1999 Natural Resources Management Plan
- 1999 Comprehensive (Land Use) Plan
- Black Dog WMO Watershed Plan (2002)
- Lower Minnesota River Watershed Plan (1999)
- Vermillion River Watershed Plan (draft 1999)

Pond and Wetland Inventory

A detailed inventory was completed as part of the 2008 update to Comprehensive Wetland Protection and Management Plan.

Table 43 summarizes the number of basins and total acres for the four management classes of Burnsville's wetlands.

Table 43 - Wetland Classification Summary

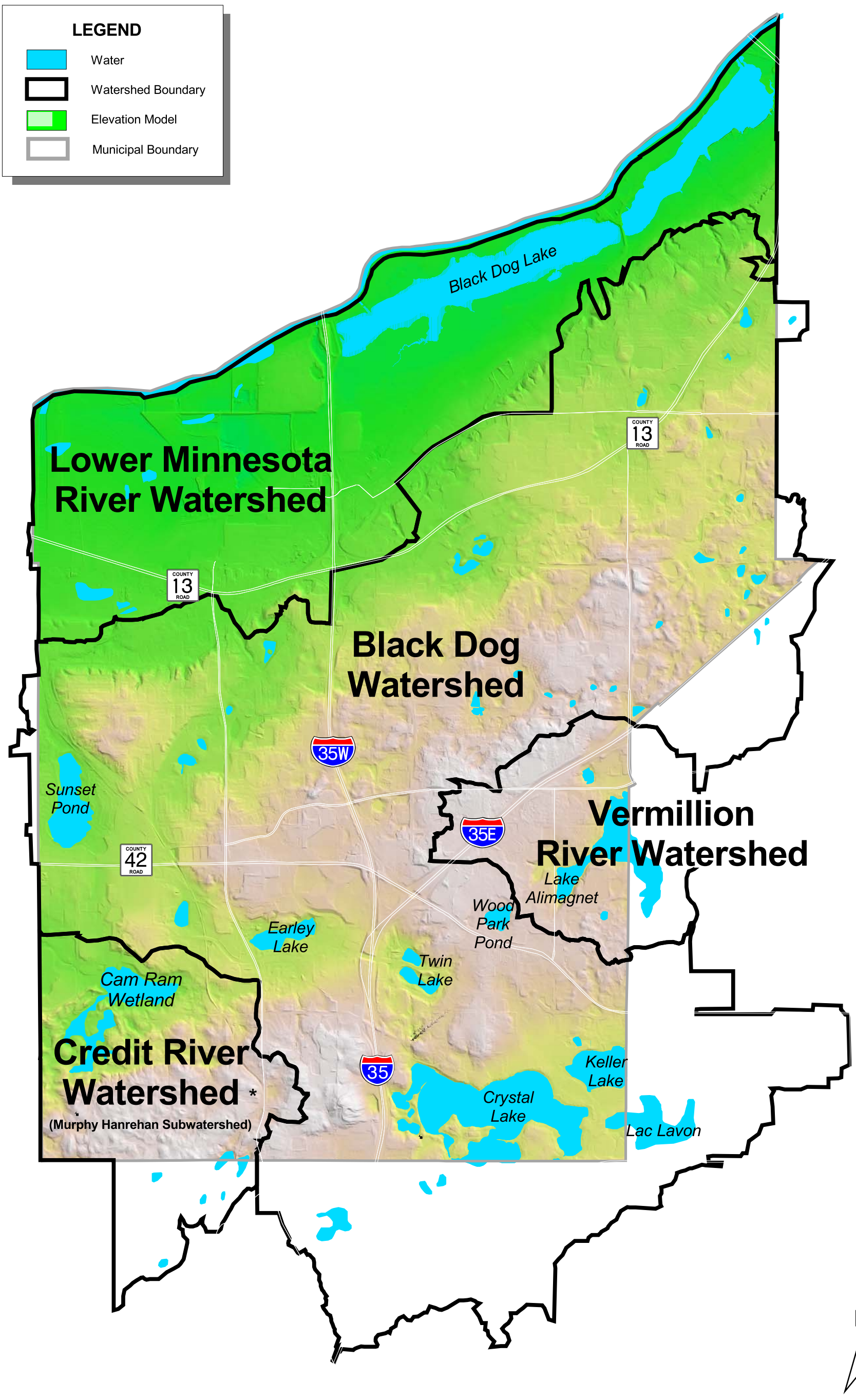
Management Class	Percent of Basins in this Category	Total Acres
Protection	77	1,375
Improvement	12	217
Management	9	171
Management II	2	31
Total	100	1,794

Source: City Wetland Inventory (2008)

Map Revisions

One of the desired outcomes of the planning process was to have an updated map of the City's drainage system. The existing GIS includes 2-foot contour maps, parcel data and structure footprint. In addition, line work representing the in-place storm sewer system is also available.

To complement the existing information, the mapping produced as part of the 1994 plan was reviewed and revised. The nature of the revisions involved integrating recent detailed studies and comparing existing subwatershed boundaries to the in-place pipe system. The result is an accurate, over-all system map and associated GIS coverage for subwatershed and catchment.



* Under the Jurisdiction of Black Dog WMO

1" = 3500'

SEH	9/20/02 burns.apr naf	BURNSVILLE WATERSHEDS	FILE NO. ABURNS9904.00 FIG NO. 22	

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Water Body Classification System

Considerable effort has been made towards updating the City's wetland classification system. Extensive efforts have also been made at the watershed level. As a result, specific lake goals have been established for all major lakes within the City. The City's classification system shown in Table 44 was taken from and is consistent with the Comprehensive Wetland Protection and Management Plan (2008). The City considered several classification systems in the original Plan development process in 2000 to 2002, including one very similar to the Black Dog WMO system described later in this Plan. As part of this update, the City no longer will have a separate classification system for City Lakes. Instead, the City will adopt the respective watershed's classification for the lakes.

Table 44 - Burnsville Wetland Classification System

Classification	Description
Protection	Basins with Native Grades of A or B, sites with complete Community Structure, any sites supporting rare species, and any sites within or adjacent to significant natural communities as identified by the Dakota County Biological Survey. This is comparable to the Preserve Classification used in the MnRAM.
Improvement	Basins with 3 of 4 of the Community Structure criteria, sites greater than ten acres in size, Minnesota Department of Natural Resources Protected Waters and Wetlands (Public Waters), and basins within existing City parks that are not classified as Protection Areas. Although there is some overlap, this classification is similar to the Manage I and Manage II MnRAM classifications.
Management	Remaining wetlands, but generally of low quality and located outside of protected areas. Management wetlands are also likely to receive untreated storm water runoff, but have not been altered to enhance treatment capabilities. This classification is comparable to the Manage II and Manage III MnRAM classifications.
Management II	These basins include any of the water features that may have been historic wetlands, and would remain subject to the requirement of the Wetland Conservation Act. These basins will have minimal protection standards as they currently function primarily to provide storm water management.

Problem Identification Process

The planning process began with City staff identifying existing problems as well as expectations for the Water Resources Management Plan, including:

- Access for maintenance, identified on as-built drawings
- Identification of high water levels
- Accurate watershed map
- Terrace Oaks flooding
- Goals for urban stormwater management
- Standard for nuisance flooding
- Techniques for improving water quality
- Capacity of existing systems
- Frequency of maintenance activities
- Low Impact Development techniques
- Incompatibility between similar plans

Land Use Driven Analysis

A relationship exists between land use practices and runoff impacts. The relationship is a function of both impervious cover and the extent and distribution of ponds and wetlands, as well as their *treatment capacity* and *treatment potential*. With a watershed impact/response relationship in place, the City can develop regulatory controls for allowable land use practices and require mitigation for sub-standard development. Currently the City deals with development standard issues primarily through the green space requirement and the Shoreland Ordinance.

Wetland Utilization

The *treatment potential* in Burnsville is great within over 300 ponds and wetlands. However, the *treatment capacity* is not documented; in most cases only pond/wetland surface area data exists. No pond depth information is available. Additionally, the 1998 Wetland Inventory (SEH) brought the recognition that the City should not exploit the water quality *treatment potential* of all of its wetlands to improve the quality of the lakes and creeks, even if a particular wetland is providing treatment of runoff today. In fact, protection of the highest quality wetlands is warranted.

Utilizing wetlands as a key component to water quality improvements within the context of *treatment capacity* and *treatment potential*, raises several important value-based questions:

- Which are our most important resources?
- To what degree should they be protected, restored or maintained?
- How should the existing system be relied upon?

- What other measures should be taken?
- What are the tools necessary to maximize treatment potential?
- What additional treatment is necessary to achieve the plan goals?

Treatment potential begins to answer at least some of the questions above. *Treatment potential* represents the "best case scenario" for treatment based on the existing landscape and the City wetland classification. Treatment potential excludes wetlands classified as protection and those wetlands associated with high priority natural areas from consideration as water quality treatment facilities, even if they exhibit high or exceptional water quality attributes. Next, based on the area of the remaining ponds and wetlands, *treatment potential* is estimated by assuming that a volume of dead storage sufficient to achieve the level of pollutant removal achieved in the NURP study could be provided, regardless of whether or not it exists today. The treatment potential varies by wetland classification.

Water Quality Modeling Defines Level of Treatment

A methodology based on National Urban Runoff Program (NURP) and the P8 Urban Catchment Model Version 1.1 (IEP, 1990) defines the appropriate level of treatment for urban storm water. Using this approach, a recommended minimum pollutant removal efficiency for urban storm water treatment is determined. Based on this standard, the existing treatment capacity and treatment potential of each subwatershed can be estimated.

The P8 model was used to develop a relationship between pollutant loading based on the impervious fraction and the wet-pond surface area requirements, assuming optimum dead storage condition to approach pollutant removal efficiencies consistent with the results of the National Urban Runoff Program (NURP) study. The impervious fraction for each land use type used in the analysis is shown in Table 45.

Table 45 - P8 Inputs by Land Use Type

Land Use Type	Impervious Fraction
Agriculture	2%
Apartment/townhome	65%
Commercial	85%
Farm	5%
Industrial	72%
Multi-family	65%
Park	10%
Residential	30%
Right of Way	50%
Railroad	85%
Vacant/undeveloped	0
Mobile Home	38%

Analysis of required pond size, expressed in terms of the impervious percentage of the contributing watershed, yields a relationship of pond area to impervious contributing area. The relationship is based on an 85 percent total suspended solids removal, and standard design-mode parameter of the P8 model.

An 85 percent total suspended solids (TSS) removal value was used in the analysis versus the 90 percent level achieved in the NURP study, recognizing that there may not be adequate detention time in many wetlands to achieve 90 percent removal as discussed by EPA (1983). Additionally, depending on the quality of the wetland, extended detention on a frequent basis, which would be the case for effective water quality treatment, may be detrimental to diverse vegetation and sensitive habitats.

MPCA's document Protecting Water Quality in Urban Areas (March 2000) presents a relationship between removal efficiencies and detention time. Table 46 illustrates the relationship. Although constructed storm water ponds may have appropriate detention time, they represent only a fraction of the City's treatment potential. From Table 46, it can be observed that, although the TSS removal goal of 90 percent can be met with detention times less than two days, the total phosphorus (TP) removal level of 65 percent requires detention times that begin to approach three days.

The City's drainage system relies heavily on wetlands for water quality treatment. Extended water level fluctuations and detention time can have a detrimental impact on wetland vegetation. A detention time of 36 hours was chosen, corresponding to an 85 percent TSS removal. The 36-hour detention time was chosen as a period short enough to minimize negative vegetative/habitat impacts. See Recreation, Fish and Wildlife Goal in the Goals and Policies section for additional discussion regarding water level fluctuations and habitat impacts. The results of the P8 analysis are illustrated in Figures 23 and 24.

Table 46 - Pollutant Removal Versus Detention Time

(MPCA, 1989)

	Detention Time (hours)				
Parameter	24	36	41	48	> 48
Total Suspended Solids	78%	85%	90%[1]	93%	> 93%
Total Phosphorus	50%	56%	57%	58%	65%[1]

1 Meets levels reported/achieved in NURP study of 90% TSS or 65% TP.

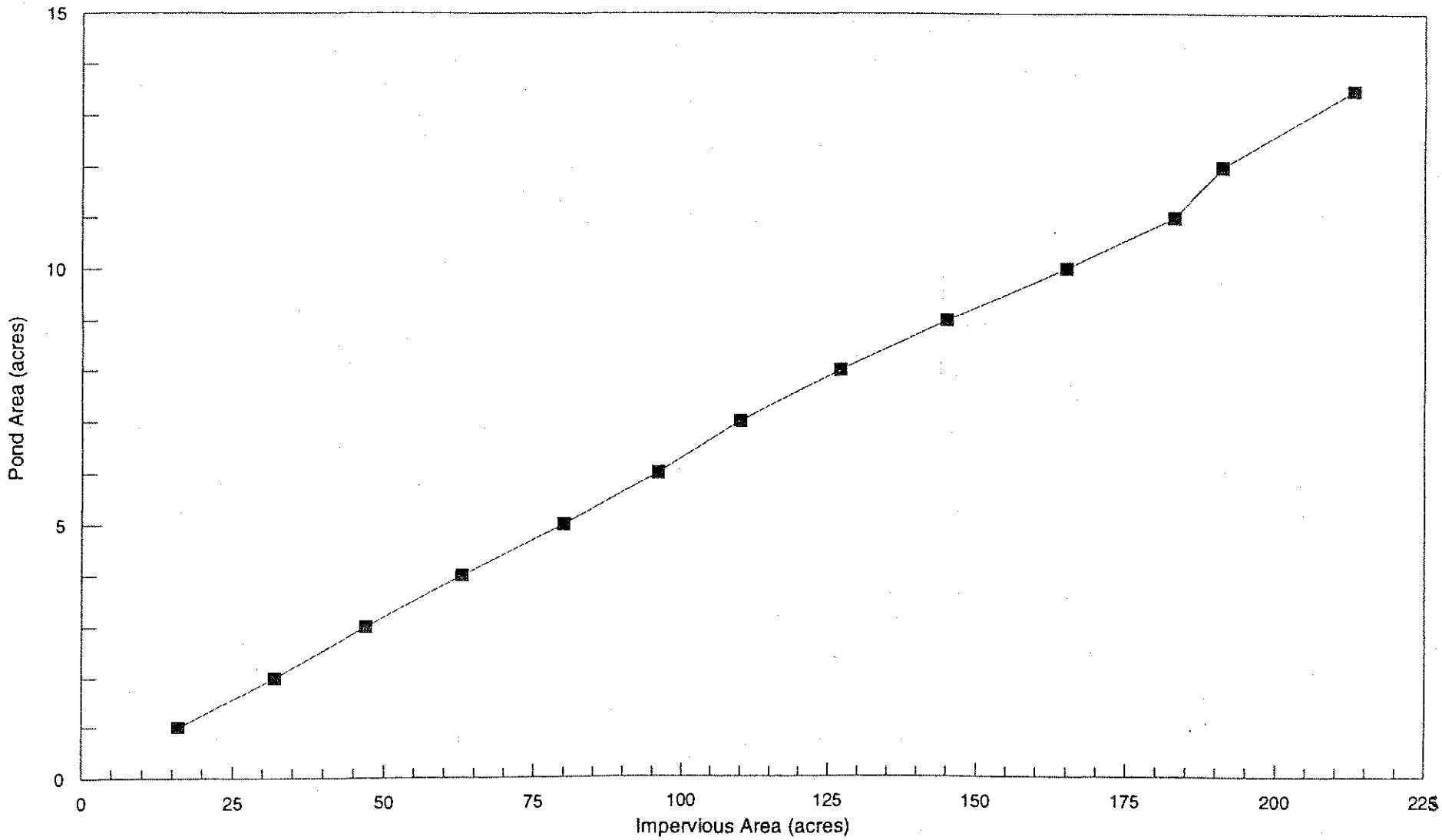
The following relationships were developed from Figures 23 and 24, to assess the treatment potential and the required treatment for each subwatershed. Analysis of required pond size expressed in terms of the impervious percentage of the contributing watershed yields the relationship of 1 acre of treatment pond is necessary for every 15.8 acres of impervious contributing area (or a ratio of 0.063). The relationship is based on an 85 percent TSS, and standard design-mode parameter of the P8 model (IEP). Based on this relationship, the following equations can be

developed, where I is Percent Impervious expressed in decimal form (i.e., for 10 percent impervious, use I = 0.10).

EQ 1. Required Treatment Pond Size (Acre) = 0.063 x Acres of Impervious Surface
EQ 2. Total Suspended Solids (TSS) Loading (Lbs/Acre) = 613.79 x I
EQ 3. Total Phosphorus (TP) Loading (Lbs/Acre) = 0.186 x I

Note: The resulting relationships are not intended to be used as a detailed design tool – instead they are intended to make a comparative analysis of the treatment capacity and treatment potential within individual subwatersheds.

FIGURE 23 Treatment Pond Area versus Impervious Area
(Based on P8 Model and 85 percent TSS Removal)



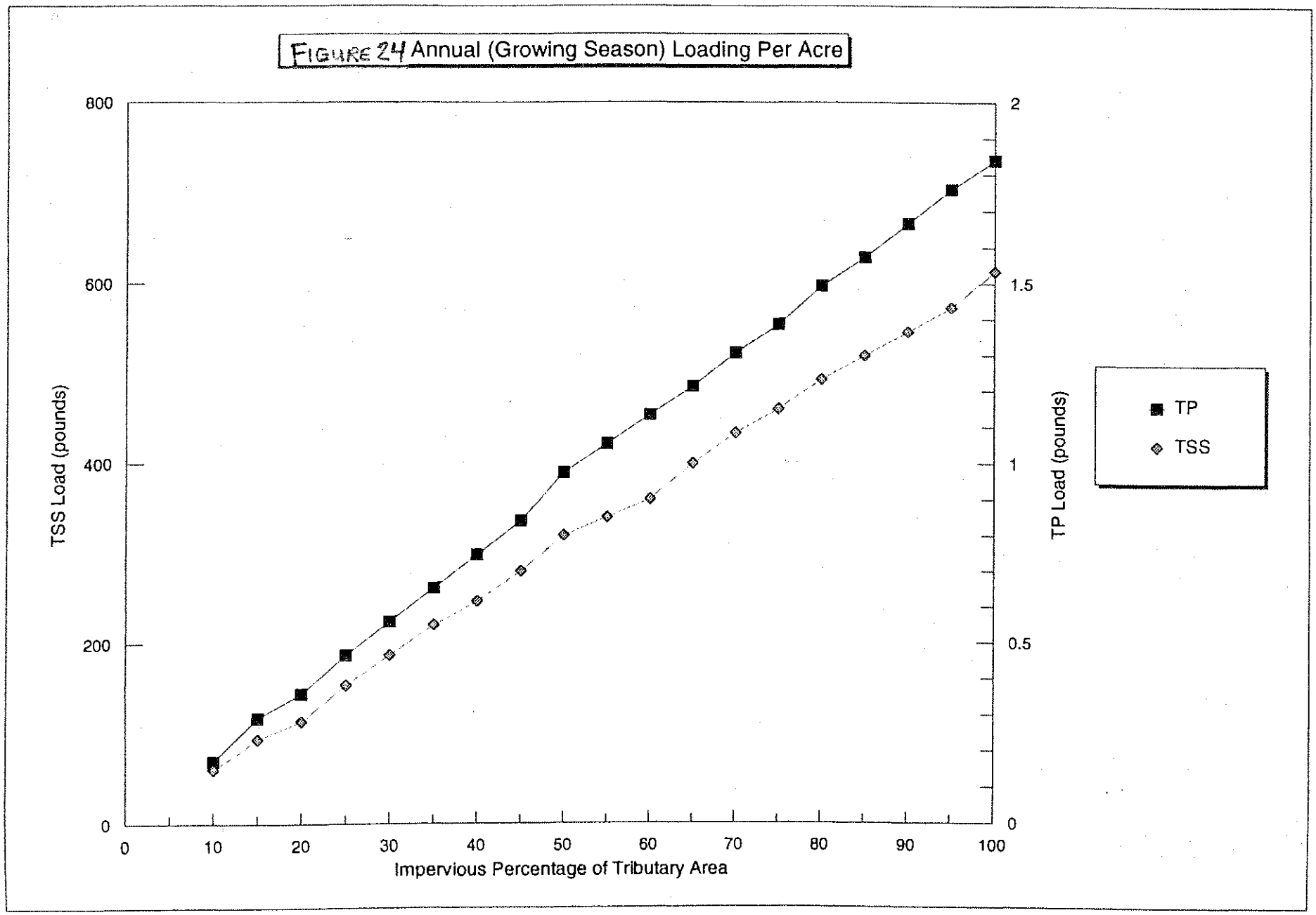


FIGURE 24 Annual (Growing Season) Loading Per Acre
TSS Load (pounds)
800
600
400
200
0
TP Load (pounds)
2
1.5
1
0.5
0
0
10
20
30
40
50
60
70
80
90
100
Impervious Percentage of Tributary Area
TP
TSS

Prioritizing Future Watershed Management Activities

The foregoing discussion centers on a planning-level water quality analysis that determines excess or deficient treatment potential for each identified subwatershed. With subwatershed analysis complete, a method for prioritizing subwatersheds is required to develop the implementation plan. One example of a prioritization methodology for addressing future ponding needs is based on three factors:

1. The rank of the receiving water;
2. The degree of anticipated land use change in terms of change in impervious percentage; and
3. The current treatment deficiency.

Table 47 summarizes the three factors and their corresponding values.

Table 47 - Prioritization Factors

Receiving Lake Ranking	**Value**
Protection (High Priority)	High
Improvement (Medium Priority)	Medium
Management (Low Priority)	Low
Degree of Anticipated Land Use Change	**Value**
High	High
Moderate	Medium
Minimal	Low
Current Treatment Deficiency	**Value**
Current Treatment Area < 50% of Required	High
Current Treatment Area > 50% and < 90% of Required	Medium
Current Treatment Area > 90% of Required	Low

In the watershed/subwatershed descriptions in subsequent sections of this Plan, this methodology was used to help determine the priorities for each of the three categories in Table 48. Combining the subwatershed analysis in the Implementation Section of the Plan provides a tool for deciding where improvements should be made on a prioritized basis. The implementation plan includes a means for combining the three factors to establish a single priority system.

Table 48 - Priority Categories

Subwatershed Priority	Values (from Table 47)
High	Minimum of one High and no Lows or High in both receiving water ranking and treatment deficiency
Medium	Neither High nor Low
Low	No Highs and two or more Lows

Hydrologic Model Update

The 1994 Comprehensive Storm Water Management Plan (OSM) included the development of a City wide flood-routing model using the HydroCAD™ model. The 1994 model was based a 1% chance (commonly referred to as the 100-year) event, assuming 5.9 inches of rain over a 24 hour period and an SCS/NRCS Type II storm distribution. The 1994 plan Policy 2 (page IV-2) indicates that a 6-inch rainfall over 24 hours is the 1% chance event in Burnsville. Therefore the overall model was updated using a 6 inch rainfall event. The model was also completed for the 4.2 inch (10-year, 24-hour) rainfall event. Recent modeling for FIRM map updates to various water bodies has been completed since 2002 using various models including XP-SWMM and HEC-RAS. These data are included in Appendix D.

In addition to adjusting the rainfall depth, the model was generally reviewed for inconsistencies that had risen since its initial development. In particular, the runoff curve numbers (CN), which are based on land use and soil conditions, were reviewed and modified as necessary. Information relating to lake and pond outlet conditions were also reviewed to ensure that the model reflects the asbuilt condition of the drainage system. Finally, recent modeling in the City of Lakeville was added to the Burnsville/Crystal Lake watershed to more accurately portray actual conditions.

A summary of the hydrologic modeling results for the 100-year storm event is provided in Appendix D. The information is presented in tabular format and includes data for most of Burnsville's subwatersheds. In general, the information should be considered approximate and should not be used for detailed, site-specific analysis for new development or redevelopment projects. Information for the specific water bodies in Burnsville that have designated flood elevations is also listed. Subwatershed identification numbers in the table correspond with the areas identified in Figure D-1 (Fold out map in Appendix D). Both new and old identification numbers are provided since the drainage are numbering system was updated as part of this 2008 Plan update.

VERMILLION RIVER WATERSHED

The Vermillion River drains 335 square miles in central Dakota County, including the urbanized east central part of Burnsville, to the Mississippi River at Red Wing. The Burnsville portion of the watershed is identified as being part of Planning Unit 1 in the draft Vermillion River Watershed Plan (August 1999). Runoff from this area contributes to North Creek, a tributary stream to the Vermillion River and the major lake in this watershed is Lake Alimagnet. Figure 25 illustrates the extent of the Vermillion River Watershed in Burnsville.

WATERSHED JOINT POWERS ORGANIZATION

A 21-member Vermillion River Watershed Management Commission (VRWMC) previously governed the watershed. The legal basis for the commission was a Joint Powers Agreement (JPA), which was formulated on June 15, 1984. The purpose of the Commission was to preserve and use natural water storage and retention in the Vermillion River Watershed to meet Surface Water Management Act goals.

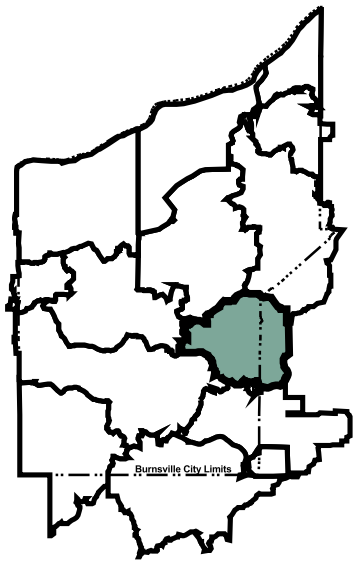
In accordance with the Metropolitan Surface Water Management Act, the WMO began to prepare a second generation plan for managing the water resources of the Vermillion River Watershed. A draft plan dated August 1999 was published and was in the process of review, but was not immediately adopted. Because a new joint powers agreement could not be established, the VRWMC was dissolved and management of the WMO reverted to Dakota and Scott Counties.

The Vermillion River Watershed located in Scott and Dakota Counties in Minnesota, is administered through a Joint Powers Agreement. The counties formed a Joint Powers Organization to exercise leadership in the development of policies, programs and projects that will protect and preserve the water resources in the Vermillion River Watershed. The VRWJPO is governed by a three-member Joint Powers Board (JPB) composed of two Dakota County Commissioners and one Scott County Commissioner. A nine-member citizen advisory Watershed Planning Commission supports the Joint Powers Organization.

Based on tax capacity, Dakota and Scott Counties jointly fund the administration and activities of the VRWJPO. The Counties established special taxing districts within their portions of the Watershed to provide a mechanism for funding VRWJPO costs. A nine-member Watershed Planning Commission (WPC), consisting of eight members from the Dakota County portion of the Watershed and one member from the Scott County portion, provides support to the JPB. The general duties of the WPC are to advise the JPB regarding its duties under the Joint Powers Agreement.

Local Planning

The Commission requires preparation of local water management plans within two years after the VRWJPO plan is approved by the Minnesota Board of Water and Soil Resources (BWSR). Local plans must comply with Minnesota Rules 8410 and the specific plan requirements of VRWJPO. The VRWJPO completed and adopted their Plan on November 3, 2005.

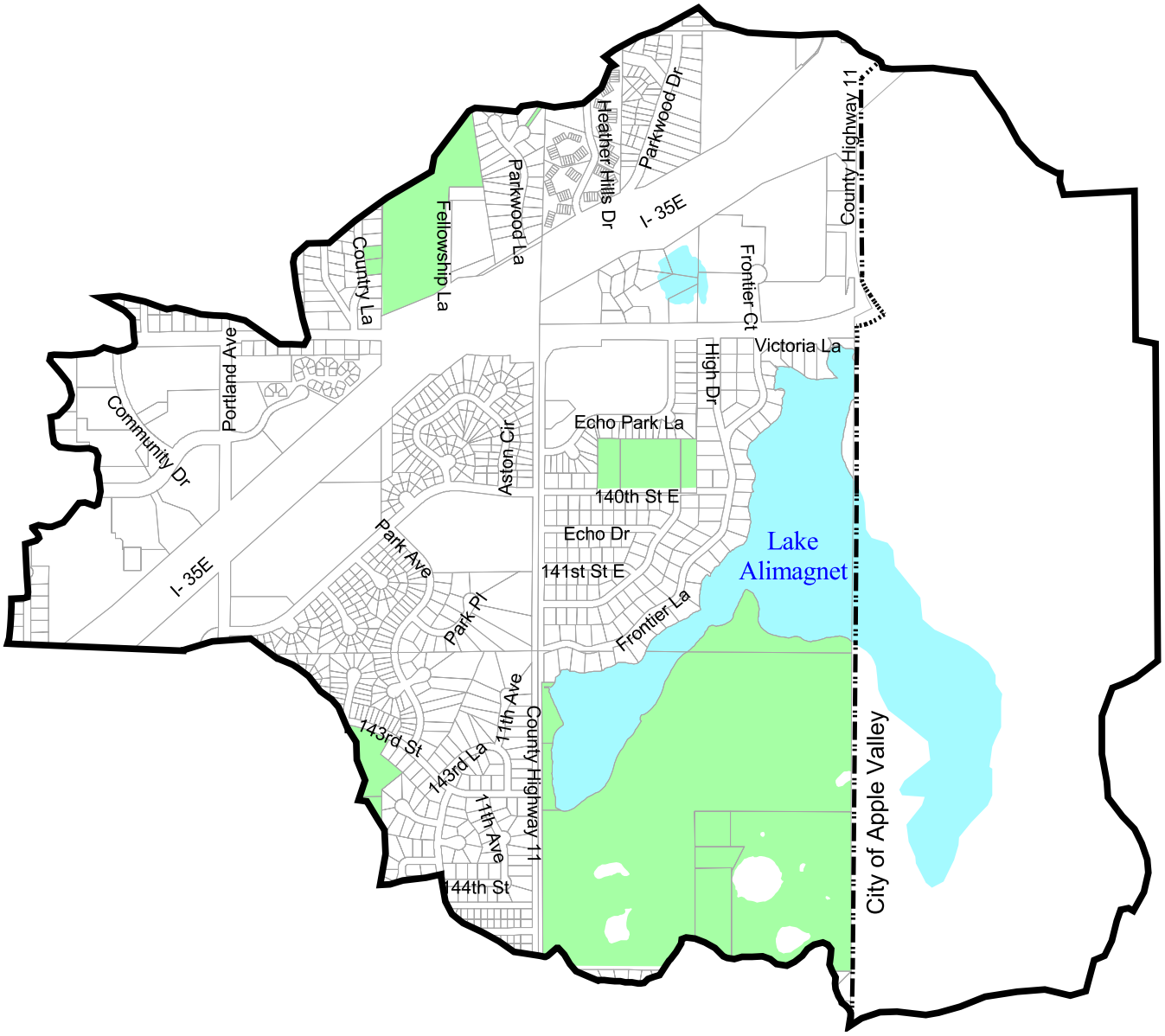


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 1392 Acres



SEH	6/11/02 subwtrshd.apr bd	**Lake Alimagnet Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 25

LAKE ALIMAGNET SUBWATERSHED

Lake Alimagnet is the sole subwatershed in Burnsville that is tributary to the Vermillion River. Lake Alimagnet is within the Vermillion River's 19,460 acre Watershed Planning Unit #1 as shown in Figure 25. The lake has a maximum depth of 9 feet, an average depth of only 5 feet and a surface area of approximately 109 acres. The watershed to lake area ratio is 12.8 to 1. The majority of the contributing area is in Apple Valley, as is the pumped-outlet. Table 49 summarizes lake quality statistics, water use restrictions, and fish population data for Lake Alimagnet.

In 1991, a diagnostic Feasibility study was prepared for the Lake. As part of that study, specific lake goals were established for the lake. The study found that the lake was impaired in terms of swimming, boating, recreational fishing and aesthetics. The impairment was based on a combination of low oxygen levels and high levels of algae in the lake.

The total phosphorus goal was set at 81μg/l. The lake is aging rapidly, with chronic occurrences of blue-green algae and a past history of fish kills. The data suggests that a reduction of external phosphorus loading was necessary to reduce the blue-green algae blooms. There are currently 12 storm sewer inlets to the lake within Burnsville and Apple Valley, three of which contribute 71 percent of the runoff. The 81μg/l goal was to be achieved after all identified watershed improvements were made.

The improvement slope for Lake Alimagnet from current, to diagnostic study goal to Grade B is steep at best. In it's current state, recreational uses (swimming, boating, fishing) are impaired. The 1999 mean summertime total phosphorus value was 122.2 μg/l. The diagnostic study found that removal of 440 lbs of phosphorus per year or a 30 percent reduction would make it possible to achieve the 81 μg/l goal. However, grade B levels would require considerably greater effort to reduce the total phosphorus concentrations to the 20 – 32 μg/l range suggested for grade B lakes by Metropolitan Council.

Based on the foregoing, it would seem practical to continue to work with Apple Valley and the Vermillion River WMO to implement all watershed related improvements to minimize phosphorus loading to the lake and to improve the sport fishery. However, the cost to achieve and maintain grade "B" level water clarity is considered cost-prohibitive. A water transparency goal of 1.2 meters is a more realistic long term goal. A detailed study of the watershed would be required to determine if it is feasible to achieve a higher lake clarity level and if a higher goal is warranted. The water clarity goal for Lake Alimagnet will be re-evaluated following completion of any future diagnostic studies. There are no critical water quantity issues.

Table 49 - Lake Alimagnet Data

Lake Quality Statistics[1]		
DNR Number		19-0021
Total Suspended Solids - TSS	Mg/l	8.0
Total Phosphorus- TP	µg/l	121.0
Chlorophyll a	µg/l	39.2
Water Clarity – Secchi Disk	Meters	0.9
Carlson'sTrophic Status Index	TSI	67.0
Watershed Area	Acres	1392
Lake Area	Acres	109
Maximum Depth	Feet	9.0
Average Depth	Feet	5.0
Public Access		West side of lake
WMO Classification		N/A
City Classification		Protection
Inlet/Outlet		12 inlets; pumped outlet in Apple Valley
Fish Population		
Rainbow Trout	Not present	
Tiger Muskie	Not present	
Northern Pike	Very Good	15.5 (2.67)
Bluegill Sunfish	Fair	12.9 (11.67)
Largemouth Bass	Poor	0.5 (0.5)
White Crappie	Not present	
Black Crappie	Very Good	7.5 (2.67)
Yellow Perch	Very Good	23.0 (8.0)
Walleye	Not present	
Channel Catfish	Stocked 9,000 in 2007	

1. Based on data from 1997 to 1999.
N/A = Not Available
Typical Ranges – North Central Hardwoods Ecoregion:

TSI	46-54
Total Phosphorus	23-50 µg/l
Water Clarity	1.5-3.2 m
Chlorophyll a	5-22 µg/l

Fish numbers compared to state wide average (in parenthesis). Source: DNR, 2000.

Water Use Summary for Lake Alimagnet

No local restrictions apply. (For a summary of state boating and other water use laws see http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.)

Action and Implementation Plans

Tables 50 and 51 present the City's Action Plan and Implementation Actions, respectively, that have been developed to achieve the purpose and goals for Lake Alimagnet.

Table 50 - Lake Alimagnet Action Plan

Subject: ➢ Lake Alimagnet Management Plan	
Purpose: ➢ Improve Lake Alimagent water quality and sport fishery	
Goal: ➢ Achieve an average water clarity of 1.2 meters	
Intended Use: ➢ Swimming, wildlife viewing and runoff management (flood control)	
Problems	➢ **Solutions**
1. External phosphorus loading is too high; internal loading is not considered a factor.	➢ 1. Re-assess the structural recommendations of the 1991 Diagnostic Feasibility Study.
2. Low dissolved oxygen conditions in the hypolimnion reduce the suitability for many sport fishery species and contribute to frequent winterkills.	➢ 2. Continue to operate aeration system that has been in place since 1999.
3. Treatment deficiencies in selected drainage areas, even with a number of existing treatment basins, could result in excessive pollutant loading to the lake.	➢ 3. Prepare a study to identify options for enhancing treatment in contributing subwatersheds.
4. Due to the mostly developed nature of the subwatershed, some of which lie outside the City, BMPs intended to reduce phosphorus loading may be difficult to implement.	➢ 4. Prepare a study to discuss the desired level of treatment, treatment options, costs and impacts on riparian and non-riparian landowners.
5. Twelve individual discharge points to the lake make it difficult to control the quality of the inflow at each location.	➢ 5. The Diagnostic study identifies 70% of the load occurring from three inlets; develop end-of-pipe solutions for the three critical inlets.

Table 51 - Lake Alimagnet Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Complete re-evaluation of diagnostic study and implemented improvements	• VRWMC • Apple Valley • Public Works • Lake Association • DNR • Available Monitoring	• Documentation of current and projected conditions of the lake. • Document neighborhood and public issues and concerns	2002	$25,000 ($50,000 total, also $25,000 Apple Valley)
2. Work with Apple Valley to operate aeration system	• 1991 Diagnostic Feasibility • Step 1 (above) • DNR • Neighborhood Input • VRWMC • City of Apple Valley	• Annual Operation	Annual	NA
3. Implement water quality improvement projects	• Detailed Study • City of Apple Valley • VRWMC	• Feasibility Study • Completed design and Construction	2004 2005 2006	$35,000 $140,000 $400,000
4. Implement a modular storm water treatment system (filters) at existing storm water inlets as pilot project	• Vendor Data • Current user references • Public Works Staff	• Completed design • Installation • Monitoring	2004	NA

BLACK DOG WATERSHED

The Black Dog Watershed is located in northwestern Dakota County and a portion of Scott County. Figure 26 illustrates the location of the watershed in relation to the seven county metropolitan area. When the Black Dog Watershed Management Organization (BDWMO) was formed in 1985, the watershed covered 12,900 acres (about 20.2 square miles). In 1999, the portion of the terminated Credit River watershed in Dakota County was incorporated into the Black Dog WMO, increasing the total watershed area by 3,700 acres (5.7 square miles). Figure 27 illustrates the Black Dog watershed and subwatersheds relative to Burnsville.

WATERSHED MANAGEMENT ORGANIZATION

The legal basis for the BDWMO is a Joint Powers Agreement (JPA), which was formulated in June 1985 between he cities of Apple Valley, Burnsville, Eagan, Lakeville and Savage. The WMO was formed in response to the requirements of the State Metropolitan Surface Water Management Act of 1982. The BDWMO's first watershed plan was approved on November 22, 1989.

In 1999, the Dakota County portion of the former Credit River watershed was added to the jurisdiction of the BDWMO. As a result, a revised and restated joint powers agreement was signed by the member communities. The BDWMO and Scott County signed a memorandum of understanding regarding the management of the Credit River watershed in Dakota County.

The BDWMO's general purposes include the following:

- Keep regulation at the local level;
- Assist member communities with inter-community issues;
- Monitor, classify and manage strategic water bodies (Crystal Lake, Keller Lake, Lac Lavon and Sunset Pond in Burnsville);
- Monitor, evaluate and/or model storm water runoff quality;
- Improve the quality of storm water runoff reaching the Minnesota River;
- Develop policies to be implemented by member cities to achieve the organization's goals; and
- Assess the performance of the BDWMO and the member cities in achieving the organization's goals.

Local Planning

Each member City is responsible for preparing and implementing a local water resources management plan, as required in the WMO plan. One of the key requirements of the BDWMO Plan and the City's plan is that discharge rates leaving the BDWMO must be maintained at predevelopment rates (for developed watersheds) or existing rates (for fully developed wathersheds).

BDWMO Lake Classification

The Black Dog Water Management uses four simple categories to describe its water bodies as shown in Table 52. The City of Burnsville's classification system is shown in Table 44 in the Watershed Assessment section of this Plan. The City's system uses three categories or levels including: Protection; Improvement and Management.

Table 52 - Black Dog WMO Lake Classification

(Barr, 2000)

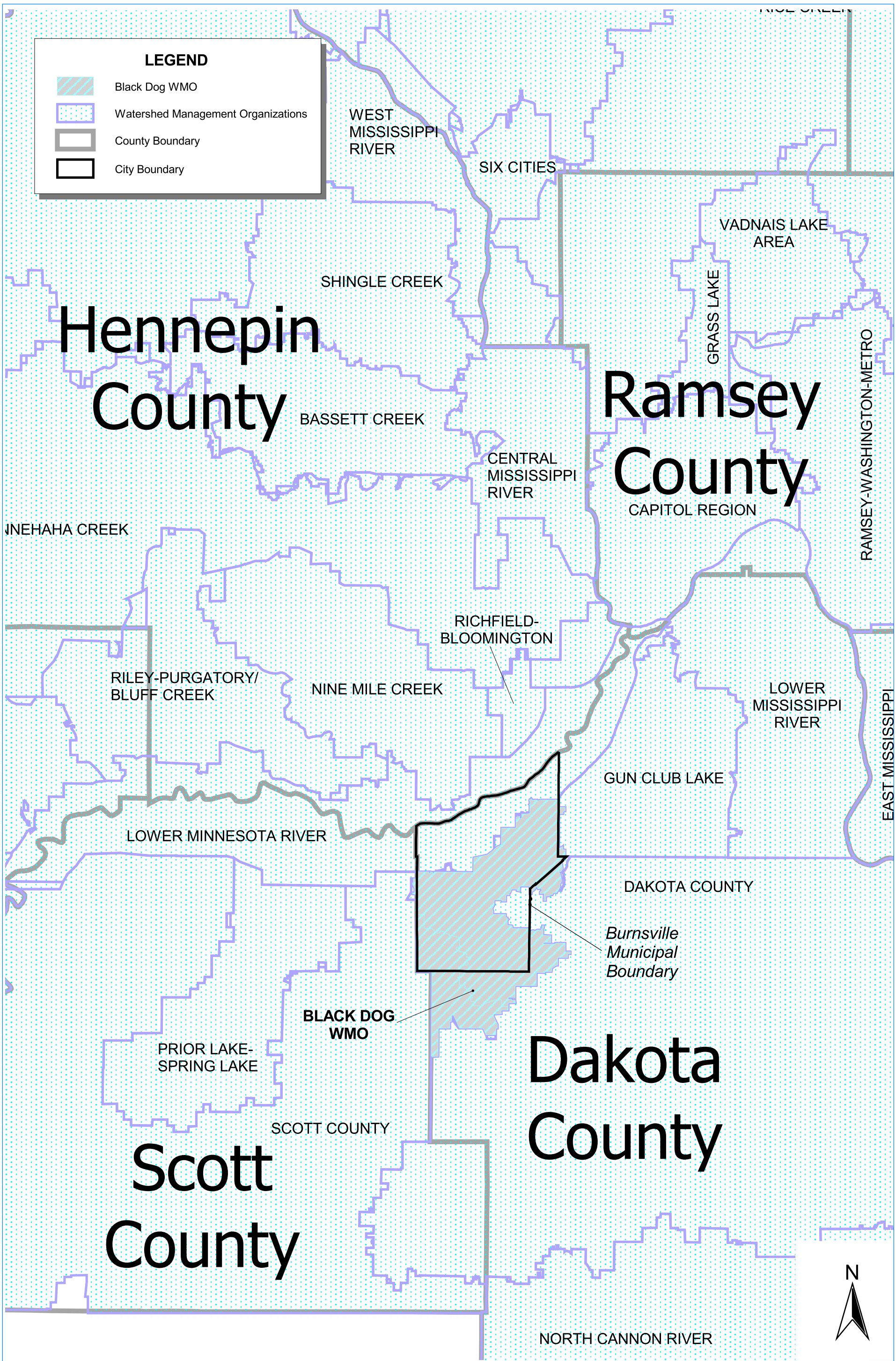
Classification	Description
Category I	Highest water quality; supports swimming and other direct contact recreational activities such as water skiing, scuba diving and snorkeling.
Category II	Supports indirect recreational activities such as boating and fishing.
Category III	Provides wildlife habitat, aesthetic enjoyment and possibly warm water fishing.
Category IV and Category V	Typically water quality ponds used as nutrient and sediment traps.

In addition to the classification system, the BDWMO has established action levels for four strategic water bodies in Burnsville: Crystal Lake; Lac Lavon; Keller Lake; and Sunset Pond. In some cases, the City's water clarity goal is somewhat higher than the WMOs action level for these lakes. The City recognizes that the higher goal(s) may be difficult to achieve, and is committed to working with the WMO to define the appropriate water clarity level for a selected lake. More detailed discussions would take place following completion of diagnostic studies for these strategic lakes.

Subwatersheds

There are 10 identified subwatersheds of the Black Dog Watershed that lie within the boundaries of Burnsville. Figure 27 illustrates the Black Dog WMO subwatersheds in Burnsville.

Each subwatershed has been further divided into smaller catchments or drainage areas that generally correspond to the City's 1994 Comprehensive Stormwater Management Plan. Some revisions and updates to subwateshed and catchment boundaries have been made as discussed previously in the Watershed Assessment Section of this Plan and are illustrated in the foldout map in Appendix D (see Figure D-1).



SEH	6/11/02 watershed.apr naf	LOCATION OF BLACK DOG WATERSHED MANAGEMENT ORGANIZATION	FILE NO. ABURNS9904.00 FIG NO. 26	

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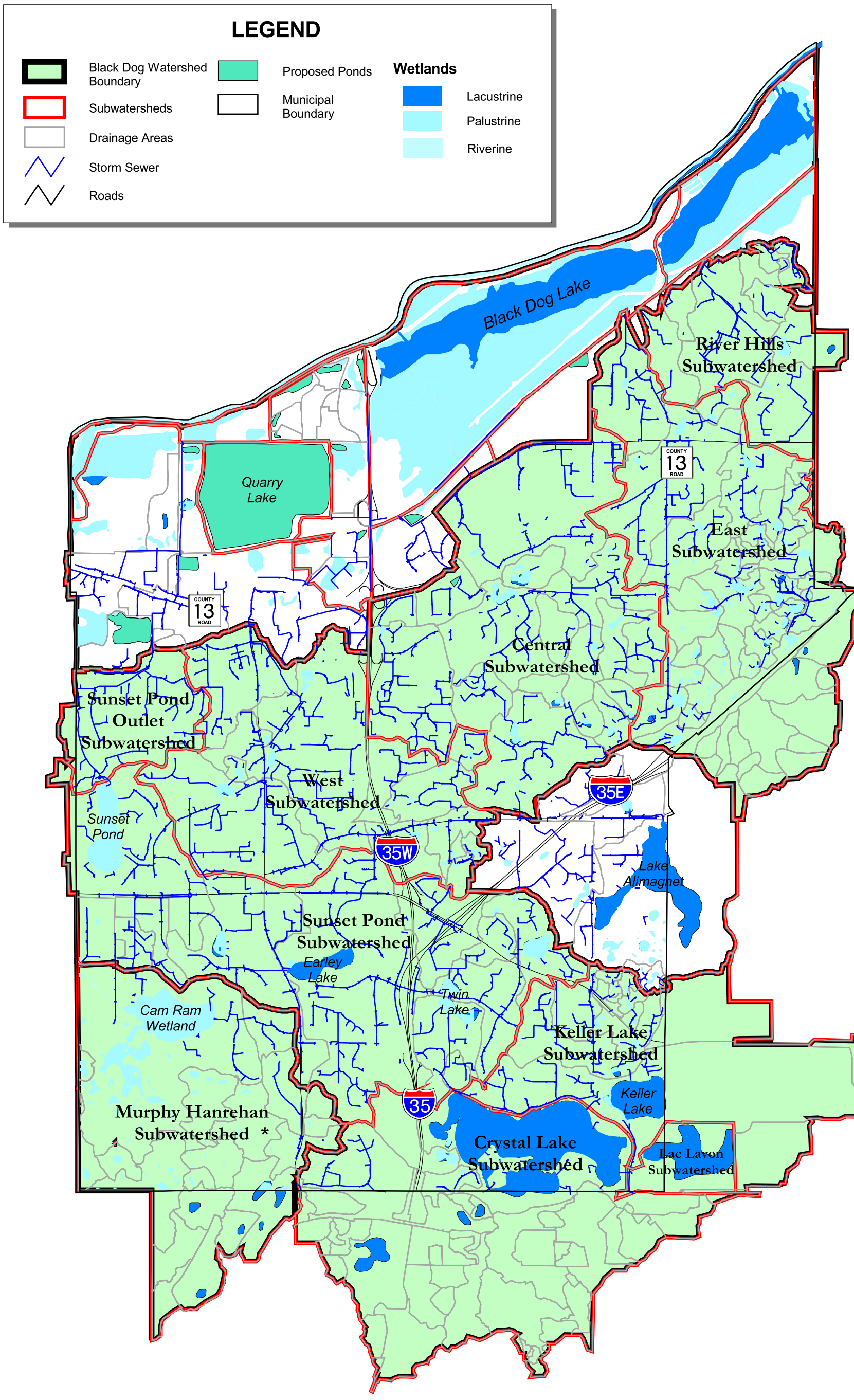

* Under the Jurisdiction of Black Dog WMO

1" = 3500'

SEH	9/20/02 watershed.apr naf	BLACK DOG SUBWATERSHEDS IN BURNSVILLE	FILE NO. ABURNS9904.00 FIG NO. 27	

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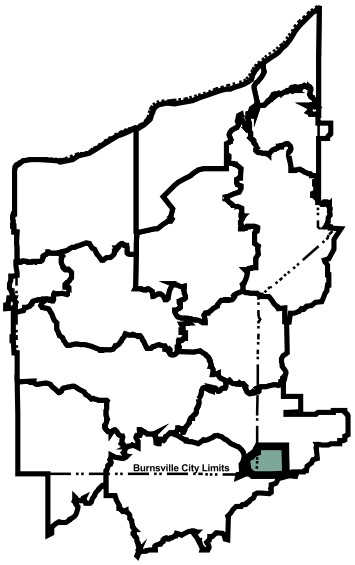
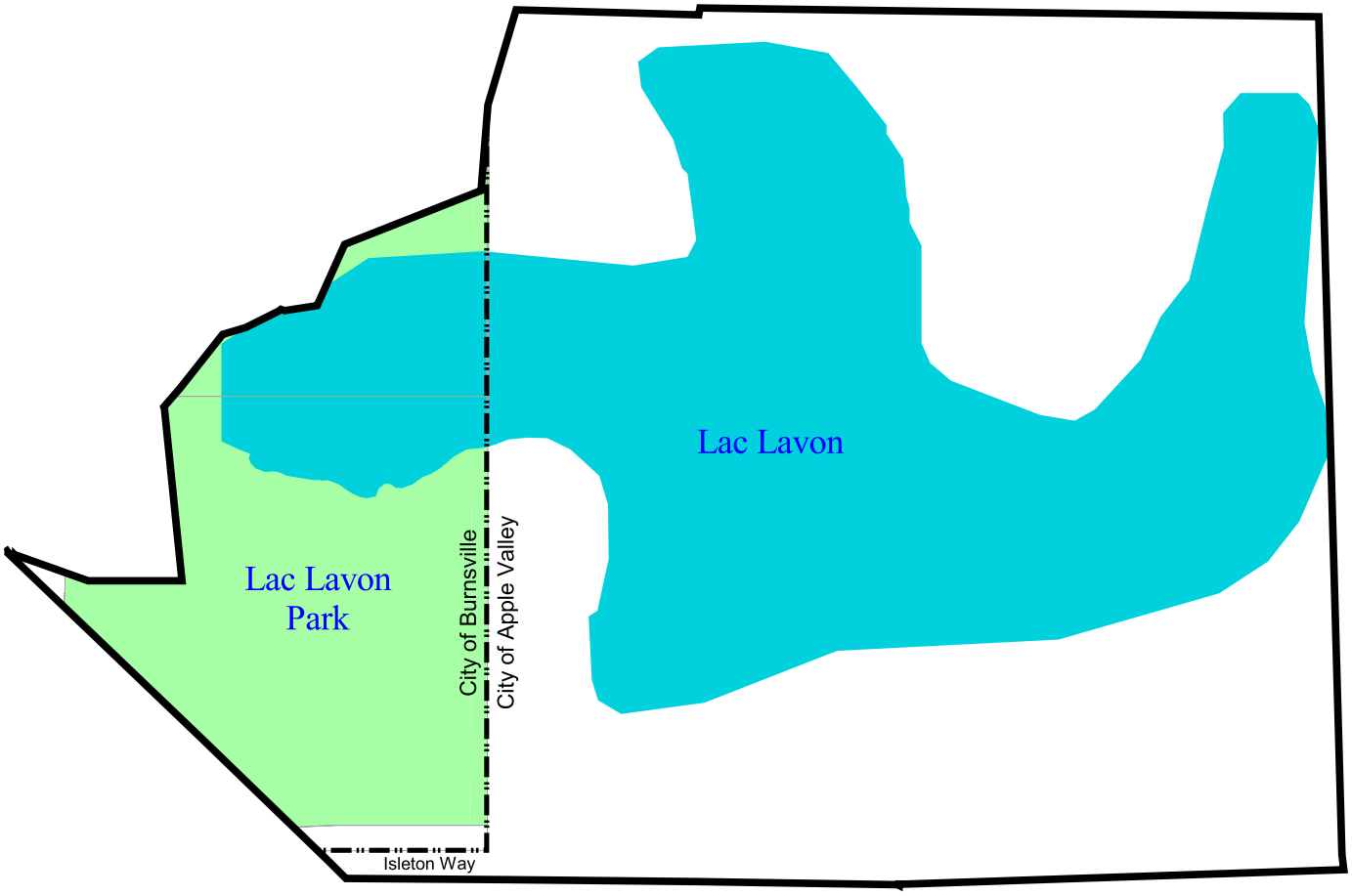


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- USGS DLG Lakes
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, Mn/DOT, and USGS.

Watershed Area = 184 Acres



SEH	9/20/02 subwtrshd.apr bd	**Lac Lavon Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 28	

LAC LAVON SUBWATERSHED

Lac Lavon is a unique resource, not only in Burnsville, but also in the Metropolitan area. It is but one of a handful of metropolitan area lakes that rates an "A" in the literature values. Lac Lavon's quality is similar to that of lakes in northern Minnesota. One reason for Lac Lavon's quality is its relatively small watershed to lake area ratio of approximately 3.2:1. The lake has an average depth of less than 15 feet and a maximum depth of 32 feet. The 60-acre lake does not have a public access, nor does it have storm water inlets or outlets. The former gravel pit area turned lake exemplifies the benefits of limiting the influences of urbanization, setting a pattern the City hopes to repeat on future "Kraemer/Quarry" Lake (see discussion regarding the Northwest Burnsville subwatershed). The Lac Lavon subwatershed is shown in Figure 28.

Lac Lavon has been stocked in the 1990's with rainbow trout. Trout are a cold water species and their presence is considered an indicator of very good environmental quality. The Black Dog WMO draft plan does not anticipate any increase in total phosphorus loading to the lake. Therefore, maintaining Lac Lavon in its present form, while one of Burnsville's highest priorities, should not require costly management. Lake information, lake quality data and fish population data for Lac Lavon are summarized in Table 53.

The goal for Lac Lavon should be based on water clarity of 3.6 meters. There are no current water quality or quantity issues, although eurasian water milfoil currently exists in Lac Lavon. The City continues to administer an active aquatic vegetation control program. Future problems may exist related to runoff from the adjacent youth athletic complex.

Policies and Implementation Plan

Tables 54 and 55 present the City's Action Plan and Implementation Actions, respectively, that have been developed to achieve the purpose and goals for Lac Lavon.

Table 53 - Lac Lavon Data

Lake Quality Statistics[1]		
DNR Number		19-0446
Total Suspended Solids – TSS	Mg/l	39.0
Total Phosphorus- TP	µg/l	15.4
Chlorophyll a	µg/l	4.8
Water Clarity – Secchi Disk	Meters	3.7
Carlson'sTrophic Status Index	TSI	41.0
Watershed Area	Acres	184
Lake Area	Acres	60
Maximum Depth	Feet	32
Average Depth	Feet	<15
Public Access		None
WMO Classification		Category I
City Classification		Protection
Inlet/Outlet		None
Fish Population		
Rainbow Trout	Fair	NA - Stocked by DNR
Tiger Muskie	Not present	
Northern Pike	Fair	3.5 (2.67)
Bluegill Sunfish	Very Good	62.2 (11.67)
Largemouth Bass	Poor	0.5 (0.5)
White Crappie	Poor	1.0 (0.71)
Black Crappie	Poor	1.4 (2.67)
Yellow Perch	Not present	
Walleye	Not present	
Channel Catfish	Not present	

1. Lake quality data from 1997-1999.
N/A = Not Available
Typical Ranges – North Central Hardwoods Ecoregion:

TSI	46-54
Total Phosphorus	23-50 µg/l
Water Clarity	1.5-3.2 m
Chlorophyll a	5-22 µg/l

Fish numbers compared to state wide average (in parenthesis). Source: DNR, 2000.

Water Use Summary for Lac Lavon

- Motorized vehicles, snowmobiles, and all terrain vehicles are prohibited.
- Electric motors allowed.
- No operation of watercraft from 10:00 p.m. to 5:00 a.m..
- No unnecessary, excessive noises associated with the operation or loading and unloading of any vehicle or motorboat.

Source: Burnsville Ordinance Chapter 8-9 and 6-5; and DNR website at:
http://www.dnr.state.mn.us/information and education/water_safety/surface_use.pdf
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.

Table 54 - Lac Lavon Action Plan

Subject:

- Lac Lavon Management Plan

Purpose:

- Manage Lake consistent with its classification.

Goal:

- Maintain existing water quality clarity of 3.6 meters

Lake Classification:

- BDWMO: Strategic, Category I, Action Level = 3.6 meters

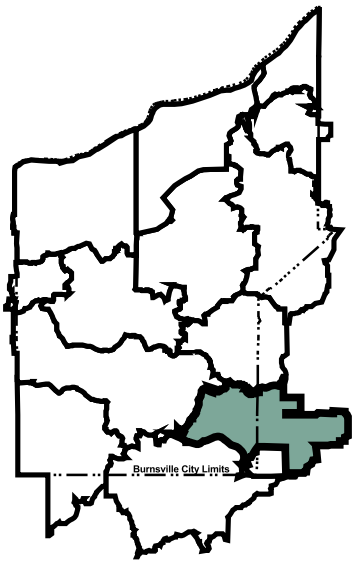
Intended Use:

- Full use – swimming, boating, fishing, aesthetics and runoff management (flood control); clarity fully supportive of swimming.

Problems	Solutions
1. Eurasian water milfoil threatens the recreational use of the lake.	1. Continue to actively implement a control program in partnership with Apple Valley to minimize the spread of eurasian water milfoil.
2. Runoff from the adjacent youth athletic complex may pose a threat to water quality.	2. Complete an assessment of runoff patterns and water quality.
3. Lack of information on fisheries because the Lake is not a DNR Protected Water and is not managed by the DNR Fisheries Program.	3. Partner with Apple Valley to evaluate the fishery.

Table 55 - Lac Lavon Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Partner with Apple Valley to continue to actively implement a control program to minimize the spread of eurasian watermilfoil	• Recreation, Fish and Wildlife Goals • Policies of this plan • Experience of other communities • Vendors	• Treatment (as needed) and annual assessment • Annual habitat assessment	Annual Annual	See Table 31 #1 NA
2. Complete an assessment of runoff patterns and water quality at the youth athletic complex	• Park Plan (Youth Complex) • Storm drainage facilities • Contour mapping	• Completed study • Implementation Program	2007 2007	$7,000 $100,000
3. Complete assessment of fish populations	• Fisheries staff • Fisheries data • Apple Valley • Black Dog WMO	• Complete assessment of populations	2004	$8,000

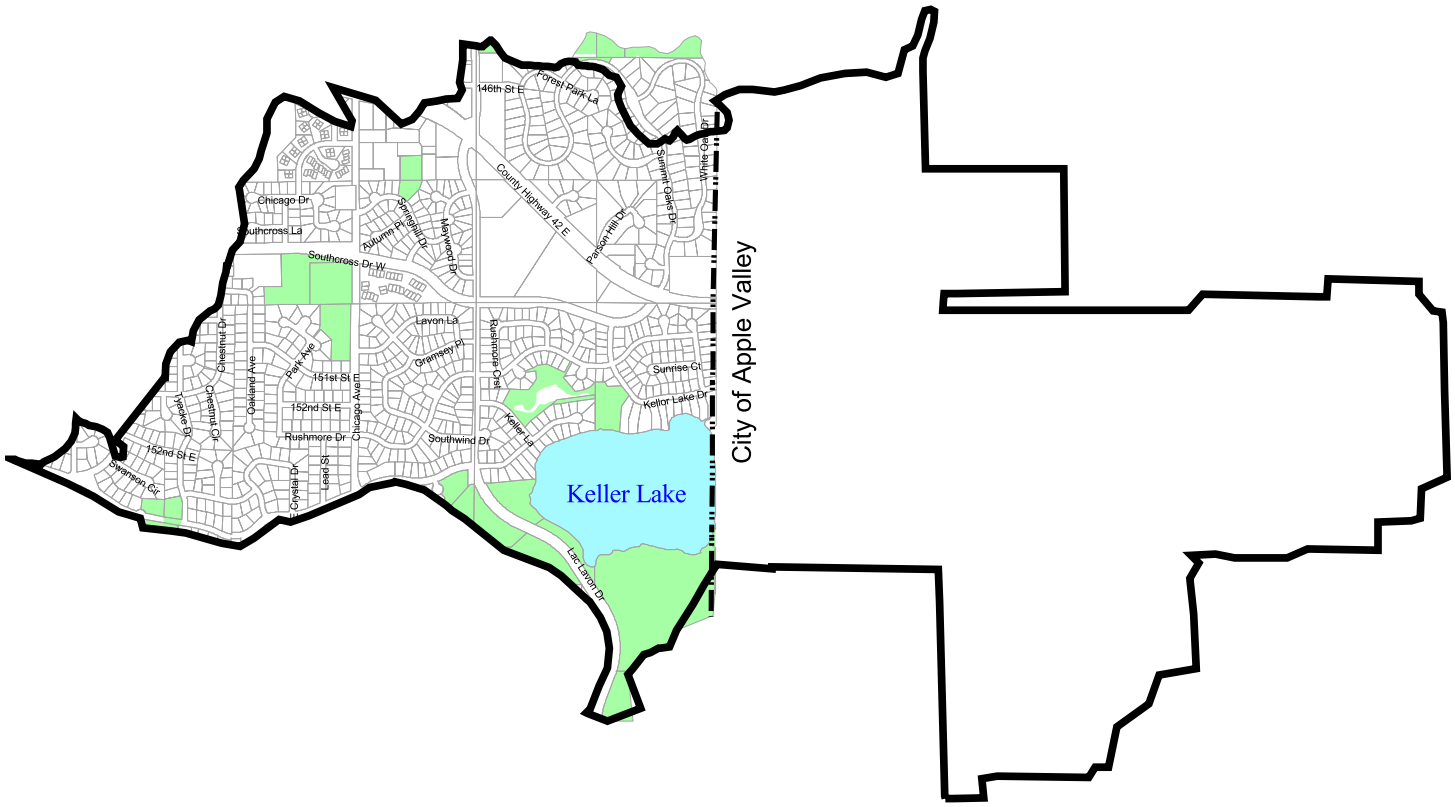


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 1,409 Acres



SEH	9/10/02	**Keller Lake Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00	
	subwtrshd.apr bd		FIG NO. 29	

KELLER LAKE SUBWATERSHED

Keller Lake has typically been rated by Metropolitan Council as having clarity less than 1 meter and high to severe levels of algae. The lake has an average depth of only 4.6 feet and a maximum depth of only 7 feet. The 63 acre lake has a watershed to surface area ration of 22 to 1 which helps to explain its current quality (as example, Lac Lavon has a ration of 3.2 to 1). Aside from 1998 when Keller's water quality improved significantly as a result of the Crystal Lake hypolimentic withdrawal system discharges, the lake has a very high phosphorus concentration. At the same time water quality improved, the lake experienced explosive plant growth. Based on current transparencies, the recreational suitability index would indicate very limited recreation uses based on citizen perception. The Keller Lake subwatershed is illustrated in Figure 29.

Keller Lake's predicted phosphorus load could increase by about 7 percent without additional treatment or BMPs. With BMPs implemented in the watershed, the BDWMO estimates that the phosphorus load would increase approximately 4 percent. The predicted future in-lake total phosphorus concentration is expected to change very little. There is minimal land use change expected in the contributing areas from Apple Valley. The Black Dog WMO should take the lead in developing solutions which also depend upon Apple Valley. Additional efforts should be undertaken to re-establish citizen expectations for intended uses.

In 1996, high water level complaints on Keller Lake prompted a study of options to increase discharges to Crystal Lake. It is advisable to hold off on any such improvements until one can gauge the impact of the capacity improvements recommended for Crystal Lake. The City's lake quality goal for Keller Lake is 1.8 meters of clarity. Quantity issues should be addressed by improvements to the Crystal Lake outlet (see Crystal Lake Special Study in Appendix A). At the time this Plan was completed, the BDWMO had not set an action level for Keller Lake. Upon completion of a diagnostic study on the Lake, the City and BDWMO will work cooperatively to evaluate the City's clarity goal and adjust it as needed based on the findings of the study. The BDWMO set an action level for Keller Lake at 0.7 meters of clarity.

Table 56 summarizes lake quality statistics, water use restrictions, and fish population data for Keller Lake.

Policies and Implementation Plan

Tables 57 and 58 present the City's Action Plan and Implementation Actions, respectively, that have been developed to achieve the purpose and goals for Keller Lake.

Table 56 - Keller Lake Data

Lake Quality Statistics[1]		
DNR Number		19-0025
Total Suspended Solids - TSS	Mg/l	62
Total Phosphorus- TP	µg/l	84.9
Chlorophyll a	µg/l	56.6
Water Clarity – Secchi Disk	Meters	1.3
Carlson's Trophic Status Index	TSI	60.5
Watershed Area	Acres	1409
Lake Area	Acres	63
Maximum Depth	Feet	7
Average Depth	Feet	4.6
Public Access		None
WMO Classification		Category III
City Classification		Protection
Inlet/Outlet		Outlets to Crystal Lake
Fish Population		
Rainbow Trout	Not present	
Tiger Muskie	Not present	
Northern Pike	Very Good	80 (2.67)
Bluegill Sunfish	Very Good	73.6 (11.67)
Largemouth Bass	Poor	0.2 (0.5)
White Crappie	Not present	
Black Crappie	Poor	2.4 (2.67)
Yellow Perch	Not present	
Walleye	Not present	
Channel Catfish	Not present	

1. Lake quality data taken from 1998 to 1999 data. Clarity taken from 1970-1996 data or most recently available three year average.

N/A = Not Available

Typical Ranges – North Central Hardwoods Ecoregion:

TSI	46-54
Total Phosphorus	23-50 µg/l
Water Clarity	1.5 - 3.2 m
Chlorophyll a	5-22 µg/l

Fish numbers compared to state wide average (in parenthesis). Source: DNR, 2000.

Water Use Summary for Keller Lake

- Motorized vehicles, snowmobiles, and all terrain vehicles are prohibited.
- Electric motors allowed.
- No remote control internal combustion engines without City approval. No operation of watercraft with more than a 5 horsepower motor.
- No operation of watercraft between the hours of 10:00 p.m. to 5:00 a.m.

Source: Burnsville Ordinance Chapter 8-11; and DNR website at:
http://www.dnr.state.mn.us/information and education/water_safety/surface_use.pdf).
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.)

Table 57 - Keller Lake Action Plan

Subject: ➢ Keller Lake Action Plan	
Purpose: ➢ Manage Keller Lake to be consistent with Category III standards (BDWMO).	
Goal: ➢ Monitor Keller Lake water quality and manage the contributing subwatershed to maintain water clarity to 1.8 meters	
Lake Classification: ➢ BDWMO: Strategic, Category III, Action Level not set as of June 2002	
Intended Use: ➢ Supports indirect recreational activities such as boating and fishing. Provides wildlife habitat.	
Problems	**Solutions**
1. Recent increases in water clarity and overall water quality resulted from the discontinued Crystal Lake water quality treatment system. Improved clarity resulted in explosive aquatic plant growth.	➢ 1. Re-establish citizen expectations for intended uses of Keller Lake based on pre-1996 quality, in cooperation with Apple Valley.
2. Future development or redevelopment, even with treatment to NURP standards, could increase the pollutant loading to the lake.	➢ 2. Pursue creative water resources management options to minimize development-related water quality impacts in partnership with Apple Valley.
3. Due to the mostly developed nature of the subwatershed, some lying outside the City, BMPs intended to reduce phosphorus loading may be difficult to implement.	➢ 3. Request the WMO complete a study to discuss the desired level of treatment, treatment options, costs and impacts on riparian and non-riparian landowners.
4. Heavy aquatic vegetation severely limits active recreational use.	➢ 4. Consider weed harvesting to enhance recreational opportunities.
5. Past periods of high water levels on Keller Lake may dictate the need for increased discharge capacity to Crystal Lake.	➢ 5. Evaluate downstream improvements impact on Keller Lake.

Table 58 - Keller Lake Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Develop a detailed study of the most important treatment facilities, their treatment capacity and their treatment potential	• Field inspections – pond depths • Existing modeling • As-built drawings • Neighborhood Input • BDWMO • City of Apple Valley	• Detailed Study in conjunction with Crystal Lake study	2004	$10,000
2. Implement water quality improvement projects	• Detailed Study • City of Apple Valley • BDWMO	• Feasibility Study • Completed design • Completed Construction	2008 2008 2009	$5,000 $30,000 $400,000
3. Consider weed harvesting to enhance recreational opportunities	• Experience of other communities • Vendors • Recreation, fish and wildlife goals • Policies of this WRMP	• Treatment (as needed) and annual assessment	Annual	See Table 31 #1
4. Re-evaluate the need for increased outlet capacity for Keller Lake	• Keller Lake Outlet Report (1996) • DNR files • Lake level records • Crystal Lake outlet project	• Feasibility Study / Documentation of findings and recommendation	Future	Future

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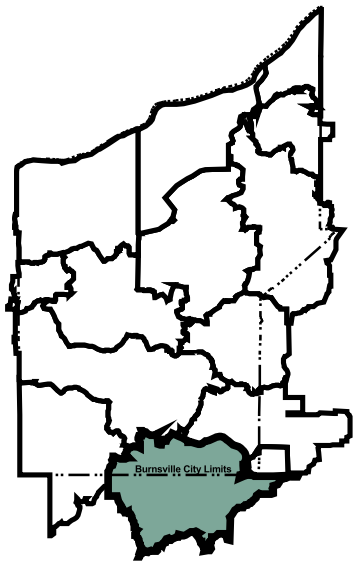
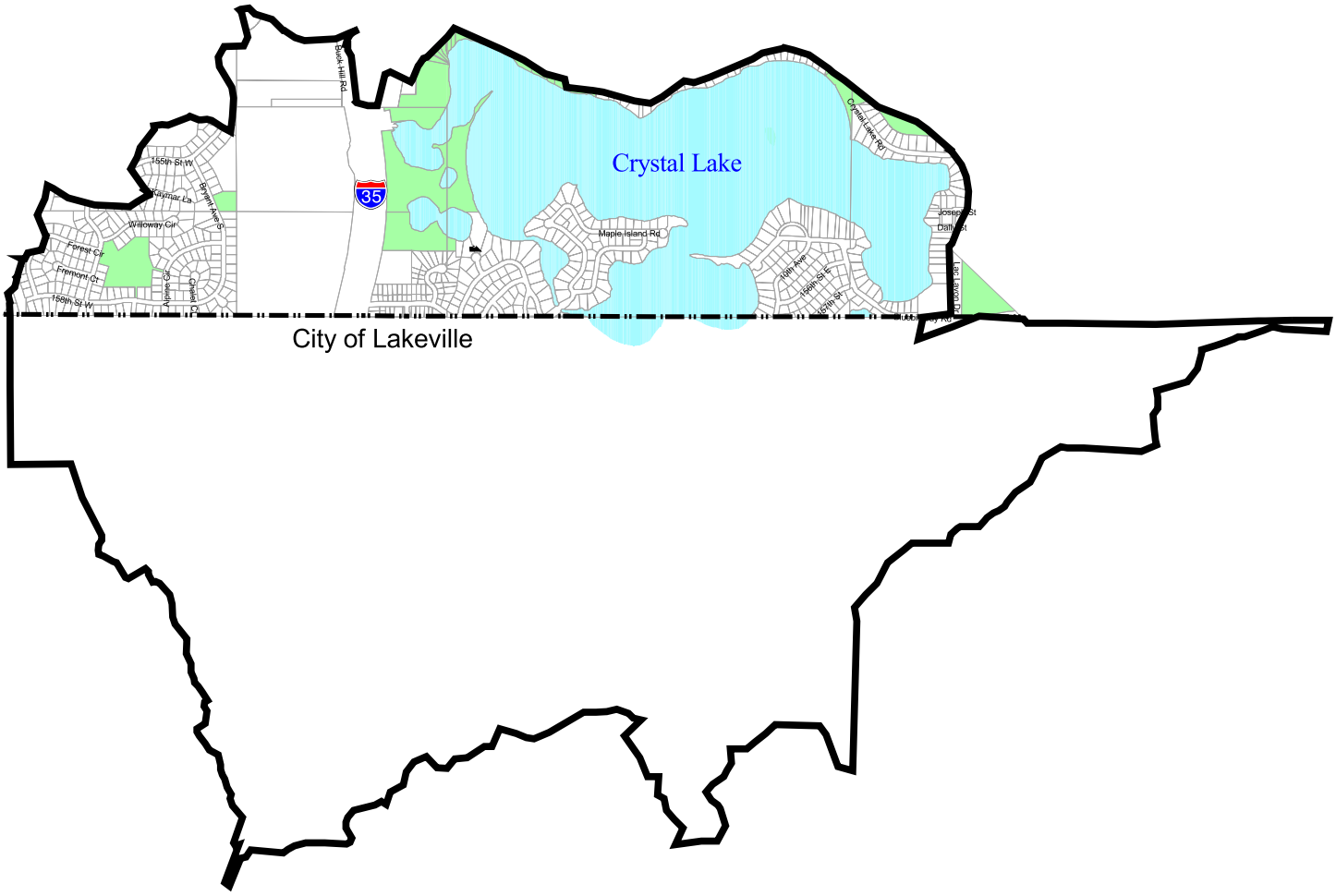


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 2,155 Acres



SEH	9/10/02 subwtrshd.apr bd	**Crystal Lake Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 30

CRYSTAL LAKE SUBWATERSHED

The Crystal-Keller basin in southeast Burnsville has a long history relative to drainage and water level fluctuations as referred to in the Executive Summary of this Plan. Ultimately, a deep gravity system was built. Significant downstream improvements were required including the construction of the dam that retains sunset pond and the box culvert system that discharges to the river. However, high water level problems have returned (see Special Study in Appendix A). The Crystal Lake subwatershed is illustrated in Figure 30.

In the 1990's, water quality concerns on Crystal Lake lead to the development of a hypolimnetic (bottom) withdrawal and chemical treatment system by the Black Dog WMO. The system was installed in 1995 and began operating in 1996. The plan was to remove water form the bottom of the Crystal Lake water column where phosphorus was present, mix in ferric chloride and allow the mixture to safely settle in Keller Lake before the water returned through the existing culvert connecting the two lakes.

From the beginning, the system was plagued with odor problems. Hydrogen sulfide that naturally occurs in the lower water column was being released when the water was withdrawn for treatment, resulting in citizen complaints. Use of the system was discontinued indefinitely in 1999. In reviewing the decision, the Black Dog WMO reasoned that there might be more cost effective means to accomplish water quality improvements on Crystal Lake. The system did not produce the desired improvements on Crystal Lake. An unexpected benefit was a significant, though short-term improvement in Keller Lake's water quality due to the injection of treated water.

Crystal Lake Strategy

The 292-acre lake is highly valued for full contact recreational purposes. With a watershed to lake area ratio of approximately 7.4 to 1 (not including the Keller Lake watershed area), external storm water and phosphorus loading influence the lake.

On the Metropolitan Council system, Crystal Lake would only rate a "C" based on 1994 through 1999 data. On MPCA's citizen suitability scale, a 1.9-meter transparency would indicate a minor impact to swimming-impaired lake. The Black Dog WMO estimates that future land uses change could increase the phosphorus loading to the lake by over 25 percent without additional best management practices. The predicted in-lake total phosphorus concentration could increase by over 16 percent.

The City believes that the revised (2008) water clarity of 2.1 meters (from 2.6 in the 2002 Plan) is an appropriate long-term goal for Crystal Lake, compared to Crystal Lake's current 1.9 meters of water clarity. The City is committed to continuing work with the WMO to prioritize implementation projects under consideration in the watershed. As concluded by the Black Dog WMO (Barr, 2000), watershed loading reduction is among the most cost-effective approaches to improving Crystal Lake's

water quality. Other cost effective options should also be explored. The Black Dog WMO is showing considerable land use change ahead for areas of Lakeville that are tributary to Crystal Lake. The City will work actively with the WMO to evaluate options for improving the water quality of Crystal Lake including phosphorus loading reduction strategies.

Two potential sites have been identified on a preliminary basis for pre-treatment of storm water. The first site is south of Keller Lake and west of Lac Lavon Drive. The second site is between Keller Lake and Crystal Lake east of Crystal Lake Road.

Water Quantity Issues

Water quantity issues have also been noted at Crystal Lake. A special study was completed as part of this planning process and is described in Appendix A.

The current outlet structure is a box-weir that drops into a 36-inch diameter pipe, ultimately discharging to South Twin. The peak discharge rate from the system is 30 cfs for the 100-year, 24-hour event.

The special study showed that the box-weir is adequate. Therefore, any improvements would need to focus on the pipe connecting the weir-box to the downstream system. Ten alternatives were examined, focusing on replacing varying lengths of pipe immediately downstream of Crystal Lake and observing downstream impacts.

While no improvements are proposed at this time or funded in this Plan, the study recommended an alternative to implement at some time in the future. If and when this recommendation is pursued, the BDWMO will complete a cost allocation analysis to determine if other cities will contribute funding for the project. The BDWMO may also be involved in assigning costs to the parties involved.

The recommended (future) improvements include replacement of 986 feet of existing storm sewer immediately downstream of Crystal Lake, ending at Crystal Lake Road and Eileen Circle. The newly constructed 48 inch diameter outlet would replace the in-place 36 inch pipe and would lower the pipe elevation at Crystal Lake by one-foot. The results would (1) increase the peak discharge by nearly 100 percent; (2) decrease the 100 year peak by 0.75 feet and (3) reduce the duration of high water levels above 934 from an estimated 18 days to about 7 days.

Table 59 summarizes lake quality statistics, water use restrictions, and fish population data for Crystal Lake.

Policies and Implementation Plan

Tables 60 and 61 present the City's Action Plan and Implementation Actions, respectively, that have been developed to achieve the purpose and goals for Crystal Lake.

Table 59 - Crystal Lake Data

Lake Quality Statistics[1]		
DNR Number		19-0027
Total Suspended Solids – TSS	mg/l	51
Total Phosphorus- TP	µg/l	44.0
Chlorophyll a	µg/l	25.9
Water Clarity – Secchi Disk	Meters	1.7
Carlson's Trophic Status Index	TSI	58.0
Watershed Area	Acres	2155
Lake Area	Acres	292
Maximum Depth	Feet	37
Average Depth	Feet	10.0
Public Access		Beach, Boat Launch
WMO Classification		Category I
City Classification		Protection
Inlet/Outlet		Inlet from Keller; outlet to South Twin
Fish Population		
Rainbow Trout	Not present	
Tiger Muskie	Fair	0.5 (0.17)
Northern Pike	Very Good	12.3 (2.67)
Bluegill Sunfish	Very Good	201.9 (11.67)
Largemouth Bass	Poor	0.2 (0.5)
White Crappie	Not present	
Black Crappie	Fair	3.6 (2.67)
Yellow Perch	Poor	3.7 (8.0)
Walleye	Poor	0.2 (0.5)
Channel Catfish	Poor	

1. Taken from year 1998 and 1999 data. Clarity taken from 1970-1996 data or most recently available three year average.

N/A = Not Available

Typical Ranges – North Central Hardwoods Ecoregion:

TSI	46-54
Total Phosphorus	23-50 µg/l
Water Clarity	1.5—3.2 m
Chlorophyll a	5-22 µg/l

Fish numbers compared to state wide average (in parenthesis). Source: DNR, 2000.

Burnsville and MN DNR Water Use Summary for Crystal Lake

- Slow-no wake zones: Maple Island Bay and Buck Hill Bay; within 150 feet from shore except not around Pik Nik Island; and when lake water elevation is 934 feet or greater.
- No water-skiing in a slow-no wake zone.
- All watercraft exceeding a slow-no wake speed must travel in a clockwise direction.
- Maximum speed limit from 9:00 a.m. to sunset is 40 mph.
- Maximum speed limit from sunset to 9:00 a.m. is 15 mph.

Source: Burnsville Ordinance Chapter 8-10; and DNR website at:
http://www.dnr.state.mn.us/information education/water_safety/surface_use.pdf).
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.)

Table 60 - Crystal Lake Action Plan

Subject:

- Crystal Lake Management Plan

Purpose:

- Protect and preserve Crystal Lake to be consistent with Category I standards

Goal:

- Improve the quality and rate of runoff to Crystal Lake and work towards lake clarity of 2.1 meters

Lake Classification:

- BDWMO: Strategic, Category I

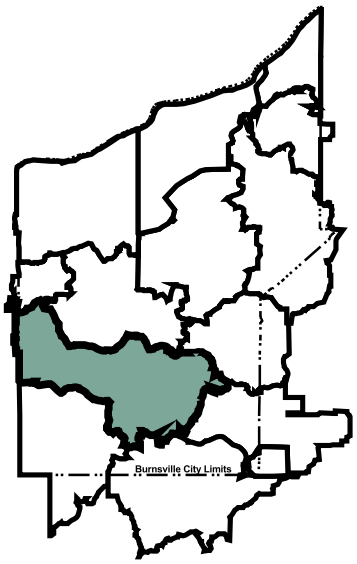
Intended Use:

- Supports swimming and other direct contact recreational activities such as water skiing, scuba diving and snorkeling. Provides wildlife habitat.

Problems	Solutions
1. Total chlorophyll a levels exceed ecoregion ranges and are the only parameter not meeting Category I standards.	➢ 1. Prepare preliminary annual nutrient budget for the lake to identify target removal goals and to account for internal loading.
2a. Treatment limitations: Future development, even with conventional treatment to NURP standards, could increase the pollutant loading to the lake.	➢ 2a. Study treatment options: Pursue alternative integrated management practices to minimize development-related water quality impacts.
2b. BMPs intended to reduce phosphorus loading may be difficult to implement in some areas of the watershed.	➢ 2b. Determine the desired level of treatment, treatment options, costs and impacts on riparian and non-riparian landowners.
2c. Treatment deficiencies in selected drainage areas could result in excessive pollutant loading to the lake.	➢ 2c. Identify treatment options specific to subwatersheds.
3. Future peak volumes will continue to cause shoreline erosion and diminish recreation use.	➢ 3. Pursue water resources management options to minimize development-related water quantity impacts.
4. Heavy aquatic vegetation severely limits active recreational use.	➢ 4. Consider harvesting aquatic vegetation to enhance recreational opportunities.

Table 61 - Crystal Lake Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Complete diagnostic study of internal lake loading	• Public Works Staff • BDWMO • Available Monitoring Data	• Document water quality problems and solutions • Implement solutions	2002 2002	NA See Black Dog Plan
2. Implement water quality improvement projects	• Vendor Data • Current user references • Public Works Staff • Field inspections – pond depths • Existing modeling • As-built drawings • Neighborhood Input • BDWMO • City of Lakeville • Detailed Study	• Feasibility Study, completed design and construction	2003 2004	$175,000 $250,000
3. Implement a plan to decrease the duration of flooding on Crystal Lake, if needed, by increasing the discharge capacity at low head levels	• Special Study in WRMP • Feasibility Study	• Completed design and construction	Future	Future ($1,600,000)
4. Encourage homeowners to incorporate LID techniques, use of alternative landscape designs and promote infiltration	• Available information • Example projects (Heart of the City – Black Dog Watershed)	• Implemented project	2002	$30,000 Matching funds from MEP Grant
5. Actively implement a control program to minimize spread of E. watermilfoil	• Experience of other communities • Vendors • Recreation, fish and wildlife goals • Policies of this WRMP	• Treatment (as needed) and annual assessment	Annual	See Table 31 #1

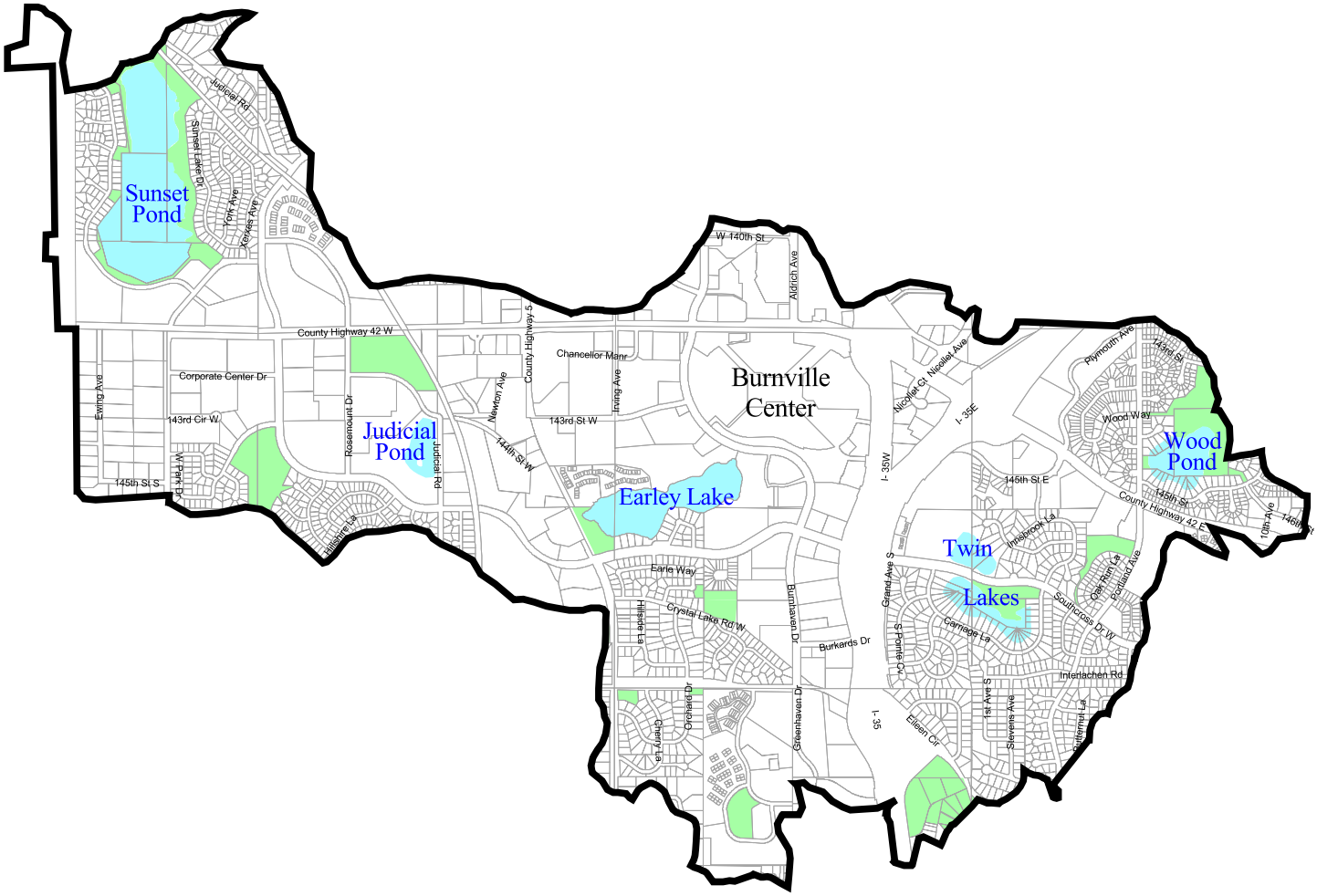


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 2,488 Acres



SEH	6/11/02 subwtrshd.apr bd	**Sunset Pond Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 31

SUNSET POND SUBWATERSHED

The Sunset Pond Subwatershed includes four catchments: Wood Park Pond; Twin Lakes; Earley Lake; and Sunset Pond. Except for Wood Park Pond, which drains into Earley Lake, the remaining water bodies comprise a major portion of Crystal Lake's outlet system. Figure 31 illustrates the Sunset Pond Subwatershed.

As described in the Watershed Assessment Section, historic high water levels on Crystal Lake resulted in the construction of a gravity outlet through Twin Lakes, to Earely Lake and ultimately to Sunset Pond. Sunset Pond creates significant peak flow reduction. The dam across the north end of the pond dampens the effect of large storms and reduces the size of the downstream conveyance system. Of the waterbodies within the Sunset Pond subwatershed, only Sunset Pond is considered to be a strategic water resource by the BDWMO. Each of these four catchments is discussed in more detail in the following pages.

Wood Pond Catchment

Wood Pond lies "off-line" of the Crystal Lake outlet system. The pond is located northeast of Earley Lake and is positioned to receive runoff only from its' own direct contributing area. The 9-acre pond has a contributing area of 160 acres, or a watershed to lake area ratio of almost 18 to 1. The maximum depth of the pond is 15 feet. Wood Lake is used primarily for canoeing and fishing. There is no public beach or boat landing on the lake.

In the mid-1990's, a citizen-driven study was completed by the City. The study addressed water quality and water levels concerns. One major issue was that ponding easements did not exist over the properties adjacent to the pond. As a result, easement purchases were executed with the property owners.

In October 1997, the Lake was treated with aluminum sulfate (alum). From April 1996 to October 1997, pre-alum treatment sampling identified a mean total phosphorus value of 51.2 µg/l. Similar post-monitoring from April to October 1998 showed total phosphorus values of 30.8 µg/l. Over the same one–year period, chlorophyll a concentrations actually increased while overall transparency improved only slightly. The monitoring period also showed above average precipitation, which often produces an increased watershed loading and related poorer quality.

The 1998 summertime grade for the pond improved from less than 2 meters of clarity to over 2 meters of clarity, but the values returned to less than 2 meters level in 1999. Year 2000 monitoring (Metropolitan Council, 2001) shows nutrient and Secchi disc readings revert to pre-project levels in Wood Pond. Secchi disc transparency in 2000 averaged 1.3 meters while the goal for Wood Pond should be 1.7 meters. Quantity issues have been addressed through the purchase of easements. Table 62 summarizes lake quality statistics, water use restrictions, and fish population data for Wood Pond.

Table 62 - Wood Pond Data

Lake Quality Statistics[1]		
DNR Number		19-0024
Total Suspended Solids - TSS	mg/l	52
Total Phosphorus- TP	µg/l	39.8
Chlorophyll a	µg/l	14.5
Water Clarity – Secchi Disk	Meters	1.5
Carlson's Trophic Status Index	TSI	53.2
Watershed Area	Acres	160
Lake Area	Acres	9
Maximum Depth	Feet	15
Average Depth	Feet	N/A
Public Access		None
WMO Classification		N/A
City Classification		Improvement
Inlet/Outlet		Outlets to Twin Lakes
Fish Population		
Rainbow Trout	Not present	
Tiger Muskie	Not present	
Northern Pike	Not present	
Bluegill Sunfish	Fair	10.3 (11.67)
Largemouth Bass	Not present	
White Crappie	Good	8.3 (2.74)
Black Crappie	Very Good	19.0 (2.67)
Yellow Perch	Not present	12.0 (8.0)
Walleye	Stocked in 2005	
Channel Catfish	Not present	

1. Taken from year 1997-1999 data. Clarity data also taken from 1970-1996 data

N/A = Not Available

Typical Ranges – North Central Hardwoods Ecoregion:

TSI 46-54

Total Phosphorus 23-50 µg/l

Water Clarity 1.5—3.2 m

Chlorophyll a 5-22 µg/l

Fish numbers compared to state wide average (in parenthesis). Source: DNR, 2000.

Water Use Summary for Wood Pond

- Motorized vehicles, snowmobiles, and all terrain vehicles are prohibited.
- Electric motors allowed.

Source: Burnsville Ordinance Chapter 8-12 and 6-5; and DNR website at:
http://www.dnr.state.mn.us/information education/water_safety/surface_use.pdf
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf

Twin Lake Catchment

Twin Lake, North Twin and South Twin, covers a total of about 18 acres. These basins are very shallow and have minimal available water quality data. South Twin Lake is the primary receiving water for Crystal Lake's discharge. The Special Study discussed in Appendix A describes a proposal to further increase the capacity of the Crystal Lake discharge. In addition to this proposed improvement, North Twin's outlet structure should also be modified to increase the weir length from 12 feet to 20 feet. Increasing the weir will prevent the Crystal Lake improvements from adversely affecting high water levels and duration on South and North Twin. The recommended improvements do not increase the flood potential for downstream waters including Earley Lake and Sunset Pond.

Any increase in Crystal Lake water quality should favorably effect the quality in Twin Lake. In general, Twin Lake would have very limited active recreational suitability. The 2002 WRMP stated that the water quality goal should be 0.9 meters based on conditions at the time. However, based on the desire for better quality and in consideration of proposed improvements in contributing drainage areas, the clarity goal was established at 1.7 meters.

Since that time the City has separated the management of Twin Lake into two parts and created unique goals for South Twin and North Twin. A goal of 1.7 meters has been retained on North Twin, while a goal of 1.4 meters has been established for South Twin.

The City has been experimenting with barely straw bundles at the inlet to South Twin. The chemical reaction between the water and the straw is hoped to control filamentous algae which is prevalent on South Twin.

Quantity issues will be addressed by the outlet improvements and similar improvements at Crystal Lake, Earley Lake and future controls from the "golden triangle" tributary northwest of North Twin. Table 63 summarizes lake quality statistics, water use restrictions, and fish population data for Twin Lake.

Table 63 - North and South Twin Lake Data

Lake Quality Statistics[1]		
DNR Number		19-0028
Total Suspended Solids - TSS	mg/l	N/A
Total Phosphorus- TP	µg/l	70
Chlorophyll a	µg/l	18.7
Water Clarity – Secchi Disk	Meters	1.7
Carlson'sTrophic Status Index	TSI	1.0
Watershed Area	Acres	N/A
Lake Area	Acres	18
Maximum Depth	Feet	N/A
Average Depth	Feet	N/A
Public Access		None
WMO Classification		N/A
City Classification		Improvement
Inlet/Outlet		Inlet from Crystal and Wood; outlet to Earley
Fish Population – Not Available		
Rainbow Trout		
Tiger Muskie		
Northern Pike		
Bluegill Sunfish		
Largemouth Bass		
White Crappie		
Black Crappie		
Yellow Perch		
Walleye		
Channel Catfish		

1. 1999 data. Clarity data from most recently available three year average.

N/A = Not Available

Typical Ranges – North Central Hardwoods Ecoregion:

TSI	46-5
Total Phosphorus	23-50 µg/l
Water Clarity	1.5-3.2 m
Chlorophyll a	5-22 µg/l

Water Use Summary for Twin Lakes

- Motorized vehicles, snowmobiles, and all terrain vehicles are prohibited. Electric motors allowed.
- No operation of watercraft from 10:00 p.m. to 5:00 a.m.

Source: Burnsville Ordinance Chapter 8-12 and 6-5; and DNR website at:
http://www.dnr.state.mn.us/information
education/water_safety/surface_use.pdf
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.)

Earley Lake Catchment

In the mid-to-late 90's, Earley Lake was rated as a clarity range of less than 1.5 meters on the Metropolitan Council's system. Due to its position in the watershed, Earley Lake receives a considerable inflow of urban runoff and pollutant loading. Current efforts are being investigated to divert low flow inlets through treatment devices before reaching the lake. Earley Lake discharges through a downstream pond before reaching Sunset Pond.

Recent development projects adjacent to Earley have been required to meet both rate control and pollutant removal standards for Total Phosphorus and Total Suspended Solids. Though properly mitigated to City standards, continued development in the urbanized watershed will continue to increase both the hydraulic and pollutant loading to the lake.

There has been considerable interest in Earley Lake as expressed by an active homeowners association. The Black Dog WMO Plan indicates that contact recreational activities like swimming are not supported by current lake quality due to excessive algae blooms in mid-to-late summer. The lake is not considered a strategic water resource by the WMO. More in-lake investigation should be undertaken to document lake depths (bathymetry) and the internal loading issues on the lake. A combination of active watershed controls and in-lake considerations may be necessary. Because so much of the contributing watershed is comprised of high value, commercial real estate, watershed controls may be very costly to implement. A goal of maintaining Earley Lake clarity at 1.7 meters is achievable and challenging at the same time. The duration of high water levels on Earley Lake has caused citizen complaints and the upstream drainage system improvements are not expected to increase the problem.

Extended periods of excessive high water levels on Earley Lake have created significant problems for residents. The 28-acre lake has an 878-acre direct contributing area, or a watershed-to-lake-area-ratio of 31:1. Following a flood event in July 2000, interest in developing an immediate solution to the Earley Lake problem was renewed as one of the top priorities for storm water management in the City.

Three major storm sewer outfalls contribute runoff to Earley Lake. These outfalls include the East Outfall, the South Outfall, and the West Outfall. The East outfall enters Earley Lake from Burnhaven Drive. This storm sewer system collects runoff from the northeastern portion of the Earley Lake direct watershed. The South Outfall enters Earley Lake from Southcross Drive. This storm sewer system collects runoff from the eastern and southern portions of the Earley Lake direct watershed system. It also serves as the outlet storm sewer system for North Twin Lake. The West Outfall enters Earley Lake from County Road No. 5. This storm sewer system collects runoff from the County Road No. 5 corridor. For the critical 1% or 100 year event, the Lake's flood level rises almost 9 feet above the normal water level of 905.5.

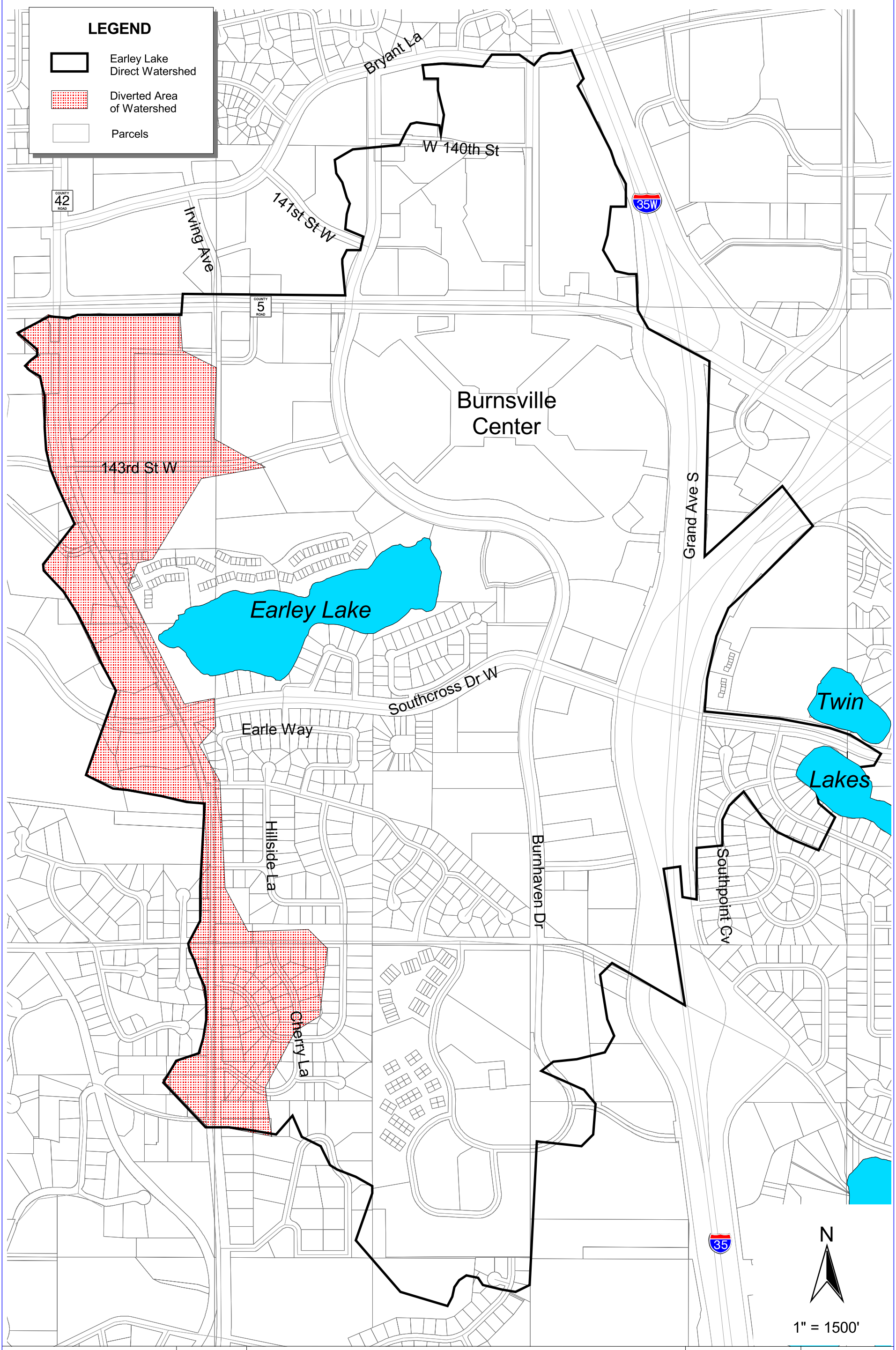
The outlet for Earley Lake is a concrete box structure with three 4 ft wide by 2 ft high openings. The outlet is located on the west side of Earley Lake. The outlet discharges into a 36" storm sewer that carries the water west, underneath County Road No. 5, eventually discharging into Judicial Pond.

In a Feasibility Study entitled Earley Lake Flood Control and Water Quality Improvements, May 29, 2001 (SEH), local storm water diversion to four potential downstream pond sites was evaluated, including new ponds at County Road 5 and east of Judicial Road. The strategy for Earley Lake involves a multi-faceted approach to addressing the issues including a partial diversion of the local subwatershed, an increase in the outlet capacity, and diversion of low flows through pre-treatment basins. Two alternatives from the report were selected by the City Council as capital improvement projects. Hydrologic/hydraulic modeling for Earley Lake assuming both improvements showed a significant reduction in the flood levels for a 100-year storm event. Construction began in the fall of 2001 and was completed in the spring of 2002.

Figure 32 illustrates the area that is diverted by the improvements and Table 64 illustrates the changes in hydrologic response at Earley Lake as a result of the improvements. Table 65 summarizes lake quality statistics, water use restrictions, and fish population data for Earley Lake.

Table 64 - Changes in Hydrologic Response of Earley Lake

	100-YEAR 24 HR EVENT			**100-YEAR 10 DAY EVENT**		
	Peak Inflow	**Peak Elevation (Feet)**	**Change in Elevation (Feet)**	**Peak Inflow**	**Peak Elevation (Feet)**	**Change in Elevation (Feet)**
Existing Conditions	2145 cfs	913.4	-	352 cfs	914.4	-
May 29, 2001 Feasibility Study	1947 cfs	911.8	-1.6	308 cfs	910.7	-3.7
Final Recommended Improvements (SEH, July 25, 2001)	1947	912.3	-1.1	308 cfs	911.6	-2.8



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EARLY LAKE FLOOD CONTROL AND DIVERTED DRAINAGE AREA

FILE NO.
ABURNS9904.00

FIG NO.
32

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Table 65 - Earley Lake Data

Lake Quality Statistics[1]		
DNR Number		19-0033
Total Suspended Solids - TSS	mg/l	57
Total Phosphorus- TP	µg/l	57
Chlorophyll a	µg/l	16.9
Water Clarity – Secchi Disk	Meters	1.7
Carlson'sTrophic Status Index	TSI	56.2
Watershed Area	Acres	878
Lake Area	Acres	28
Maximum Depth	Feet	N/A
Average Depth	Feet	N/A
Public Access		None
WMO Classification		N/A
City Classification		Improvement
Inlet/Outlet		Inlet from Twin; outlet to Judicial, Sunset
Fish Population – Not Available		
Rainbow Trout		
Tiger Muskie		
Northern Pike		
Bluegill Sunfish		
Largemouth Bass		
White Crappie		
Black Crappie		
Yellow Perch		
Walleye		
Channel Catfish		

1. From year 1997-1999 data. Clarity data also taken from 1970-1996 data or most recently available three year average.

N/A = Not Available

Typical Ranges – North Central Hardwoods Ecoregion:

TSI 46-54

Total Phosphorus 23-50 µg/l

Water Clarity 1.5—3.2 m

Chlorophyll a 5-22 µg/l

Water Use Summary for Earley Lake

- Motorized vehicles, snowmobiles, and all terrain vehicles are prohibited.
- Internal combustion engines are prohibited, electric motors are allowed.
- No operation of watercraft from 10:00 p.m. to 5:00 a.m.

Source: Burnsville Chapter 8-12 and 6-5; and DNR website at http://www.dnr.state.mn.us/information education/water_safety/surface_use.pdf).
For a summary of state boating and other water use laws see also http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.)

Judicial Pond Catchment

Judicial Pond lies west of Earley Lake, buffering upstream discharges before draining north to Sunset Pond (see Figure 31). Based on improvements to be made to the Earley Lake outlet system, Judicial Pond is expected to experience flood levels higher than experienced in the past. Table 66 illustrates the expected change in hydrologic response based upon the upstream improvements (fall 2001).

Table 66 - Changes in Hydrologic Response at Judicial Pond

	100-year 24 hr Event			100-year 10 day Event		
	Peak Inflow	**Peak Elevation (feet)**	**Change in Elevation (feet)**	**Peak Inflow**	**Peak Elevation (feet)**	**Change in Elevation (feet)**
Existing Conditions	500 cfs	897.0		108 cfs	897.1	
May 29, 2001 Feasibility Study	510 cfs (est)	898.9	+1.9	115 cfs (est)	899.3	+2.2
Final Recommended Improvements (SEH, July 25, 2001)	510 cfs (est)	898.2	+1.2	115 cfs (est)	898.6	+1.5

From a water quality perspective, Judicial Pond should be managed as a storm water detention facility. Its main function should continue to be to dampen the effect of upstream hydrologic and pollutant loading to minimize impacts to the downstream system.

Judicial Pond does not have a low natural overflow. The pond is served by a large storm sewer system on the north side. However, should the City receive an excessive rainfall event or if the outlet would become partially blocked, the pond would eventually rise to a level that would overtop Judicial Road to the east and could eventually threaten adjacent commercial properties. Existing development to the northeast is high enough in elevation where it would not be threatened in such a situation.

Sunset Pond Catchment

Sunset Pond covers about 60 acres, with a 1,272-acre contributing watershed, or a watershed to lake area ration of 21:1. The pond has a maximum depth of about 9 feet; many areas have a depth of less than 4 feet. The outlet drains north through the Rudy L. Kraemer Nature Preserve and the Sue Fischer Memorial Youth Athletic Complex, where low flows are diverted into water quality ponds and wetland complexes.

The pond is considered to have clarity greater than 1.5 meters on the Metropolitan Council's system. The recreational suitability would indicate that activities like

swimming are considered to be impaired. The pond's history and purpose in the overall drainage system must be considered when developing a management strategy for the Pond. The Black Dog WMO estimates that the total Phosphorus loading is expected to increase by over 60 percent without additional treatment. The resulting in-lake total phosphorus concentration could increase by more than 16 percent.

Intensive efforts to improve the pond are probably not warranted when one considers the fact that this is a created and not a natural water body, and that quality is "average". However, Sunset Pond should be monitored more closely to develop a more significant data set from which to develop future trend analysis. The City's water clarity goal areas established as 1.7 meters. Because the BDWMO action level for Sunset Pond of 1.4 meters is somewhat lower that the City's clarity goal, the City if committed to working with the WMO to determine if the 1.7 meter goal is appropriate. As part of the cooperative process for reaching an agreement on a clarity goal, the City and BDWMO with work together to prioritize implementation projects in the watershed.

The City's first comprehensive drainage plan (Barr, 1966) addressed extreme fluctuations in water level on Crystal Lake. The City ultimately decided to install a deep gravity storm sewer outlet. The next major hurdle was to construct a large lake/pond north of County Road 42 near the Savage City border. The "new" Sunset Pond would accepted the surface water from the homes and businesses in west central Burnsville and also the outflow of water from Crystal Lake. The development of Sunset Pond required a dam to be built to hold back the water. Shortly after completion of Sunset Pond the downstream pipes were installed and the Crystal Lake outlet was finally in-place. The dam represents a flooding hazard for downstream properties if not properly inspected and maintained.

Table 67 summarizes lake quality statistics, water use restrictions, and fish population data for Sunset Pond.

Policies and Implementation Plan

Tables 68 and 69 present the City's Action Plan and Implementation Actions, respectively, that have been developed to achieve the purpose and goals for the Sunset Pond Subwatershed.

Table 67 - Sunset Pond Data

Lake Quality Statistics[1]		
DNR Number		N/A
Total Suspended Solids – TSS	mg/l	52
Total Phosphorus- TP	µg/l	50.1
Chlorophyll a	µg/l	10.8
Water Clarity – Secchi Disk	Meters	2.4
Carlson'sTrophic Status Index	TSI	54.6
Watershed Area	Acres	1272
Lake Area	Acres	60
Maximum Depth	Feet	N/A
Average Depth	Feet	N/A
Public Access		None
WMO Classification		Category II
City Classification		Improvement
Inlet/Outlet		Inlet from Twin; outlet to Judicial, Sunset
Fish Population- Not Available		
Rainbow Trout		
Tiger Muskie		
Northern Pike		
Bluegill Sunfish		
Largemouth Bass		
White Crappie		
Black Crappie		
Yellow Perch		
Walleye		
Channel Catfish		

1. Data taken from 1997-1999 data. Clarity taken from 1970-1996 data or most recently available three year average.
N/A = Not Available
Typical Ranges – North Central Hardwoods Ecoegion:
TSI 46-54
Total Phosphorus 23-50 µg/l
Water Clarity 1.5—3.2 m
Chlorophyll a 5-22 µg/l

Water Use Summary for Sunset Pond

- Motorized vehicles, electric trolling motors, snowmobiles, and all terrain vehicles are prohibited.
- No boating on southern half as marked by buoys or signs (waterfowl nesting area).
- No operation of watercraft from 10:00 p.m. to 5:00 a.m..

Source: Burnsville Ordinance Chapter 8-12 and 6-5; and DNR website at:
http://www.dnr.state.mn.us/information and education/water_safety/surface_use.pdf).
For a summary of state boating and other water use laws see also:
http://www.dnr.state.mn.us/information_and_education/water_safety/boatingguide2001.pdf.).

Table 68 - Sunset Pond Subwatershed Action Plan

Subject:

- Sunset Pond Subwatershed Management Plan. (Wood Park Pond, Twin Lakes, Earley Lake, Judicial Pond, Sunset Pond)

Purpose:

- Manage the water resources of the Sunset Pond Subwatershed consistent with their rankings.

Goal:

- Improve or maintain the quality and rates of runoff to support the intended uses. Water clarity goal for all lakes listed below is noted.

Lake Classification and Specific Goals (City Wetland Classification, where noted):

BDWMO: Sunset Pond; Strategic, Category II, Action Level = 1.4 meters

Burnsville: Sunset Pond; Management, (Goal = 1.7 m)
Wood Park Pond; (Goal = to be determined)
Twin Lakes; (Goal = 1.7 m North Twin, 1.4 m South Twin)
Earley Lake; (Goal = 1.7 m)
Judicial Pond; Management, (Goal = 1.7 m)

Intended Uses:

- Supports indirect recreational activities such as boating and fishing. Provides wildlife habitat.

Problems	Solutions
1. High nutrient loading to Twin Lakes from contributing subwatersheds continue to cause deterioration in water quality.	➢ 1. Prepare a nutrient loading study of Twin Lakes to identify the most cost effective means for minimizing loading to the lake consistent with it's classification.
2. Increase runoff and pollutant loading into North Twin Lakes from planned developed to the northwest and from the "golden triangle" area may cause further quantity and quality problems.	➢ 2. Develop conventional and Low Impact Development practices to minimize the rate, volume and quality impacts to North Twin Lakes.
3. Existing storm water outfalls to Earley lake from Burnsville Center and other commercial areas do not allow for any rate, volume or water quality control, or containment of winter sand/salt applications.	➢ 3. Work directly with commercial property owners, and specifically with Burnsville Center to develop Low Impact, on-site stormwater techniques targeted at reducing rate, volume and pollutant loading to Earley Lake.
4. Extended duration of high water levels on Earley Lake created a potential for flood damages.	➢ 4. Based on the completed Earley Lake feasibility study, improvements will be completed in 2002.
5. Judicial Pond's high overland outlet may result in flooding of property east of Judicial Road in response to extreme rainfall events.	➢ 5. Implement appropriate measures to establish first floor elevations and other appropriate flood proofing measures to protect properties east of Judicial Pond/Judicial Road.
6. Sunset Pond dam poses a risk to downstream properties.	➢ 6. Prepare a dam safety inspection and dam break analysis to minimize the downstream risks.
7. For maintenance purposes the Sunset Pond outlet structure cannot be easily regulated to shut off downstream discharge due to the in place concrete skimmer.	➢ 7. Design and construct improvements to the Sunset Pond outlet structure to enhance the ability to shut off downstream discharge for maintenance purposes.

Table 69 - Sunset Pond Catchment Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1 Prepare a nutrient loading study of Twin Ponds to identify the most cost effective means for minimizing loading to the lake consistent with it's classification	• Existing watershed and storm sewer maps • Physical data of Twin Ponds • P8 Urban Catchment model • Lake Response mode • Bathymetric information for Wood, Earley, North and South Twin	• Completed study and recommendations	2006	$30,000
2 Develop conventional and Low Impact Development practices to minimize the rate, volume and quality impacts to North Twin Lake.	• Future development agreements for area north and west of North Twin • Soils and topographic data • Appendix B of this plan • Incentives	• Development Agreements • Implemented Practices	Future (As required)	NA
3 Work directly with commercial property owners, and specifically with Burnsville Center to develop Low Impact, on-site stormwater techniques targeted at reducing rate, volume and pollutant loading to Earley Lake.	• Future development agreements • Soils and topographic data • Storm sewer and utility maps • Appendix B of this plan • Incentives • Explore grant opportunities	• Development Agreements • Grant application(s) • Implemented Practices	2003 2004 2006	NA NA $150,000
4. Implement appropriate measures to establish first floor elevations and other appropriate flood proofing measures to protect properties east of Judicial Pond/Judicial Road.	• Topographic maps • Storm sewer base maps • Site-surveys • Proposed development plans • Property acquisition	• Completed improvements	2004	See Table 13 #6
5. Prepare a dam safety inspection and dam break analysis to minimize the downstream risks.	• State dam Safety rules • DAMBREAK model • Construction Plans • GIS- Downstream land use and flow path(s)	• Completed field investigation • Completed modeling • Completed report	2005 2007 2007	NA $10,000 $8,000
6. Improvements to the Sunset Pond and Earley Lake outlet structure to shut off downstream discharge on a short term basis to conduct maintenance activities.	• Construction Plans • Public Works Maintenance Staff • Hydraulic model • Dam break analysis	• Complete Plans • Construct Improvements	2004 2004	$15,000 $75,000
7. Encourage future land owners / development to incorporate storm water treatment on adjacent parcels	• City staff	• Implemented treatment practices	Ongoing	NA
8. Twin Lakes Outlet Improvements	• Construction plans • Public works staff • Hydrologic/hydraulic modeling	• Increased discharge capacity at low levels	2003	$250,000
9. Earley Lake Improvements	• Feasibility study (SEH 2001) • Construction plans	• Reduction in flood levels and frequency	2002	$300,000

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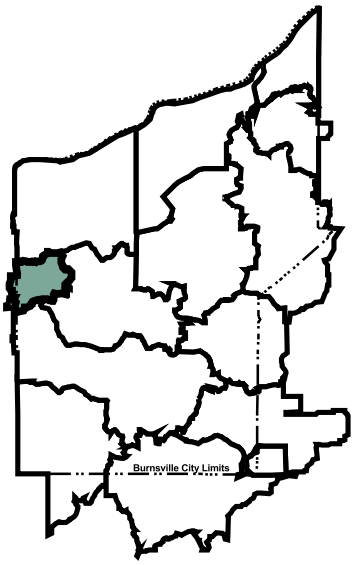
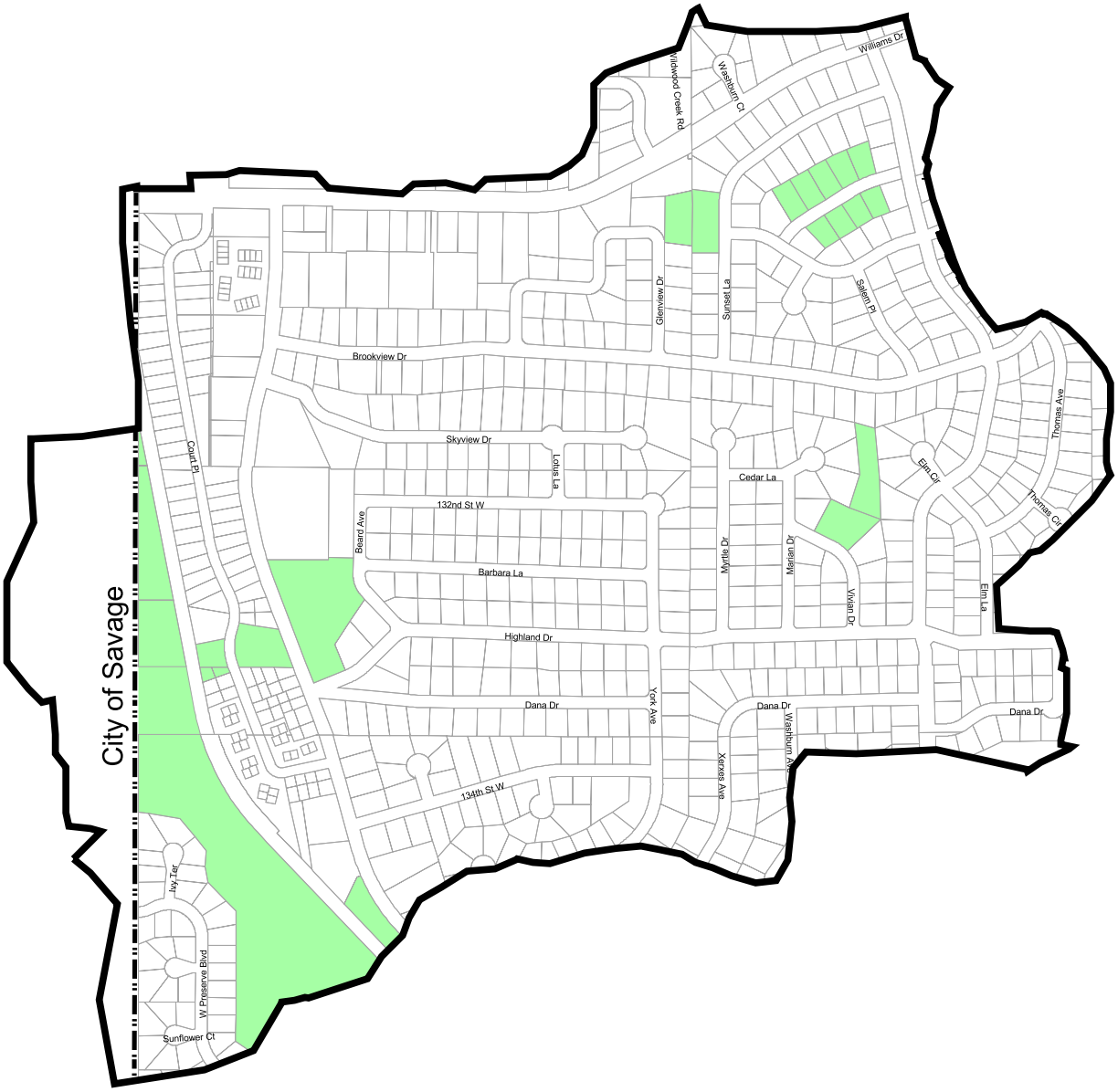


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

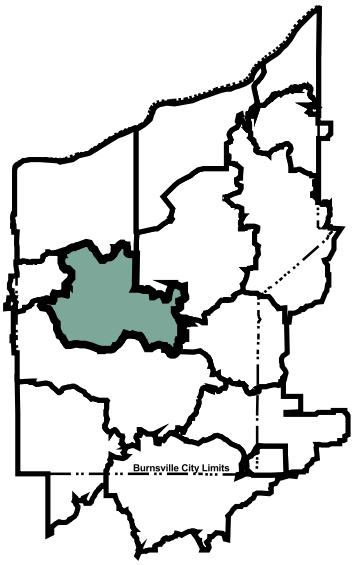
Watershed Area = 400 Acres



SEH	6/11/02 subwtrshd.apr bd	**Sunset Pond Outlet Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 33

SUNSET POND OUTLET SUBWATERSHED

The Sunset Pond Outlet Subwatershed lies directly north of and downstream of Sunset Pond. The entire subwatershed is tributary to the Nature Preserve Catchment within the Northwest Subwatershed in the Lower Minnesota River Watershed District. There are no significant water resources issues within this 400-acre subwatershed. Issues relative to the upstream dam that forms Sunset Pond are addressed in the Sunset Pond Implementation Plan. The Sunset Pond Outlet Subwatershed is illustrated in Figure 33.

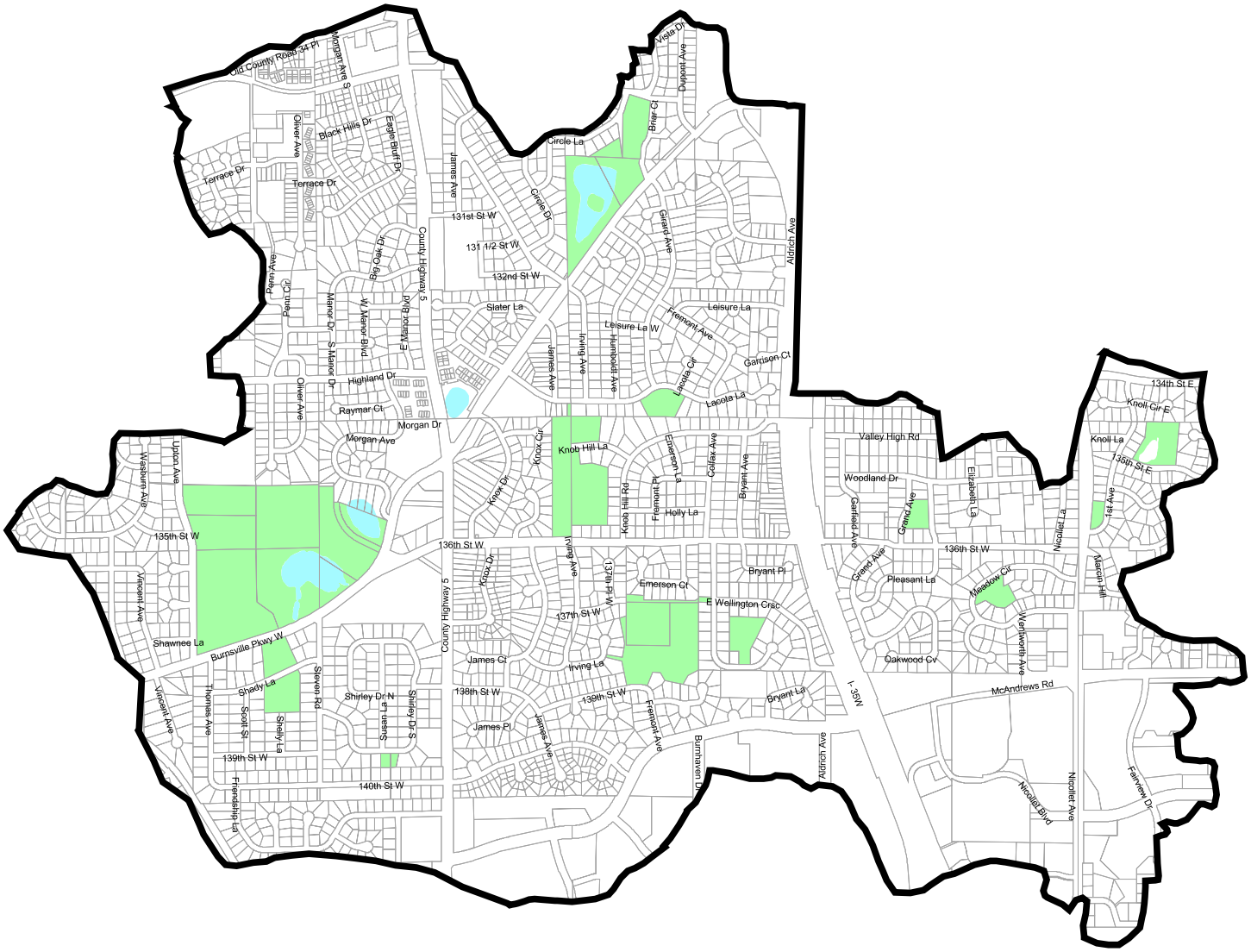


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 1,671 Acres

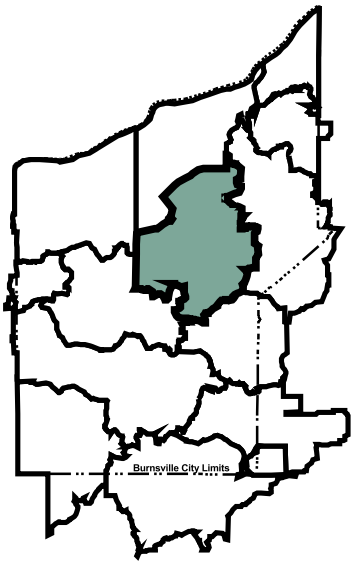


SEH	6/11/02 subwtrshd.apr bd	**West Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 34

WEST SUBWATERSHED

The West Subwatershed covers 1671 acres in the west central part of the Black Dog Watershed. The Subwatershed extends to Co. Rd. 42 to the south and to I35W in the east. There are several small catchments within the subwatershed, but there are no significant water resources. The area between I35W and I35E has several small storm water ponds. West of I35W, there are few ponding areas. The West Subwatershed is illustrated in Figure 34.

Runoff directed towards Co. Rd. 5 ultimately discharges into the Industrial Park Pond catchment in the Northwest subwatershed of the Lower Minnesota River watershed.

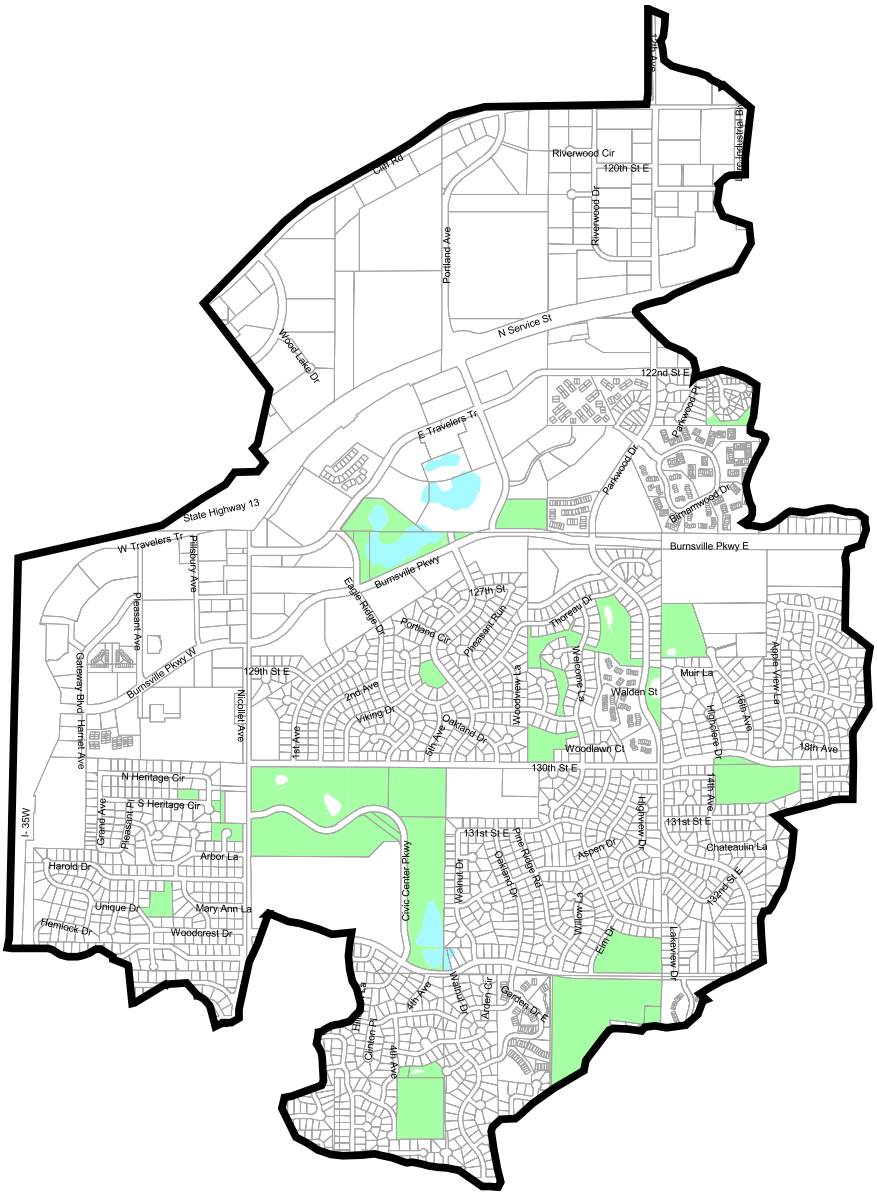


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 2,133 Acres



SEH	6/11/02	**Central Subwatershed Burnsville, MN**	FILE NO. ABURNS9904.00	
	subwtrshd.apr bd		FIG NO. 35	

CENTRAL SUBWATERSHED

The Central Subwatershed is generally centered about TH 13 and County Road 5. The Central Subwatershed drains into the Black Dog Fen Catchment of the Black Dog Lake Subwatershed in the Lower Minnesota River Watershed. The most recognizable downstream natural resource is Black Dog Lake lying within the Lower Minnesota River Watershed. The Black Dog Water Management Organization's draft Watershed Management Plan (2002) also identifies the Black Dog Fen as a downstream resource to be recognized and protected. The BDWMO Plan encourages cities to reduce discharge rates within trout stream and fen watersheds whenever possible, with the goal of reducing discharge rates to predevelopment levels or lower. The Central Subwatershed is illustrated in Figure 35.

Heart of the City Sub-Catchment

The Heart of the City (HOC) Town Center lies within the City's Central Subwatershed, generally centered about TH 13 between County Road 11 and I35W.

The HOC Design Framework Manual (DSU) describes innovative storm water management techniques that are intended to minimize the reliance on conventional, centralized storm sewer collection systems and centralized detention pond treatment. As each individual block develops, site specific techniques that take full advantage of the high infiltration rates of the underlying soils will be employed. These "Low Impact Development" techniques will be required to mimic existing hydrology for the 1.5 inch rainfall events. The resulting goal will be to approach zero runoff for these frequent "water quality" storm events.

A separate document was prepared for the HOC area storm water management approach. The document Storm Water LID Guide Manual for the Heart of the City provided a summary of specific "Low Impact Development" (LID) techniques and a process for evaluating LID practices throughout the City. Techniques presented and discussed in the Manual are categorized according to the type of surface or area the practice may be used on (e.g., streets, boulevards, park are, roof tops). Developers can use the guide to select LID practices for a given project and a worksheet process was provided to help evaluate the level of runoff captured by the practices.

A conventional system of pipes and ponding will be available for the more infrequent, large volume/duration rainfall events (l00 year or 1-percent event). The conventional system will utilize in-place drainage system infrastructure and will also include the development of a regional detention basin at the TH 13 and Nicollet Avenue intersection. (See Figure 36.)

Table 70 summarizes the anticipated before and after conditions for the 40-acre Heart of the City Town Center development.

Table 70 - Heart of the City Low Impact Development Hydrology Summary

	Pre-Development Conditions	Post-Development Conditions
Impervious Cover [1]	70.5%	92.5%
100 Year Peak Discharge from 40 acre site [2,3] (CFS)	194	214
100 Year Peak Discharge Leaving Site (CFS)	329	87
1.5 inch Event Peak Discharge[4] (CFS)	25	0
Pollutant Loading		
Total Phosphorus[5]	4	90.4
Total Suspended Solids[5]	24.7	63.3

1. See EAW, 2001.
2. 100 year, 24 hour rainfall, 6.0", Type II Distribution.
3. Does not account for volume control due to low impact development techniques. Discharge into the regional pond.
4. Post development conditions require zero runoff for the 1.5 inch storm.
5. Units in % Removal Efficiency (i.e. for storm water carrying 100 ppm TSS, 90.4 ppm would be removed). Calculated after the 2nd cell of the regional ponding system at Nicollet/TH 13.

Existing Conditions

The 40-acre site does not have storm water ponding features. Runoff generally leaves the site in three ways on shown in Figure 36. The southern-most edge of the site drains south towards Burnsville Parkway. A storm sewer system in Burnsville Parkway collects runoff before discharging to the east into DNR Protected Wetland 114W. The wetland lies east of and outside of the Heart of the City Catchment.

The vast majority of the site drains to the north towards Highway 13. Existing storm drainage systems in Nicollet Avenue, 126th Street and Pillsbury Avenue collect local runoff in the southeast quadrant of the Highway 13/Nicollet Avenue intersection before discharging under Highway 13 and continuing north towards Cliff Road and the existing railroad grade. Excess runoff volumes at Nicollet and Highway 13 intersection will over-top an existing ditch block in the ditch on the south side of Highway 13, sending storm water east to the low point where it ultimately discharges north under Highway 13. Storm water ultimately discharges under the railroad grade approximately 2,000 feet east of the Cliff Road/Railroad intersection. Storm flows then meander through undeveloped lowlands before reaching Black Dog Lake. The Black Dog Fen Wetland Complex is generally located in this area. The exact location of the remnant Fen is not public information so that the resource can be protected. The Minnesota Department of Natural Resources can however confirm the existence and location of the remnant fen.

Through the use of LID techniques, reliance on the conventional centralized collection and treatment of storm water can be minimized. However, because the LID

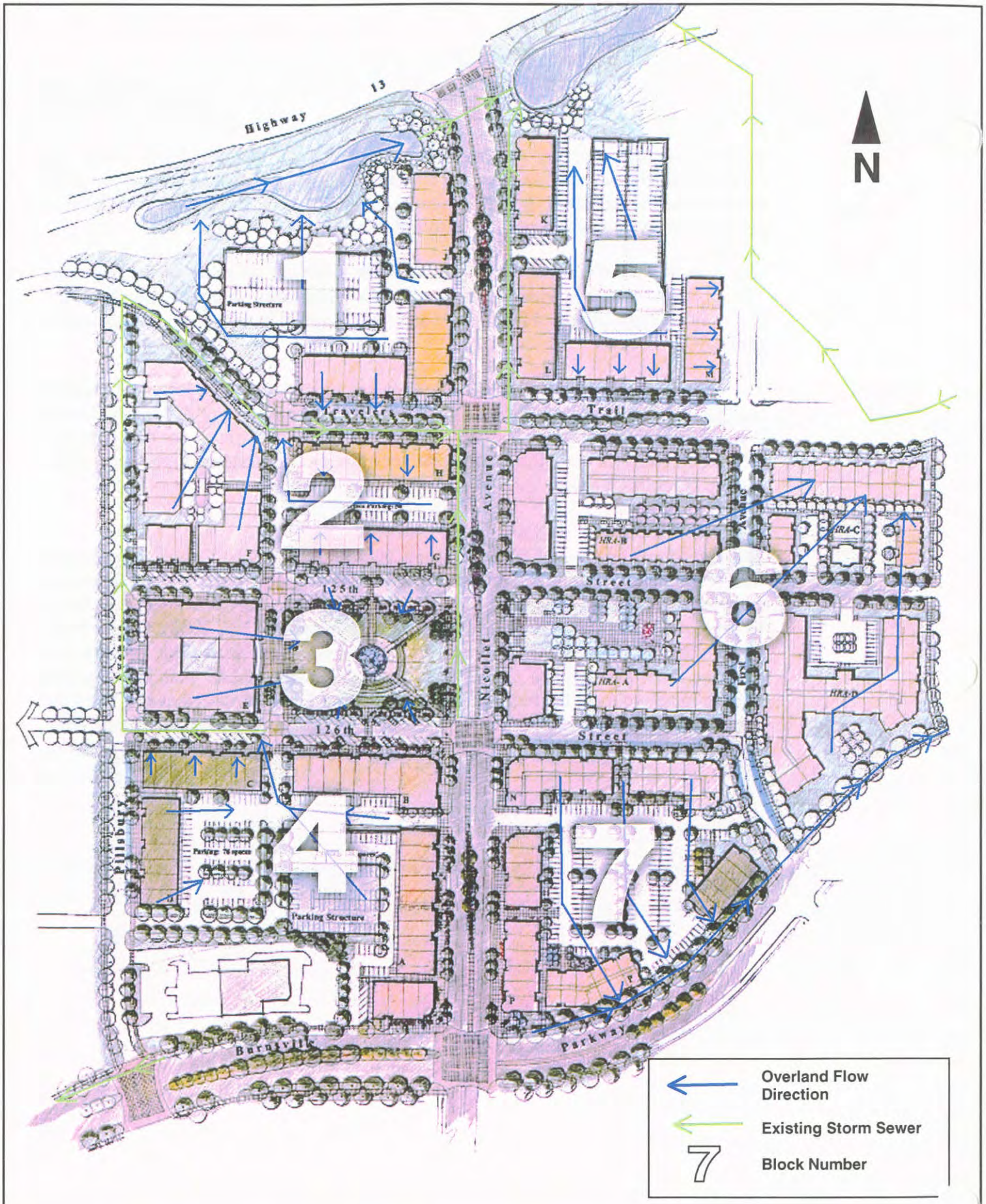
elements are site specific, and will be developed on a block-by-block basis, the conventional storm water management system for the HOC Town Center project does not consider the benefit of the LID practices. In other words, the conventional system provides for redundancy in terms of rate and volume control from the site.

The proposed pond site for the project is in the southeast quadrant of the Highway 13/Nicollet Avenue intersection. The pond will be developed within existing MnDOT Highway 13 right-of-way. Final design and land acquisition will be coordinated with MnDOT.

The design approach will rely on methodologies identified in the document entitled Low Impact Development Design Strategies: *An Integrated design Approach* (Prince George's County, Maryland, June 1999). The techniques rely on non-intrusive infiltration facilities and bioretention practices that can be integrated into each of the surface types listed above.

Future Conditions

The hydrologic conditions of the existing 40-acre HOC Town Center Project, will shift from approximately 70 percent impervious to 92 percent impervious following completion of the development and redevelopment. The City has created a *Storm Water Low-Impact Development Plan and Guide Manual* (SEH, 2002), for the HOC project. A key point of the plan and guide manual is the worksheet process that provides developers with a means to evaluate the extent of LID practice they will need to install to meet the required zero runoff for a 1.5 inch rainfall event. The City was also awarded Metro Environment Partnership (MEP) Grant funds from MCES that were used to help cost-share installation of LID practices in HOC Town Center projects.



Heart of the City, Conceptual Town Center Block Layout and Storm Water Routing Diagram.

Figure 36

Action and Implementation Plans

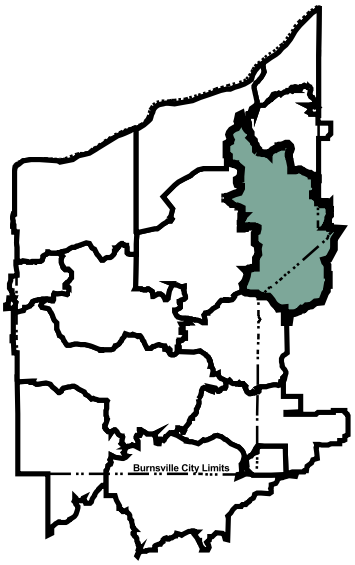
Tables 71 and 72 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the Central Subwatershed.

Table 71 - Central Subwatershed Action Plan

Subject: ➢ Central Subwatershed Management Plan	
Purpose: ➢ Utilize innovative storm water management measures and Low Impact Development techniques to provide rate, volume and quality controls.	
Goal: ➢ Control the rate, volume and quality of storm water runoff to existing levels	
Problems	➢ **Solutions**
1. High level of development allows for minimal use of conventional storm water detention and treatment.	➢ 1a. Implement Low Impact Development Techniques for re-developing areas including Heart of the City. ➢ 1b. Look for opportunities to provide storm water mitigative measures in the downstream Black Dog Fen Catchment.

Table 72 - Central Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Implement Low Impact Development Techniques for re-developing areas including Heart of the City	• Appendix B • Available Incentives • Heart of the City Stormwater Plan (SEH, 2001) • Private developer plans	• Rate and volume control	2002 (Ongoing)	$75,000 Also $75,000 matching MEP Grant
2. Look for opportunities to provide storm water mitigative measures in the downstream Black Dog Fen Catchment	• Historic wetland area at Cliff Road and railroad Grade – Cliff Park	• Completed plans and construction • Health of Fen	2002 Ongoing	See Table 82 #1 NA

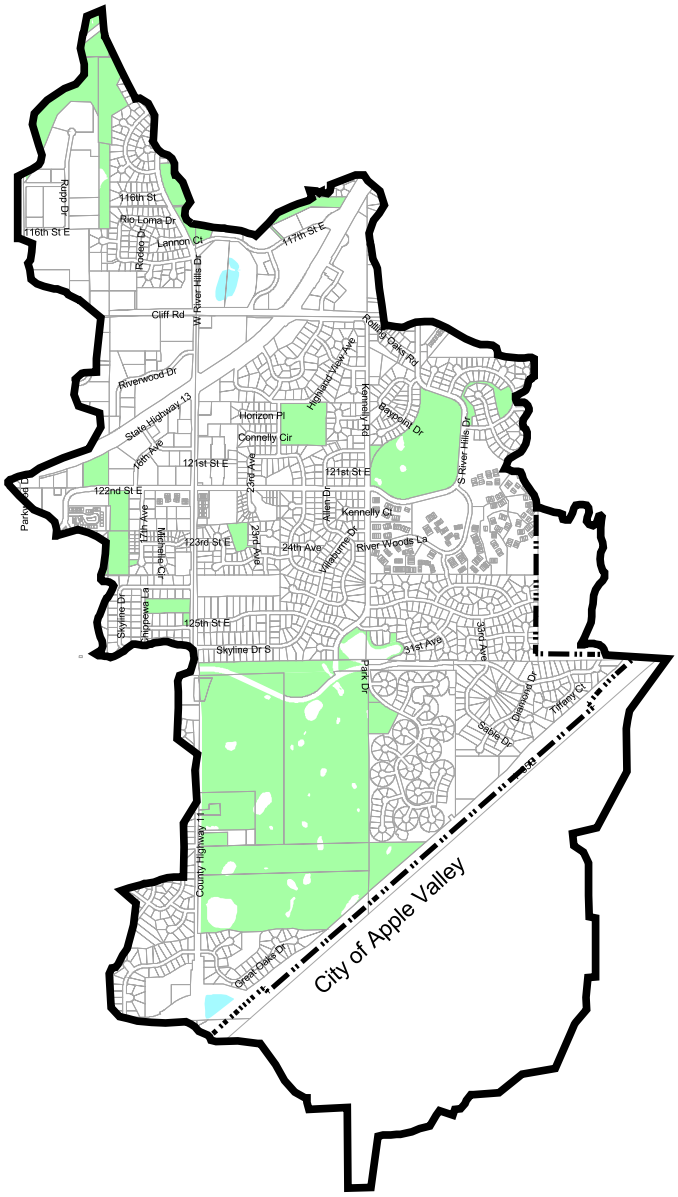


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 2,171 Acres



SEH	6/11/02 subwtrshd.apr bd	**East Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 37	

EAST SUBWATERSHED

The southern portion of this subwatershed is peppered with numerous small natural depressions. Most of the area has a developed storm drainage system that ultimately discharges to the Minnesota River through the Minnesota River Valley National Wildlife Refuge. Portions of the area, like Terrace Oaks Park, are landlocked; that is, they have no outlet. The East Subwatershed is illustrated in Figure 37.

Terrace Oaks Park Catchment

Terrace Oaks Park was the subject of a special study to determine the cause of and solution for problems resulting from high water levels in many of the parks land locked ponds. Extended water levels in the land-locked ponds in the southern most parts of the park had caused flooding, killing native vegetation and impacting the trail systems recreation value.

Terrace Oaks Park lies in the middle of a residential area. It remains an untouched natural area of woods, water and wetlands. Three ponds experience flooding – ponds 5, 6 and 7 illustrated on Figure 38.

Four alternatives to alleviate flooding were investigated, including increased storage, increased discharge, diversion of contributing areas and detention of upstream catchments. A critical elevation of 974 was used because it is the elevation; the three ponds will start to drain downstream into another series of ponds. It is also the elevation where water impacts to existing oaks will begin to occur.

Ultimately, the study recommended that two residential areas (about 58 acres) lying west of County Rd 11 be diverted to the south through a new storm sewer along County Road 11 into an existing pond in the northeast quadrant of I35E and County Rd 11. This pond, built by MnDOT, is also without an outlet. Storm water infiltrates in this location. City staff reports that there are no flooding problems associated with this pond. Additional study of pond levels as they vary with precipitation is needed to best understand the impact of the proposed diversion. A staff gauge should be installed and read on a regular basis.

After further monitoring of the conditions in Terrace Oaks Park, staff has determined major modifications to the drainage system are not necessary. Staff has conducted some short-term improvements and will continue to observe the effects of large rainfall events on the trails and vegetation within the Park.

Down Stream Trout Streams

The Minnesota Department of Natural Resources has identified a potential trout stream segment (trout stream segment #7) that lies just downstream of the Central Subwatershed in the Lower Minnesota River Watershed (see Figure 10 in the Land and Water Resources Inventory.)

Trout streams require unique protection, not just from pollutants but also from water temperature. A cold water stream environment can be altered any time the hydrology of the contributing watershed exceeds the hydrology of a similar area with having less than 10% impervious cover, significantly below what would be considered "normal" urban development. Unfortunately, mitigating for thermal pollution is non-standard and still in the mostly experimental stage. Use of Low Impact Development techniques to reduce the rate and volume of runoff and increase infiltration is one of the best current tools (see Appendix B).

Action and Implementation Plans

Tables 73 and 74 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the East Subwatershed.

Table 73 - East Subwatershed Action Plan

Subject:

- East Subwatershed Management Plan

Purpose:

- Manage the water resources of the East Subwatershed to minimize the downstream impacts of increasing rates and volumes of runoff

Goal:

- Maintain existing rate and volume of discharge from the East. Subwatershed

Problems	Solutions
1. Extended water levels in the land-locked ponds in the southern most parts of the park had caused flooding, killing native vegetation and impacting the trail systems recreation value.	1. Divert two residential areas (about 58 acres) lying west of County Rd 11 be to the south through a new storm sewer along County Road 11 into an existing pond in the northeast quadrant of I35E and County Rd 11.
2. MnDot pond at Co. Road 11 is does not have an outlet; the diversion could cause flooding of the underpass at I35E.	2. Additional study of pond levels as they vary with precipitation is to best understand the impact of the proposed diversion A staff gauge should be installed and read on a regular basis.

Table 74 - East Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Divert two residential areas (about 58 acres) lying west of County Rd 11 be to the south through a new storm sewer along County Road 11 into an existing pond in the northeast quadrant of I35E and County Rd 11	• Dakota County • Existing utilities	• Feasibility Study • Completed plans and construction	2005 2005 2006 2007	$15,000 $345,000 $450,000 $150,000
2. Additional study of pond levels as they vary with precipitation is to best understand the impact of the proposed diversion A staff gauge should be installed and read on a regular basis	• City staff	• Staff Gauge installed • Completion of level analysis	2002 2002-2008	NA NA
3. Rupp Drive storm treatment ponds	• Construction Plans • City Staff	• Completed design and construction	2010	$750,000

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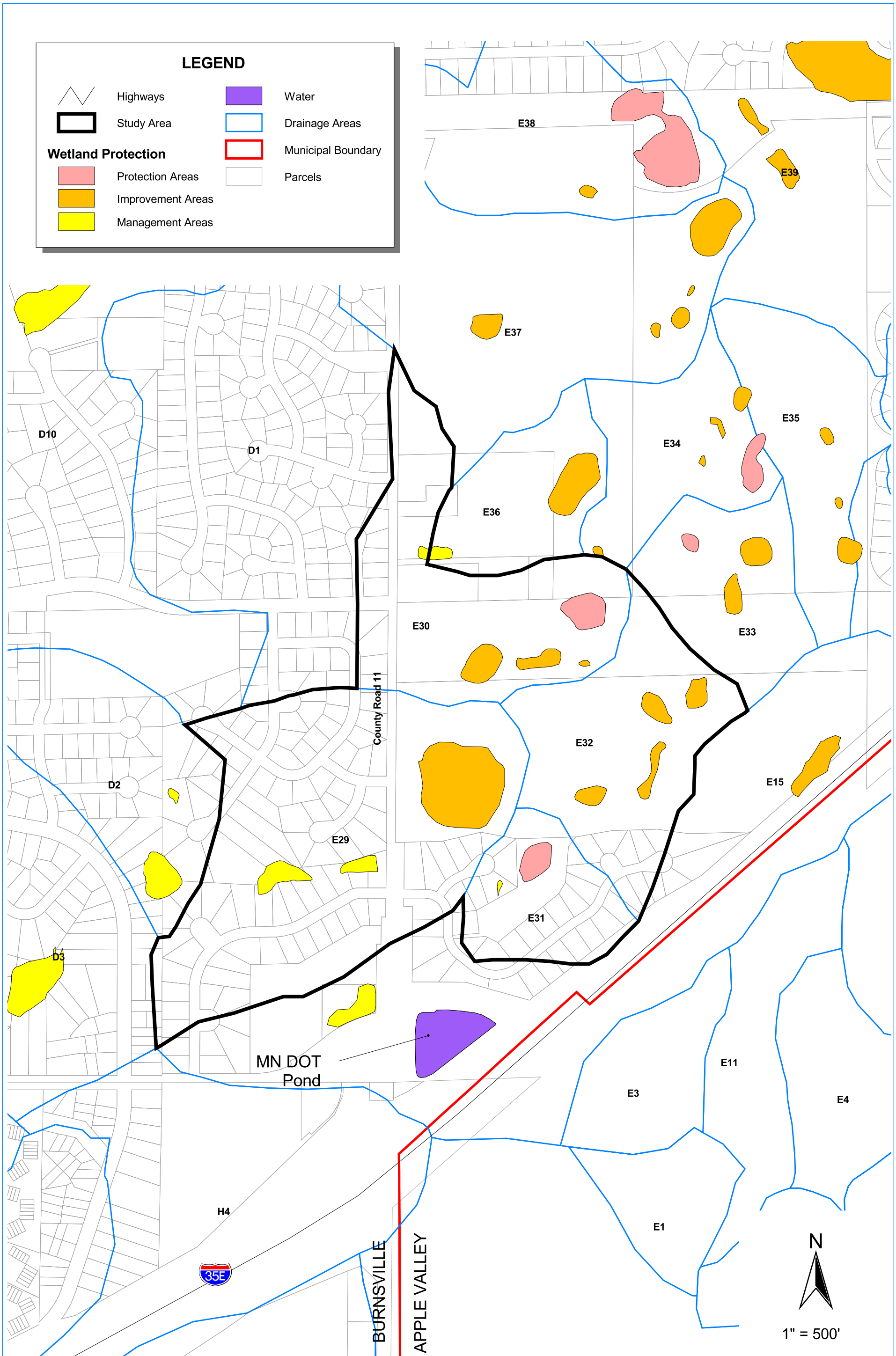

SEH	6/11/02	TERRACE OAKS PARK DRAINAGE AREA	FILE NO. ABURNS9904.00	
	watershed.apr naf		FIG NO. 38	

Back of 11 x 17

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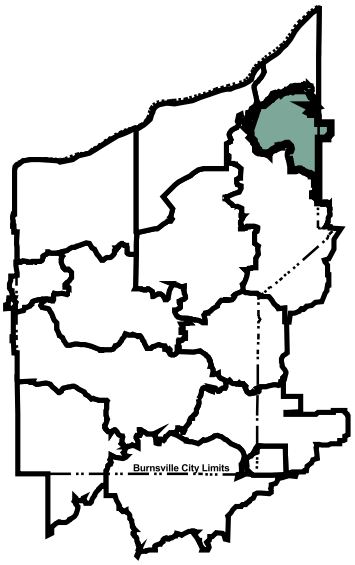
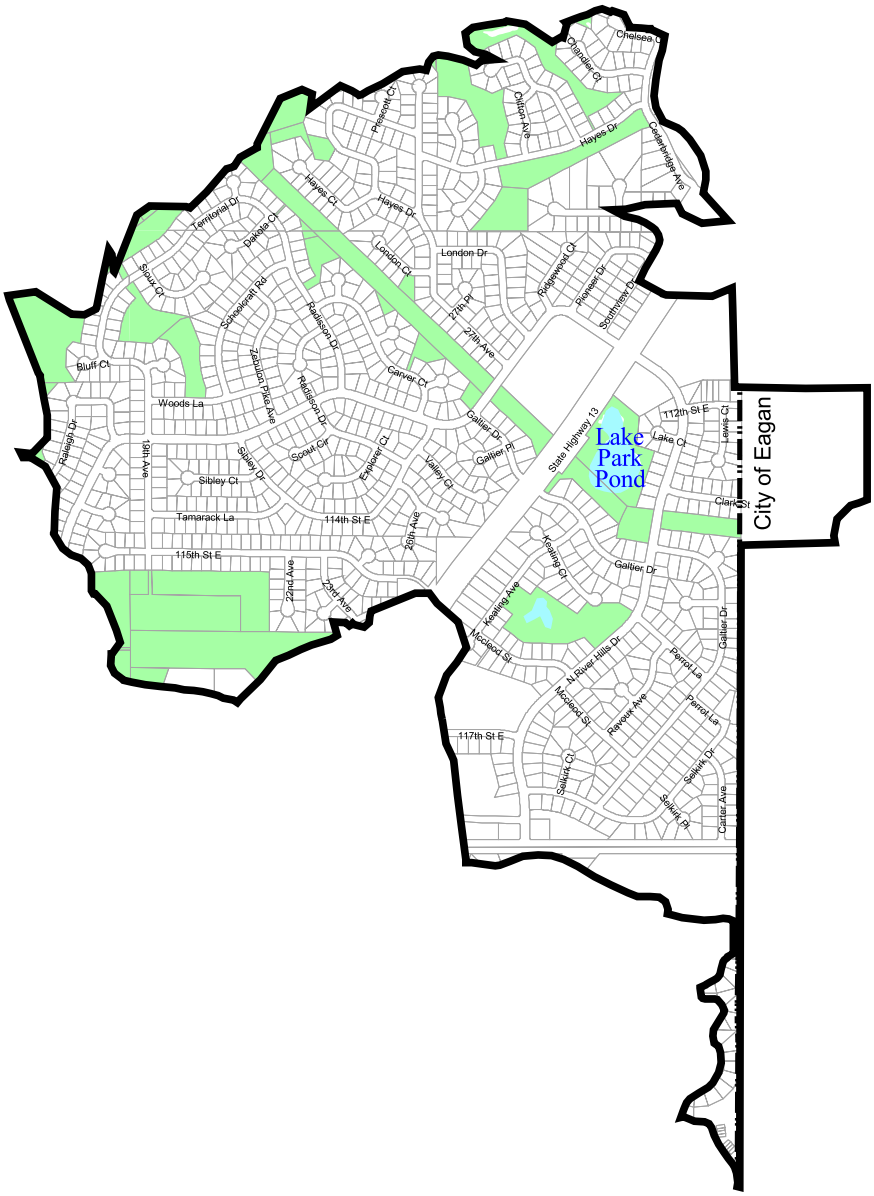


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 761 Acres



SEH	6/11/02 subwtrshd.apr bd	**River Hills Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 39

RIVER HILLS SUBWATERSHED

The Northeast Burnsville Subwatershed coincides with the Black Dog WMO's River Hills Subwatershed. The subdivisions lying southeast and northwest of TH13 ultimately drain through small constructed detention facilities before discharging down the buff into the Minnesota River Valley National Wildlife Refuge and on to the Minnesota River. Because future development related changes are expected to be minimal, the management strategy for this subwatershed should be one of pond maintenance and inspection of outfalls to the refuge. Storm water ponds are classified under the same system used for Burnsville lakes (see Watershed Assessment Section of this Plan). The City's Comprehensive Wetland Protection and Management Plan has established standards for these water bodies including provisions for water level fluctuations and pre-treatment. The River Hills subwatershed is illustrated is illustrated in Figure 39.

A detailed study entitled "*Northeast Burnsville Comprehensive Flood Study*" (SEH, 2001) of the existing storm sewer system in River Hills Subwatershed was completed following an excessive rainfall/runoff event in July 2000 that resulted in localized flooding problems. The area investigated is located north of Cliff Road (County Road 32) and east of Rupp Drive. Eastern and northwestern city limits define the other boundaries of the area. This area is predominantly residential but it also includes parks, schools, and a major highway (TH 13). Figure 40 illustrates study areas.

The main objectives of the field work included:

- Delineating the drainage boundaries;
- Determination of flow directions on all streets and at intersections;
- Identifying low points and high points along each street;
- Documenting the existing drainage system (not including field surveys);
- Document the condition of manholes, catch basins, and other structures of the storm sewer system; and
- Identifying residential areas that experienced significant flood damage during the storm of July 27, 2000, and/or during previous major flood events.

Based on topographic maps and field observations, the area was subdivided into "catchments" defined along major storm sewer systems. Under normal circumstances these catchments are hydraulically independent from each other. Thus, each catchment can be analyzed separately.

Each catchment was further subdivided into subcatchments and the contribution of each subcatchment to the storm sewer line was assessed. The area, slope, length, average width, and percentage of impervious surface have been determined for each subcatchment. Standard TR-55 procedures were carried out to determine the time of concentration for each subcatchment.

According to Dakota County Soil Survey, most of the soils in the area belong to hydrologic class B. Based on TR-55 manual; a curve number of 61 was used for pervious surface showing good grass cover. A conservative value of 40 percent impervious surface was used for residential areas. For parks and other types of open space 10 percent was considered impervious surface.

Storm sewer geometry was collected from City "as built" information. Documentation for a number of storm sewer pipes and structures, some of which are located in areas that experienced significant flood damage was not available.

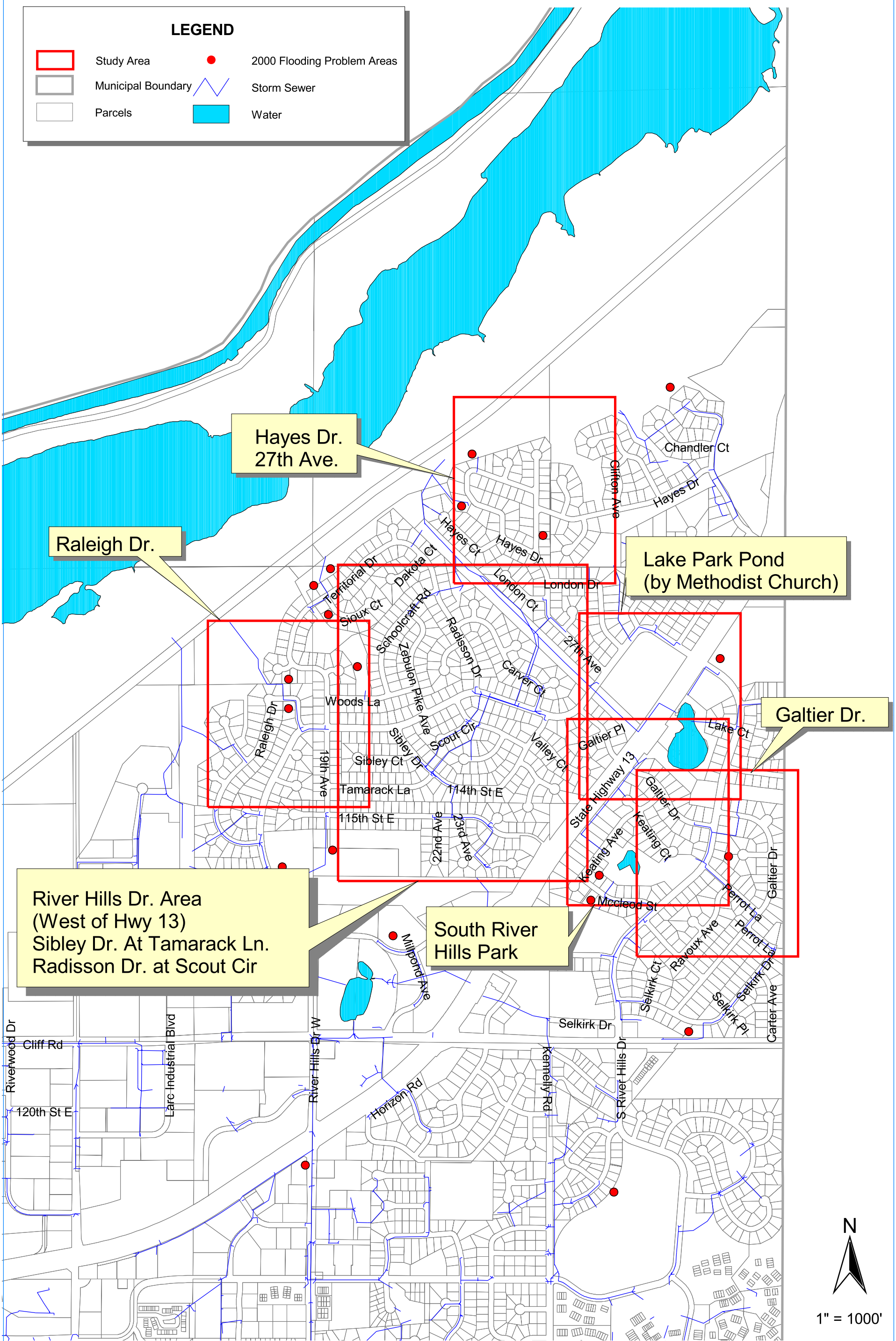
Most of the analysis was performed using XP-SWMM water engineering software. XP-SWMM is a complex modeling tool that incorporates hydrologic information and/or user defined inflow rates to produce an accurate routing of storm water through virtually any given network of pipes. HydroCAD was used for simulation of storm water routing through reservoirs such as ponds. HydroCAD was used. HydroCAD generated flow rates and volumes that were used as input in XP-SWMM.

The performance of the storm sewer systems was evaluated for three conditions:

- A 10-year 24 hour flood event (cumulative rainfall = 4.0");
- A 50-year 24-hour flood event (cumulative rainfall = 5.3"); and
- An event similar to the July 2000 storm(s) in northern Dakota County (over 8 inches in a three to five hour period).

While the majority of the storm sewer pipes and intake structures have adequate capacity, several portions of the storm drainage system appear to surcharge during extreme rainfall events. In some cases, surcharges occur for the 10-year event.

As a result of the study, plans and specifications were developed for a project in the Galtier Drive area. Other improvements in the River Hills Subwatershed will be completed along with planned street reconstruction in the area.



SEH	6/11/02 watershed.apr naf	NORTHEAST BURNSVILLE DRAINAGE STUDY	FILE NO. ABURNS9904.00 FIG NO. 40

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Down Stream Trout Streams

The Minnesota Department of Natural Resources has identified a potential trout stream segment (Trout Stream Segment # 4) that lies just downstream of the Central Subwatershed in the Lower Minnesota River Watershed (see Figure 10 in the Land and Water Resources Inventory)

Trout streams require unique protection, not just from pollutants but also from water temperature. A cold water stream environment can be altered any time the hydrology of the contributing watershed exceeds the hydrology of a similar area with having less than 10% impervious cover, significantly below what would be considered "normal" urban development. Unfortunately, mitigating for thermal pollution is non-standard and still in the mostly experimental stage. Use of Low Impact Development techniques to reduce the rate and volume of runoff and increase infiltration is one of the best current tools (see Appendix B).

Action and Implementation Plans

Tables 75 and 76 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the River Hills Subwatershed.

Table 75 - River Hills Action Plan

Subject: ➢ River Hills Subwatershed	
Purpose: ➢ Manage the rate and volume of runoff to minimize localized flooding and property damage and to protect sensitive downstream water resources.	
Goal: ➢ Improve storm sewer capacity and reduce downstream impacts to the National Wildlife Refuge and trout stream segment 4.	
Problems	➢ **Solutions**
1. Localized flooding occurred following heavy, intense rainfall events during July 2000.	➢ 1. Implement improvements identified in the Northeast Burnsville Comprehensive Flood Study (SEH, 2001). (a) River Hills Drive Catchment storm sewer improvements (b) Raleigh Drive Catchment storm sewer improvements (c) Lake Park Pond – Galtier Drive storm sewer improvements (d) South River Hills Park storm sewer improvements (e) Hayes Drive and 27th Avenue
2. Storm water discharges below River Hills subwatershed cause erosion of the bluff and threaten sensitive resources in the Nation Wildlife Refuge and Trout Stream Segment # 4.	➢ 2. Construct scour protection devices at the end of storm sewers discharging below the bluff, including sedimentation/infiltration ponding.

Table 76 - River Hills Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. River Hills Drive catchment storm sewer improvements - street reconstruction	• Northeast Burnsville Comprehensive Flood Study • Neighborhood Input • Existing Utilities	• Complete Plans • Complete Construction	Future Future	NA Future ($375,000)
2. Raleigh Drive catchment storm sewer improvements – street reconstruction	• Northeast Burnsville Comprehensive Flood Study • Neighborhood Input • Existing Utilities	• Complete Plans • Complete Construction • Additional improvements (if needed)	2003 2004 Future	NA $90,000 Future ($60,000)
3. South River Hills Park storm sewer improvements - street reconstruction	• Northeast Burnsville Comprehensive Flood Study • Neighborhood Input • Existing Utilities	• Complete Plans • Complete Construction	2003 2003	NA See Table 10 # 2
4. Hayes Drive/27th Avenue storm sewer improvements - street reconstruction	• Northeast Burnsville Comprehensive Flood Study • Neighborhood Input • Existing Utilities • Street Recon Program	• Complete Plans • Complete Construction	2002 2002	NA $545,000
5. Construct scour protection devices at the end of storm sewers discharging below the bluff	• Northeast Burnsville Comprehensive Flood Study • Neighborhood Input • Existing Utilities	• Complete Feasibility Study	2002	$5,000
6. Develop plans and install sedimentation/infiltration ponding below the bluff.	• Northeast Burnsville Comprehensive Flood Study	• Prepare plans and complete construction	2008 2009	$500,000 $250,000

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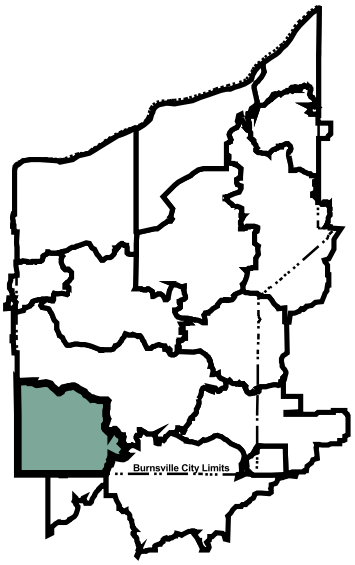
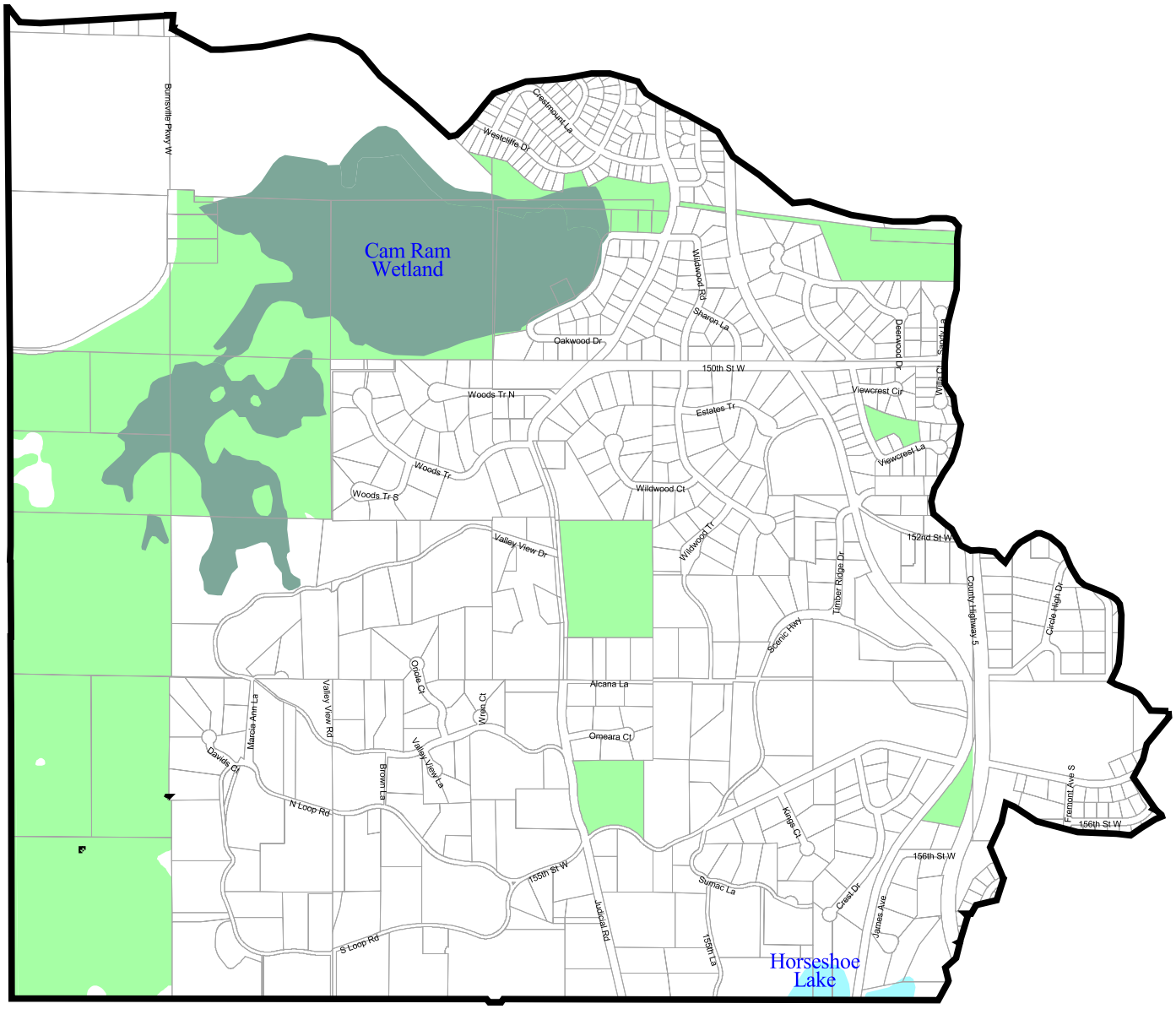


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- USFWS NWI
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, Mn/DOT, and USFWS.

Watershed Area = 1,392 Acres



SEH	6/11/02 subwtrshd.apr bd	**Murphy Hanrehan Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 41

MURPHY HANREHAN SUBWATERSHED

The Murphy Hanrehan Subwatershed is in southwest Burnsville, as illustrated in Figure 41. Horseshoe Lake is one of the identifiable waters, lying on the Burnsville/Lakeville border. Horseshoe Lake is approximately 10 acres in size, and is quite shallow (maximum depth about 4 feet). Limited physical and biological data is available for Horseshoe Lake. Further investigation and monitoring should be considered before establishing a management plan for Horseshoe Lake. A water quantity grade may be added in the future. There are no specific water quantity issues.

The lake discharges north through DNR protected Cam-Ram wetland (19-380), before turning to the northwest and into Savage. There is a general concern regarding the ultimate connection of the many land locked ponds and wetlands as shown in the Comprehensive Plan. However, there are no known current problems with water quantity in these areas. The City completed an update tot eh Flood Insurance Rate Maps in this area in 2005 and the data from this effort has been incorporated into Appendix D.

The area is zoned rural residential requiring one-acre lots when City sewer services are available and two-acre lots when City sewer is not available. There are many wetlands classified for protection and improvement in this area and there is likely opportunity for maintenance or improvement of the resources. Protection and improvement of wetlands in this area of the City will require public education efforts, as many of the wetlands are located on private land. The wetlands in southwest Burnsville are generally landlocked; that is, they no not have identifiable outlets. There is a need for more retention/infiltration in the watershed to prevent and reduce the likelihood of future problems.

As an update to the 1990 Comprehensive Plan, the City prepared a study report entitled Southwest Public Services Study. The study reviewed natural conditions and explored the means and methods for extending public utilities to the area.

The key policy decision that resulted from the study was that the City would adopt an official master plan for the future of this area and require all future subdivisions to be consistent with this plan. The resulting plan incorporates a design for the extension of public sanitary sewer, public water service and provision for storm water drainage improvements.

It is the intent to allow the area to remain unsewered for the foreseeable future. However, the City policy for future subdivisions requires that houses be located in such a way that the property can be further subdivided to a 1-acre minimum lot size when public sewer is available.

Action and Implementation Plans

Tables 77 and 78 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the Murphy Hanrehan Subwatershed.

Table 77 - Murphy Hanrehan Subwatershed Action Plan

Subject: ➢ Murphy Hanrehan Subwatershed	
Purpose: ➢ Manage the rate and volume of runoff to minimize localized flooding and property damage and to protect sensitive downstream water resources.	
Goal: ➢ Control rate and volume of runoff to existing (year 2000 levels)	
Problems	➢ **Solutions**
1. Many of the ponds and wetlands are landlocked, and without outlets. Therefore, increasing runoff will increase flooding and the potential for property damage. No problems currently exist.	➢ 1. There is a need for more retention/infiltration in the subwatershed to prevent future problems.
2. Future connection of ponds and wetlands could increase rates and volumes of runoff, threatening downstream resources.	➢ 2. Require the use of Low Impact Development Techniques as the area ultimately develops.
3. Much of the subwatershed is un-sewered.	➢ 3. Enforce in place regulations regarding individual sewage treatment systems (ISTS).
4. Increasing levels of impervious will increase the rate and volume of runoff.	➢ 4. Utilize narrow street concepts as one tool to limit total impervious cover.

Table 78 - Murphy Hanrehan Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Evaluate the need for more retention / infiltration in the subwatershed to prevent future problems	• Low Impact Development Techniques (Appendix B) • Black Dog WMO • Lakeville	• Documented Policies • Water level monitoring	2003 2005-2016	NA NA
2. Require the use of Low Impact Development Techniques as the area ultimately develops	• Low Impact Development Techniques (Appendix B) • Comprehensive Plan • Development Plans	• Development agreements • Implemented improvement	On-going	See Table 13 #6
3. Enforce in place regulations regarding individual sanitary treatment systems (ISTS)	• ISTS regulations • Inspection records • Public Education	• Documentation of compliance	Annual	NA
4. Use street design concepts and design standards	• Low Impact Development Techniques (Appendix B) • City Maintenance and Public Safety	• Street re-construction plans	Annual	NA

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LOWER MINNESOTA RIVER WATERSHED

The Lower Minnesota River Watershed generally follows the Minnesota River Valley, encompassing the area that is directly tributary to the Minnesota River (that is, does not flow into other major streams first). The Watershed covers 64 square miles in Carver, Hennepin, Dakota, Scott and Ramsey counties. Within Burnsville, the watershed adjoins the boundary of the Black Dog Watershed to the south.

Figure 42 illustrates the subwatersheds and catchment areas within the Lower Minnesota River Watershed in Burnsville.

WATERSHED MANAGEMENT ORGANIZATION

The Lower Minnesota River Watershed District is a watershed district created under Minnesota Statutes 103. The Minnesota Water Resources Board (now the Board of Water and Soil Resources) established the District on March 23, 1960. The District was originally established to be a legal entity for providing local participation to the U.S. Army Corps of Engineers (COE) to construct a navigation channel. The initial focus of the District was based on maintaining the 9-foot navigation channel on the Minnesota River.

The affairs of the District are managed by the Board of Managers. The Board is comprised of five county-appointed managers. The District's current purposes differ from its historical focus. The ongoing purposes include (Barr, 1999):

- Implementation of a data collection, assessment and planning program for District resources;
- Expand review role of development and local government projects;
- Expand project inspection program;
- Participate financially in projects that benefit the District; and
- Expand commercial navigation initiatives.

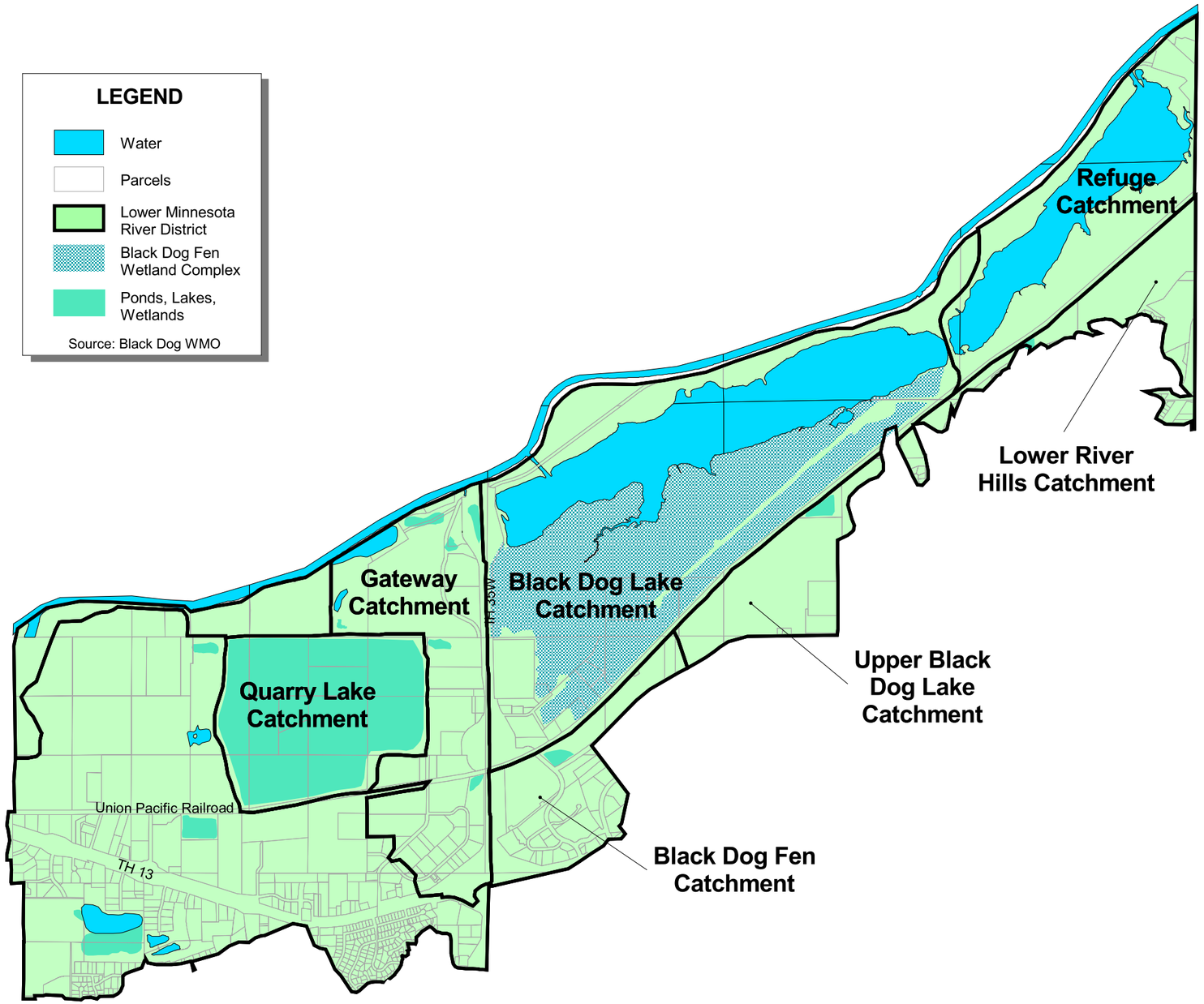
Local Planning

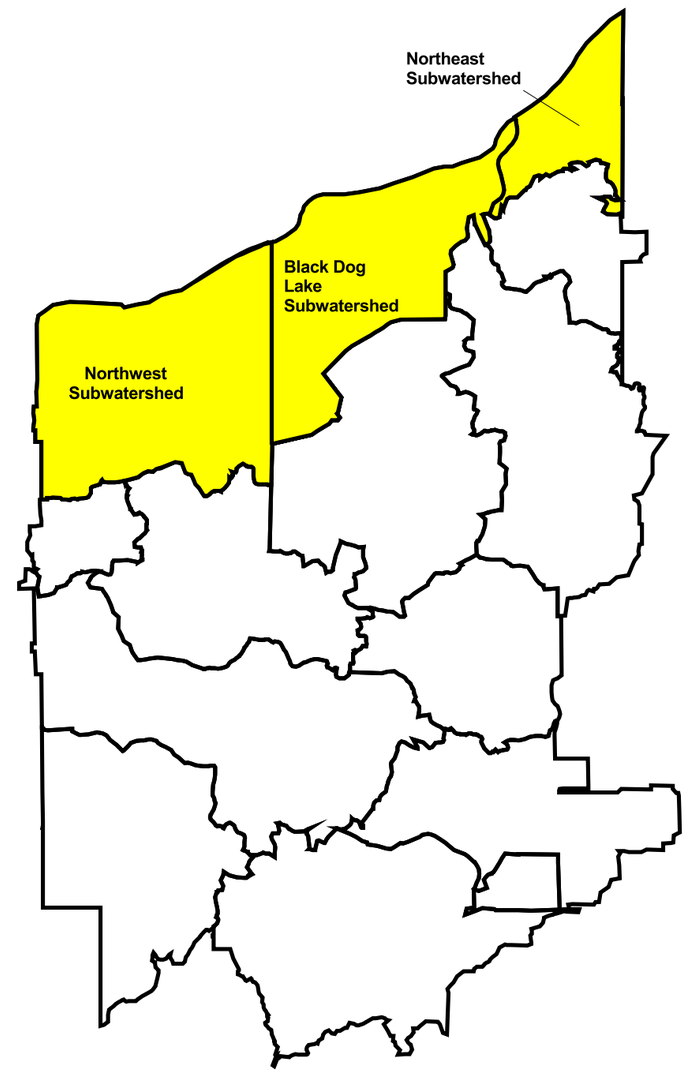
Each member City is responsible for preparing and implementing a local water resources management plan, as required in the Watershed District plan. Contents local plans are required to satisfy Minnesota Statutes 103B.235, Minnesota Rules 8410.

The District assumes that local government will continue to be the permitting authority for all land altering activity. The District requires that the local water management plan include a description of local permitting procedures including preliminary and final platting process. Appendix F of this Plan is intended to satisfy this requirement.

Subwatersheds

There are 3 identified subwatersheds of the Lower Minnesota River Watershed within Burnsville as illustrated in Figure 42. Each subwatershed has been further divided into smaller catchments or drainage areas. The drainage areas are identified in the fold-out map in Appendix D (see Figure D-1).





SEH	9/20/02 watershed.apr naf	LOWER MINNESOTA RIVER WATERSHEDS IN BURNSVILLE	FILE NO. ABURNS9904.00 FIG NO. 42

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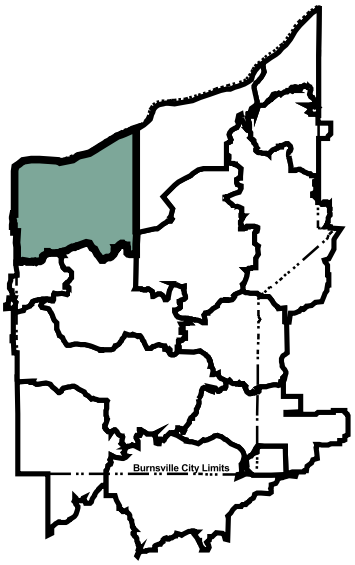
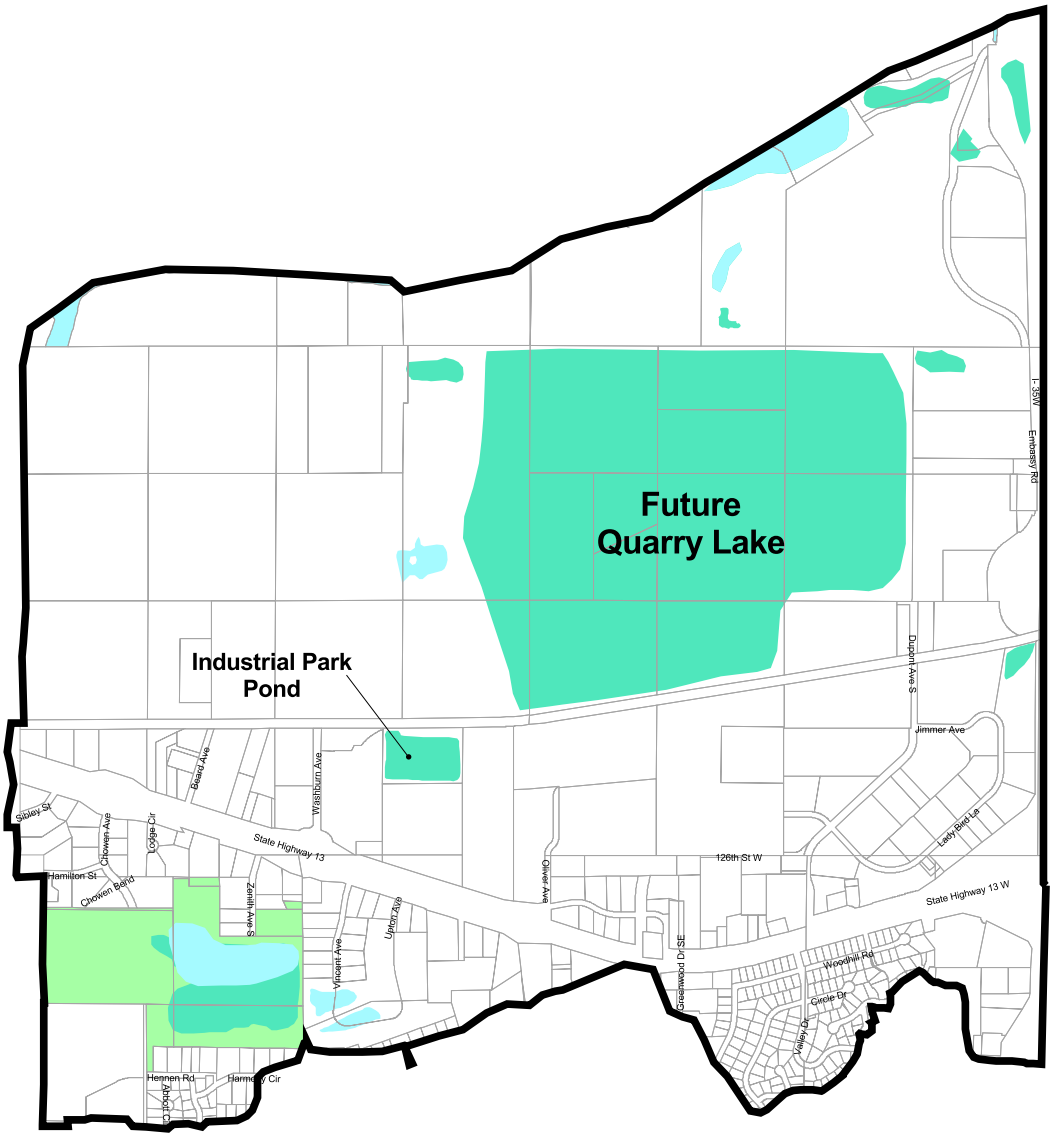


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space
- Future Ponds/Lakes/Wetlands

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 2,130 Acres



SEH	9/10/02	**Northwest Subwatershed Burnsville, MN**	FILE NO. ABURNS9904.00
	subwtrshd.apr bd		FIG NO. 43

NORTHWEST SUBWATERSHED

The Northwest Subwatershed is bounded to the north by the Minnesota River, to the east by Interstate 35W, to the west by the Savage City limits and generally to the south by Williams Drive. The Northwest Subwatershed is illustrated in Figure 43.

Historically, the Minnesota River has proved to be an amenity to the City by providing jobs and natural beauty. It also on many occasions proved to be an problematic when it flooded and forced the closing of I-35W and the old Cedar Avenue Bridge. Both of these major arteries were closed in 1965. In 1969 Cedar Ave was closed again while I-35W was protected by a dike, which left only one lane open in each direction. Many businesses also suffered severe damage and loss of revenue during those record floods. Examples would be the Embassy Club, Kraemer's Quarry operation and the Black Dog Power Plant.

The subwatershed includes the US Waste Landfill that has a self-contained drainage system that ultimately discharges to the Minnesota River. In addition to the landfill, there are several identifiable catchments within the subwatershed. The Nature Preserve Catchment that discharges to the Minnesota River via a 12-foot by 12-foot concrete box culvert. The box culvert also serves as the outlet for the Sunset Pond Outlet subwatershed in the Black Dog Watershed. The box culvert also handles contributions from Keller and Crystal Lake and the contributing catchments and subwatersheds in-between.

The Northwest Subwatershed also includes the Quarry Lake Catchment (currently an active quarry) and the Gateway Catchment. The Gateway Catchment includes the area west of and adjacent to I-35W including the proposed Black Dog amphitheater.

Based on the highly developed level of the subwatershed, there is generally too little pre-treatment of runoff. As further development and re-development occurs, a stronger emphasis on developing additional storm water treatment is needed. Since completion of the 2002 WRMP, the City has initiated a closer look at the redevelopment potential in this area and has named the area the Minnesota River Quadrant (MRQ).

Related to this WRMP update, a closer look was also taken at the storm water management needs and opportunities in the MRQ. This was completed in two stages. First, a look at the larger area was completed in February of 2006 that evaluated the needs based on a concept development scenario prepared by DSU. The second stage was to take a closer look at what opportunities for storm water management are available roughly between TH 13 and the rail road corridor. Both of these evaluations are provided in Appendix A of this WRMP.

Quarry Lake Catchment

Much of the future development adjacent to the quarry is the subject of a planned unit development (PUD) agreement between Edward Kraemer and Sons, Inc. and the City (McCombs, et al., 1994). A levee system exists south of the river, extending from I-35W to the U.S. Waste Landfill in the northwestern most corner of the City. The levee was privately constructed in response to historic flooding problems and to protect the quarrying operation. Long term maintenance and ownership of the levee should be addressed in future revisions to the PUD.

The lessons learned from the former gravel-pit-turned "Grade A" Lake (Lac Lavon) will help the City to establish and maintain this resource of regional significance. Special efforts have been made to provide adequate storm water treatment and to divert direct storm water from the lake to help implement this vision. Already in-place are two trunk storm sewer systems, a 12 foot by 12 foot box culvert to the west side of the lake between the landfill and the quarry and a 72-inch storm sewer on the east side, directly west of I-35W. These trunk lines will carry runoff from the area and from the west and Sunset Pond Outlet Subwatersheds directly to the Minnesota River. Both outfalls require flood closure structures and the ability to bypass-pump when river levels are high and runoff is occurring in the upstream subwatersheds. Such a facility is already in-place at the box culvert outfall.

The discharge capacities generally coincide with the 10-year frequency rainfall event. When high river levels correspond with significant rainfall, minor flooding south of the levee systems could result. For that reason, all future structures south of the levee system should be built above elevation 720.0, or have adequate flood protection measures. The southeastern portion of the subwatershed coincides with the Black Dog WMO's West and Sunset Pond Outlet Subwatersheds. A series of small ponds in the upper/southern-most portions of the subwatershed currently discharge into the Northwest Burnsville Subwatershed along the County Road 5 alignment. Future regional storage/treatment facilities are planned to avoid direct discharge to Quarry Lake (see previous discussion).

Just as declining ground water levels due to quarrying have changed the surrounding landscape, future rising ground water levels in the quarry area will require careful evaluation and monitoring. Considerable infrastructure has been installed since the quarry operations began. The impact of nearer-the-surface local ground water levels could have some adverse impacts. This issue is beyond the scope of the Water Resources Management Plan update.

The floor of the Kraemer quarry to the south will be excavated to elevation 610, some 78 feet below the normal levels on the Minnesota River, according to the PUD document prepared by McCombs Frank Roos Associates, Inc. dated February 1994. At the Kraemer quarry, groundwater and surface water is collected in the quarry bottom and pumped up into a series of ponds before discharging through the flood plain forest wetland complex lying between the quarry and the Minnesota River. The

pumping operation is performed in accordance with a Minnesota Department of Natural Resources Water Appropriation Permit (Dewatering General Permit 97-0005). The quarry has been dewatered at the average rate of 6 million gallons per day (1995).

The Kraemer quarry is projected to remain in operation until 2017 according to the February 1994 PUD document (McCombs). Anticipated expansion of the quarry to the west has included investigation of the need for wetland permitting In 1997, the City found that a no-net-loss determination could be made for the future expansion.

When existing dewatering operations cease to function, the Kraemer quarry will fill with ground water. SEH, Inc. completed a ground water study in 2000 and 2001. The results of that study indicate that the Quarry Lake will likely rise to an elevation of 700 to 705 without an outlet and without any dewatering activity in the area. If the proposed Black Dog Amphitheater is built (see Gateway Catchment), dewatering at the rate of 2,500 gallons per minute (gpm) is anticipated. In this case the lake level could be maintained at elevation 695, assuming non-flood conditions on the river.

During a flood on the Minnesota River, additional pumping will be required to keep up with river water that will seep into the Quarry Lake through the fractured bedrock. During the 1997 flood, City and private efforts pumped water at the rate of 37,500 gallons per minute from the area adjacent to the quarry to the Minnesota River to minimize flood damage. The quarry dewatering pumps worked at the rate of 13 million gallons per day to keep the quarry bottom dry. River levels in 1997 rose to 714.3 (note: the Savage Gauge is approximately 0.7’ higher than the City gauge at the box culvert). In 2001, the river exceeded 715.0; gauge records are incomplete since the Savage gauge was flooded out (see www.mvp.wc.usacearmy.mil/dcp/SAVM5.html).

The City plans to design and install a future pumping station at the Quarry Lake to minimize the extent to which the future lake will significantly exceed normal river levels and to control flooding of the future lake during a flood event on the Minnesota. The Minnesota Department of Natural Resources will be the permitting agent for future quarry dewatering/lake level control.

The quality goal for the future Quarry Lake is 3.6 meters clarity. Restricting direct discharge to the lake will minimize quality issues. The quantity issue for the lake will relate to control the lake's response to changing river levels.

Nature Preserve Catchment

The Rudy L. Kraemer Nature Preserve is the centerpiece of the Nature Preserve Catchment. Built in 1996, the 75-acre complex includes restored wetlands that serve as wetland mitigation for expansion of the Burnsville Landfill (currently owned by U.S. Waste). The wetland complex receives storm water via a low flow diversion from the 66” trunk line that serves as the outlet for Sunset Pond and the Sunset Pond Outlet Subwatersheds

Two additional stormwater ponds were constructed directly to the east of the nature preserve in 2000. Lying southwest and adjacent to the Sue Fischer Memorial Park (Youth Athletic Complex), the two ponds also receive stormwater diverted from the 66-inch diameter trunk storm sewer that serves as the outlet for Sunset Pond and the Sunset Pond Outlet Subwatersheds. The northern-most pond is used to irrigate the adjacent athletic fields depending on available stormwater. Due to extensive pond weed growth, the irrigation system is operated in spring, early summer and late fall.

Box Culvert Catchment

The box culvert catchment is the principal outlet for the majority of Burnsville. The 5,780 acres that are tributary to the upstream Sunset Pond discharge north through the Nature Preserve Catchment and finally into a 3,534 foot-long 12 foot by 12 foot pre-cast concrete box culvert that begins near Washburn Avenue and the US Waste Landfill. The box culvert follows a south-to-north path between the landfill and the quarry to an eventual discharge to the Minnesota River. Figure 44 illustrates the tributary drainage areas between Sunset Pond and the box culvert inlet.

The box culvert was designed to contain excess flows and/or Minnesota River flood waters when full discharge is restricted due to a flood. In 1997, numerous joints failed under flood pressure, resulting in flooding of private property and extensive pumping of flood waters to the Minnesota River. As a result, the existing flap gate and pump station connections discussed above were installed. In addition, an extensive external joint-repair program was undertaken in 1998. During the spring of 2001, flood waters again damaged several joints, causing the material adjacent to the box culvert to be washed-out. Once repaired, the joints, the flap gate and the pumping station will require regular maintenance and inspection to ensure that the entire system is in good working order prior to a flood event. Future construction may include a pump station and automated controls to replace the manual pump controls currently in place.

Industrial Park Pond Catchment

The Industrial Park Pond area receives significant runoff from the West Subwatershed as well as from commercial and industrial properties along the TH 13 corridor. The tributary area extends as far south as County Rd. 42 and east of I-35W. A major trunk storm sewer in Co. Rd. 5 carries runoff north to an existing ditch that drains west along the south side of the railroad grade towards the box culvert (discussed above). Approximately 1,300 acres is tributary to the area.

The City prepared a draft feasibility study of a water quality pond in May 2001 (SEH). The project evaluated converting an 11-acre upland site just north of Cub Foods to a stormwater pond and wetland complex. The pond would divert low flows form the existing ditch and would discharge into the 12 foot by 12 foot box culvert to the northwest. The Industrial Park Pond project is no longer a specific project that the City has planned for the area. Instead, the information in Appendix A, relating to storm water management needs and options in the MRQ will be used a guide to future development and redevelopment.

Within the catchment, it has been proposed to extend Co. Rd. 5 to the north. As part of the roadway extension, additional stormwater ponding should be developed to provide additional upstream treatment.

Gateway Catchment

The Gateway Catchment follows the eastern edge of the Northwest Burnsville Subwatershed, paralleling I-35W. The area is served by a large trunk storm sewer in Embassy Road. This catchment also includes the proposed Black Dog Amphitheater and the McGowan Landfill. The Amphitheater was the subject of an Environmental Assessment Worksheet (EAW) (DSU, 2000). The EAW addressed stormwater collection and treatment issues, future dewatering and proposed wetland mitigation. Figure 45 provides an aerial view of the area that illustrates the conceptual plan near the proposed amphitheater site.

The future amphitheater would require the construction of a flood control levee to replace the remnants of a privately constructed levee around the property. In the report entitled Minnesota River Flood Profile Modeling – Burnsville Amphitheater (SEH, 2000), a hydraulic analysis demonstrated how such a levee could be constructed outside the floodway a without increasing the flood profile. The US Army Corps of Engineers, the Minnesota Department of Natural resources and the Lower Minnesota River Watershed District all accepted the analysis.

The existing levee was previously evaluated (SEH, 1999). The elevation (which caused an increase in the upstream flood profile) and questionable construction methodology used ultimately resulted in the DNR and the City ordering that a portion of the levee be removed. The levee was lowered as a result in the spring of 2001 to ensure compliance with the National Flood Insurance Program.

A 72-inch storm sewer on the east side of the catchment, directly west of I-35W is the main drainage facility. This trunk line carries runoff directly to the Minnesota River. The outfalls require a flood closure structure and the ability to bypass-pump when river levels are high and runoff is occurring in the upstream area.

Minnesota River Floodplain Catchment

Disposal of dredge spoil materials on the Minnesota River Corridor is an ongoing effort. Burnsville's current Comprehensive Plan does not specifically list dredge disposal as an allowable use, nor is it identified as a prohibited use. The District has secured easements to accommodate dredged materials. The dredge material has been used as daily cover at the Waste Management landfill in Northwest Burnsville

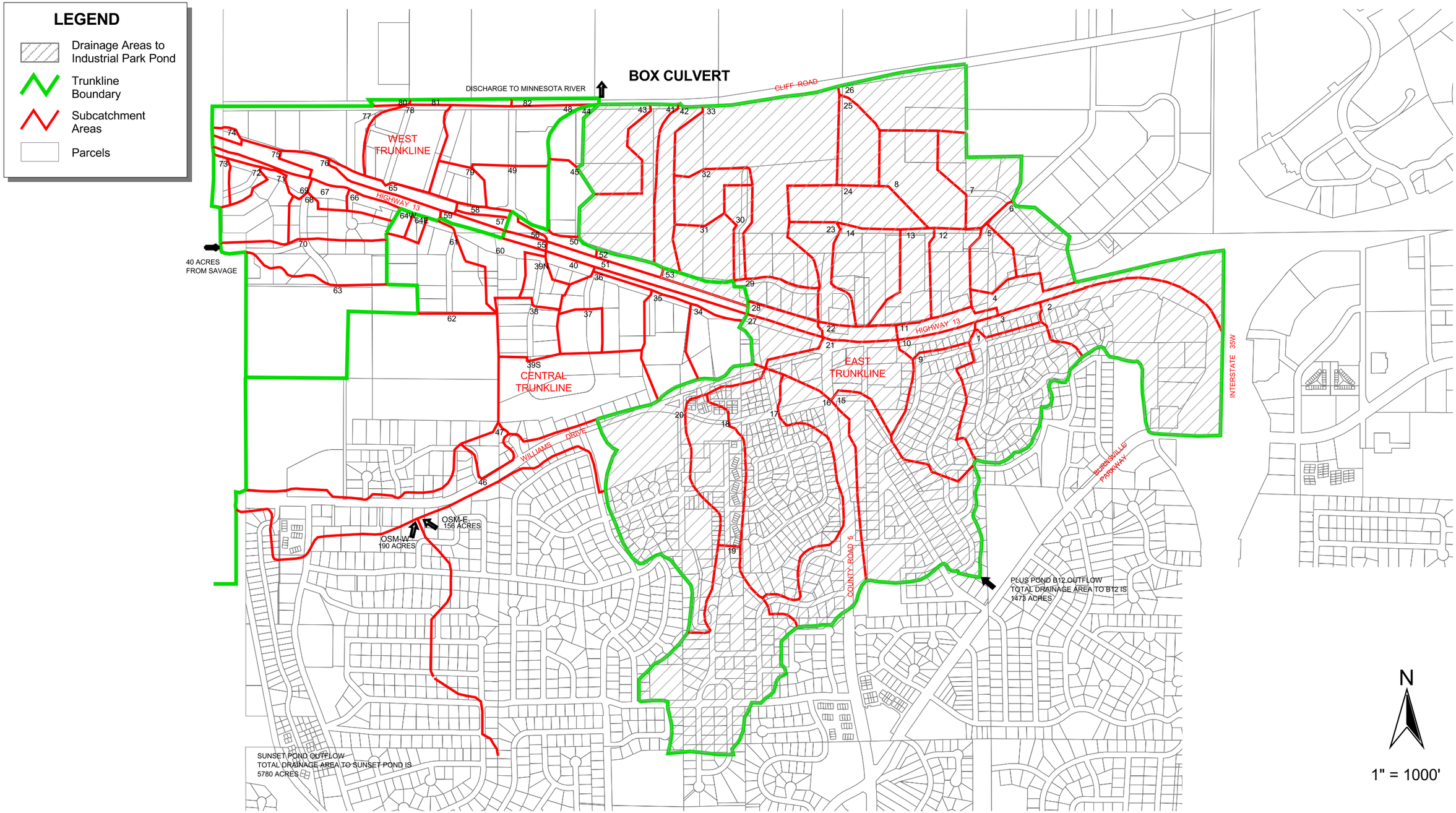
In 2001, the City approved a 10 to 15 year interim use permit for dredge disposal sites on Waste Management Property along the Minnesota River.

Action and Implementation Plans

Tables 79 and 80 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the Northwest Subwatershed.

Table 79 - Northwest Subwatershed Action Plan

Subject: ➢ Northwest Subwatershed	
Purpose: ➢ To manage the quality and quantity of stormwater discharges to the Minnesota River and to future Quarry Lake	
Goal: ➢ Maintain Quarry Lake's water clarity at 3.6 meters or greater; maintain federal/state/local standards for discharges to the Minnesota River.	
City Classification: ➢ Quarry Lake (Future); High Priority	
Intended Use: ➢ Future Quarry Lake: Supports swimming and other direct contact recreational activities such as water skiing, scuba diving and snorkeling. Provides wildlife habitat. ➢ Minnesota River: commercial and recreational boating, fishing.	
Problems	➢ **Solutions**
1. Direct discharges to Quarry Lake will decrease quality over time.	➢ 1. Divert runoff around Quarry Lake; limit direct discharges from future development, and limit the watershed area to lake ratio to 1.1 to 1.
2. Level of treatment in subwatershed is very limited.	➢ 2a. Develop Industrial Park Pond and Wetland Complex to provide additional treatment. 2b. Complete a detailed water quality analysis including water quality of Sunset Pond discharge to identify effectiveness of existing treatment and opportunities for additional treatment and comply with federal/state/local standards.
3. Embassy Road trunk storm sewer does not have a closure/by-pass pumping system for flood events.	➢ 3. Construct flood closure and bypass pumping system for Embassy Road outfall.
4. Future direct flooding of Quarry Lake (river water overtopping levee system) would severely threaten the water quality of the lake. Long-term maintenance and ownership of private levee at quarry is future concern.	➢ 4. Maintain the existing private levee system between the Minnesota River and the Quarry Lake to provide direct separation between the lake and river water. Address long-term maintenance in Planned Unit Development Agreement.
5. Indirect future flooding of Quarry Lake via groundwater, which will cause fluctuation in lake levels similar to the flood levels on the river, could cause flooding of properties adjacent to the lake at elevations below 720.0.	➢ 5a Limit development of properties adjacent to future Quarry Lake to elevation 720.0 or higher. 5b. Prepare study for flood dewatering system to maintain Quarry Lake levels below flood stage on the river to reduce the risk of flooding adjacent properties.



SEH	9/10/02 watershed.apr naf	TRIBUTARY AREAS BETWEEN SUNSET POND AND BOX CULVERT INLET	FILE NO. ABURNS9904.00 FIG NO. 44

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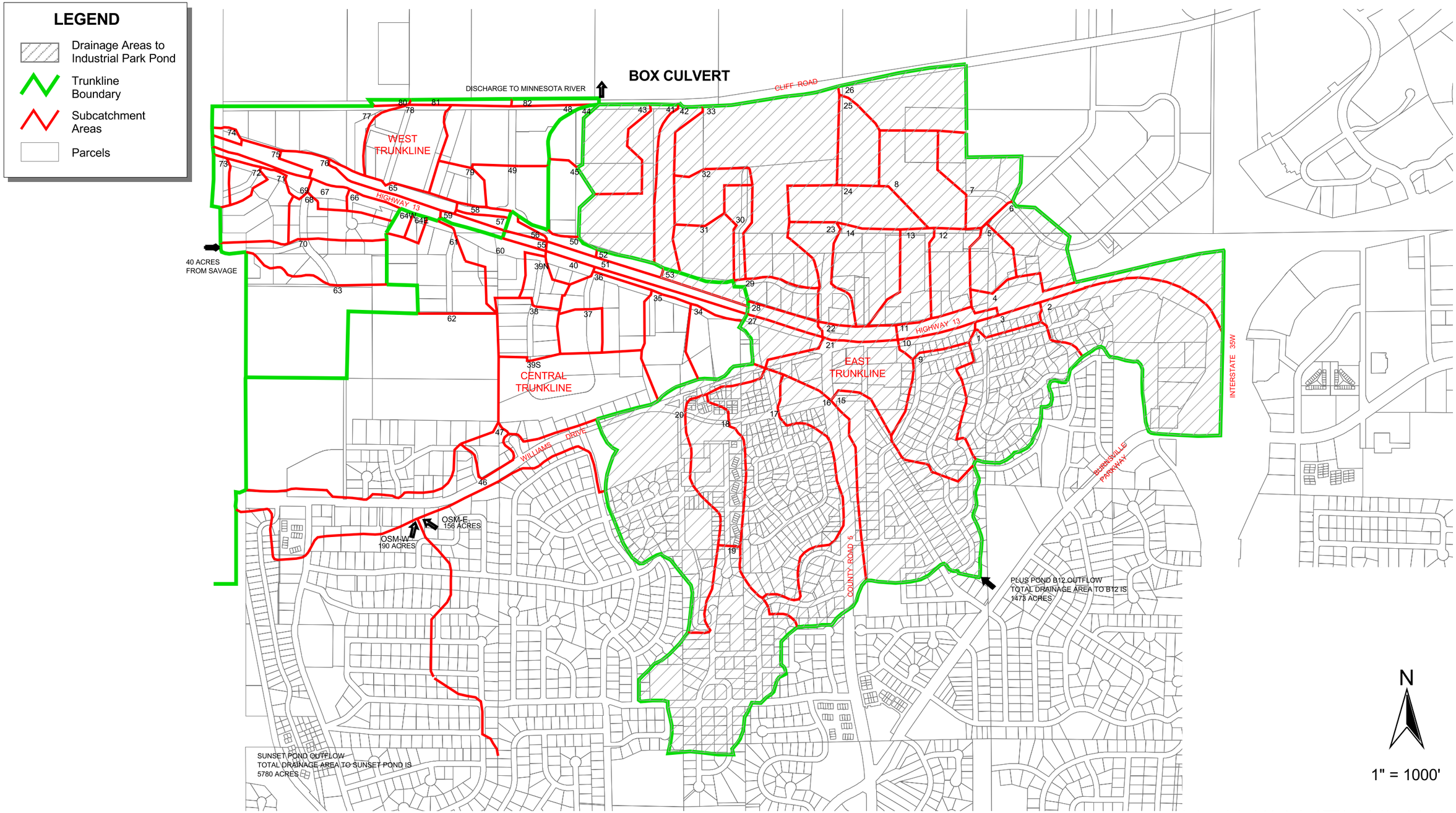

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TRIBUTARY AREAS BETWEEN SUNSET POND AND BOX CULVERT INLET

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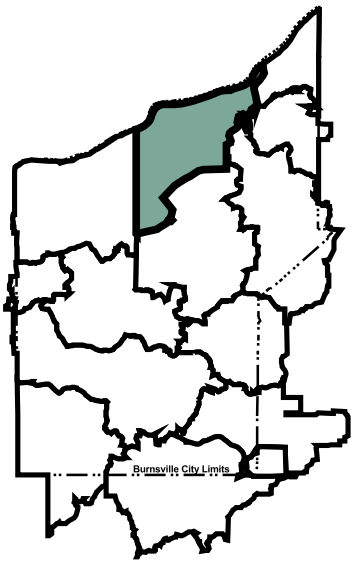
Table 80 - Northwest Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Divert runoff around Quarry Lake; limit direct discharges from future development	• Available trunk storm sewer capacity • Regional detention and treatment • Proposed development and incentives • Development standards	• No direct discharges	Annual	NA
2. Develop Industrial Park Pond and wetland complex to provide additional treatment	• Draft Feasibility Study • CSAH 5 Extension EAW	• Acquire Property • Complete Plans, Specifications, and Construction	2003 2003 2004	NA $675,000 $175,000
3. Complete a diagnostic study of Sunset Pond and identify effectiveness of existing treatment and opportunities for additional treatment and comply with standards	• Subwatershed and Catchment Delineation • Land use information • Storm sewer as-builts • Hydraulic and P8 modeling • Available pond bathymetry (depths) • Available monitoring data • Willow Creek WOMP data	• Completed analysis and recommendations	2009	$30,000
4. Construct flood closure and bypass pumping system for Embassy Road outfall	• Existing physical conditions at the outfall • Existing utilities • Federal, state and local permitting	• Feasibility study • Completed plans • Completed construction	2003 2003 2004	$10,000 $10,000 $175,000
5. Maintain the existing private levee system between the Minnesota River and Quarry Lake to provide direct separation and address long-term maintenance in Planned Unit Development Agreement	• Existing ownership • Available construction and inspection records • Existing physical conditions	• Completed documentation in PUD • Complete Inspection and report • Future repairs	2002 Future Future	NA Future ($35,000) Future
6. Strive to flood proof all properties adjacent to future Quarry Lake to elev. 720.0	• Development plans	• Completed flood proofing	Future	Future
7. Prepare study for flood dewatering system to maintain Quarry Lake levels below flood stage on river	• Existing ground water modeling (SEH) • City Comprehensive (potable) Water Plan • Kraemer Quarry operations • DNR dewatering policy	• Completed study	Future	Future
8. Continuing activities of the Kraemer Nature Preserve Master Plan	• Nature Preserve Master plan • City Natural Resources Staff • City Maintenance Staff	• Completed Master Plan activities (On-going maintenance)	2002 2003 2004 2005 2006	$52,000 $24,000 $19,000 $19,000 $10,000

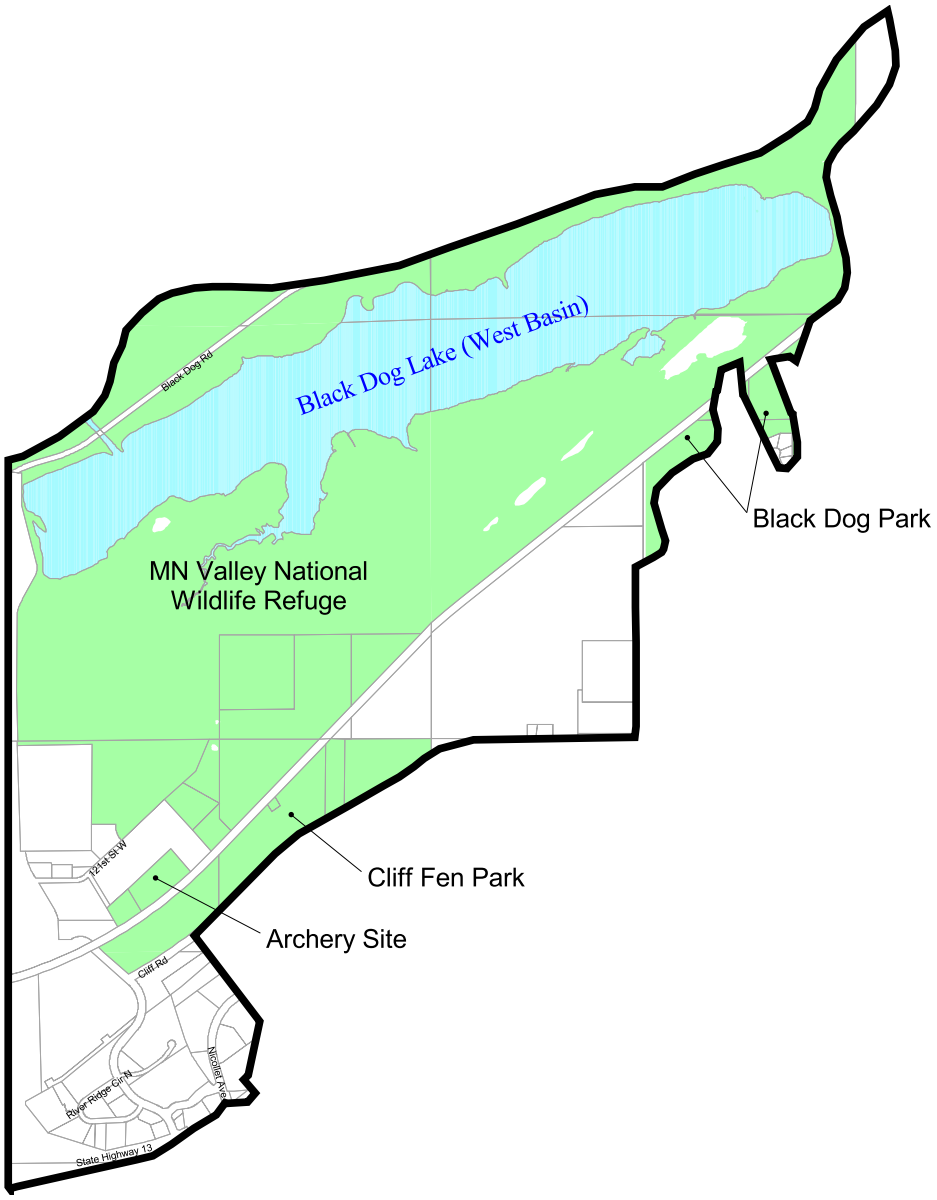


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 1,620 Acres



SEH	9/10/02 subwtrshd.apr bd	**Black Dog Lake Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 46	

BLACK DOG LAKE SUBWATERSHED

There are three definable catchments within the Black Dog Lake Subwatershed; the Black Dog Fen Catchment to the southwest of Black Dog Lake, the Upper Black Dog Lake Catchment to the southeast of Black Dog Lake and the Black Dog Lake Catchment between the railroad and the Minnesota River. The Black Dog Lake Subwatershed is illustrated in Figure 46.

Black Dog Fen Catchment

The Black Dog Fen Catchment includes the area east of I-35W and north of TH 13 and south of the railroad grade. With recent reconstruction of Cliff Road, additional ponds and wetland mitigation were constructed south of the railroad. The upstream subwatershed includes the Heart of the City catchment in the Central Subwatershed. The downstream area is tributary to the Black Dog Fen. There is a current opportunity to construct additional storm water treatment and wetland mitigation at the Cliff-Fen Park. The purpose of these ponds would be to provide additional storm water treatment and polishing before discharging under the railroad grade to the Black Dog Fen wetland complex. Because the fen is such a sensitive resource, every effort to minimize pollutants and large-duration large-volume discharges to the fen should be taken. In addition to the proposed ponds, a manually-operated control structure should be considered at the railroad crossing. This would give the City the ability to control the downstream migration of pollutants in the event of an upstream spill.

Upper Black Dog Lake Catchment

The Upper Black Dog Lake Catchment lies east of the Black Dog Fen Catchment, between the railroad grade and the upstream east Subwatershed. This area generally lies below the developed bluff line. The area does not receive direct storm water discharge areas from upstream. Storm water is generally diverted to the west or east before reaching the catchment and the entire subwatershed is zoned general industrial use. The area ultimately discharges under the railroad grade where it is tributary to Unnamed Trout Stream #7. Therefore, precautions will need to be incorporated into any development plans to control the rate, volume and temperature of discharge to minimize adverse impacts to the downstream receiving waters.

Black Dog Lake Catchment (West Basin)

The area lying between the railroad grade and the Minnesota River is part of the Black Dog Unit of the Minnesota Valley National Wildlife Refuge, under the authority of the U.S. Fish and Wildlife Service. The west basin of Black Dog Lake and the Black Dog Fen are the primary waterbodies within the catchment. The City understands that extensive data on Black Dog Lake may be available from Xcel Energy. The City intends to review the available data and work with Xcel to develop a future lake management plan.

The U.S. Fish and Wildlife Service has six objectives for protecting the Refuge from storm water, contaminants and spills.

1. Water entering the Refuge should meet Minnesota Class IIB Waters and National Urban Runoff Program Standards;
2. Refuge will not be the first line of defense for spills or upset conditions;
3. Minimize, maintain or improve existing transportation and utility corridors;
4. Effective treatment of stormwater in the watershed;
5. Clean Air; and
6. Minimize noise impacts.

Implementation of this subwatershed plan should satisfy several of the objectives listed above.

Unnamed Trout Stream #7

Unnamed Trout Stream Segment #7 is identified in both the Black Dog WMO and Lower Minnesota River Watershed District Plans (see Figure 10). The trout stream segment is one of several remnant trout streams identified by the DNR as part of its' Metro Trout Stream Watershed Protection Initiative.

Trout streams require unique protection, not just from pollutants but also from water temperature fluctuations. A cold water stream environment can be altered any time the contributing watershed exceeds approximately 10 percent impervious cover. This level of imperviousness is significantly below what would be considered "normal" urban development. Once the level of impervious cover exceeds 20-25 percent, nutrient loadings without BMPs in place will exceed background levels. When impervious surfaces exceed 40-50 percent, even with the most effective and reliable BMPs, nutrient loading will exceed background levels.

Unfortunately, mitigating for thermal pollution is non-standard and still in the mostly experimental stage. Use of Low Impact Development techniques to reduce the rate and volume of runoff and increase infiltration is one of the best current tools (see Appendix B).

The existence and viability of the existing stream are unknown at this time. Therefore, initial efforts should focus on habitat assessments including thermal stability of the stream flow monitoring, aquatic invertebrate surveys and chemical analysis.

Action and Implementation Plans

Tables 81 and 82 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the Black Dog Lake Subwatershed.

Table 81 - Black Dog Lake Subwatershed Action Plan

Subject:

- Black Dog Lake Subwatershed

Purpose:

- Control the rate, volume and quality of stormwater discharges and ground water levels to support natural resources including the Black Dog Fen, Unnamed Trout Stream #7 and the west basin of Black Dog Lake

Goal:

- Preserve existing conditions and improve long term conditions of the Black Dog Fen, Unnamed Trout Stream #7 and the west basin of Black Dog Lake.

Water Body Classification:

- Black Dog Fen; Protection, High Priority
- Unnamed Trout Stream #7: Protection, High Priority
- West Black Dog Lake: High Priority

Intended Use:

- Black Dog Fen: preservation and research
- Unnamed Trout Stream #7: protection and research
- Black Dog Lake: passive recreation, wildlife observation

Problems	Solutions
1. Development and redevelopment pressures in the Heart of the City Catchment (Black Dog Watershed, Central Subwatershed) threatens sensitive downstream resources.	1. Construct additional storm water treatment and wetland mitigation at the Cliff-Fen Park.
2. The existing discharge point from the Black Dog Fen Catchment under the railroad grade cannot be closed mechanical in the event of an upstream spill or release of pollutants.	2. A manually-operated control structure should be considered at the Black Dog Fen outlet railroad crossing culvert.
3. Storm water discharges from development above (south of) the bluff line threaten to cause excessive erosion at multiple discharge points below the bluff.	3a. Precautions will need to be incorporated into any development plans to control the rate, volume and temperature of discharge to minimize adverse impacts to the downstream receiving waters. 3b. Construct a storm water basin/sediment-trapping device upstream (south of) the existing railroad grade culvert crossing.
4. The suitability of Unnamed Trout Stream #7 is unknown, limiting the commitment to undertake full restoration efforts.	4a. A Focus initial investigative efforts on habitat assessments including thermal stability of the stream, flow monitoring, aquatic invertebrate surveys and chemical analysis. 4b. A cooperative effort is needed between MnDOT, Lower Minnesota River Watershed District and the City to implement BMPs to minimize downstream impacts.

Table 82 - Black Dog Lake Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Construct additional storm water treatment, wetland mitigation and control structure at the Cliff-Fen Park	• Lower MN WD • Hydrologic and pollutant loading models • Heart of the City storm water plan (SEH, 2001) • Available park lands	• Completed design and construction	2002	$670,000
2. Evaluate a manually-operated control structure at the Black Dog Fen outlet railroad crossing culvert	• Railroad • Available property and access • Hydraulic/hydrologic modeling • Existing culvert conditions	• Completed design • Completed Construction	2006 2008	NA $100,000
3. Precautions will need to be incorporated into any development plans to control the rate, volume and temperature of discharge to minimize adverse impacts to the downstream receiving waters	• Development Agreements • Low Impact development Techniques (see Appendix B) • DNR Trout Unit • Dakota Co. SWCD • Lower Minnesota River Watershed District • Financial Incentives	• Individual Development Plans • Development Agreements	Ongoing	NA
4. Construct a storm water basin/sediment-trapping device upstream (south of) the existing railroad grade culvert crossing	• Hydrologic and pollutant loading models • Available property and access • Upstream development plans • Railroad coordination	• Completed design • Completed Construction	2007 2008	$45,000 $400,000
5. Use existing data on west basin of Black Dog Lake as the basis to develop a future lake management plan	• Xcel data for Black Dog Lake • US Fish and Wildlife Service • Dakota County • Metropolitan Council • Lower Minnesota River Watershed District	• Completed management plan	2005	$15,000
6. Complete investigative efforts on Unnamed Trout Stream #7 including thermal stability of the stream, flow monitoring, aquatic invertebrate surveys and chemical analysis	• US Fish and Wildlife Service • Dakota County • Metropolitan Council • DNR Trout Unit • Lower Minnesota River Watershed District	• Installation of continuous monitoring thermal station • Complete in-field habitat analysis	2003 2003	$10,000 $10,000

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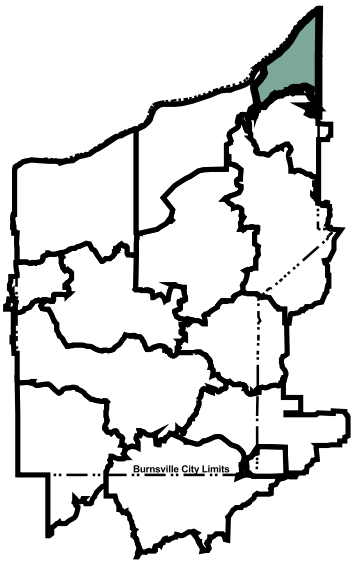
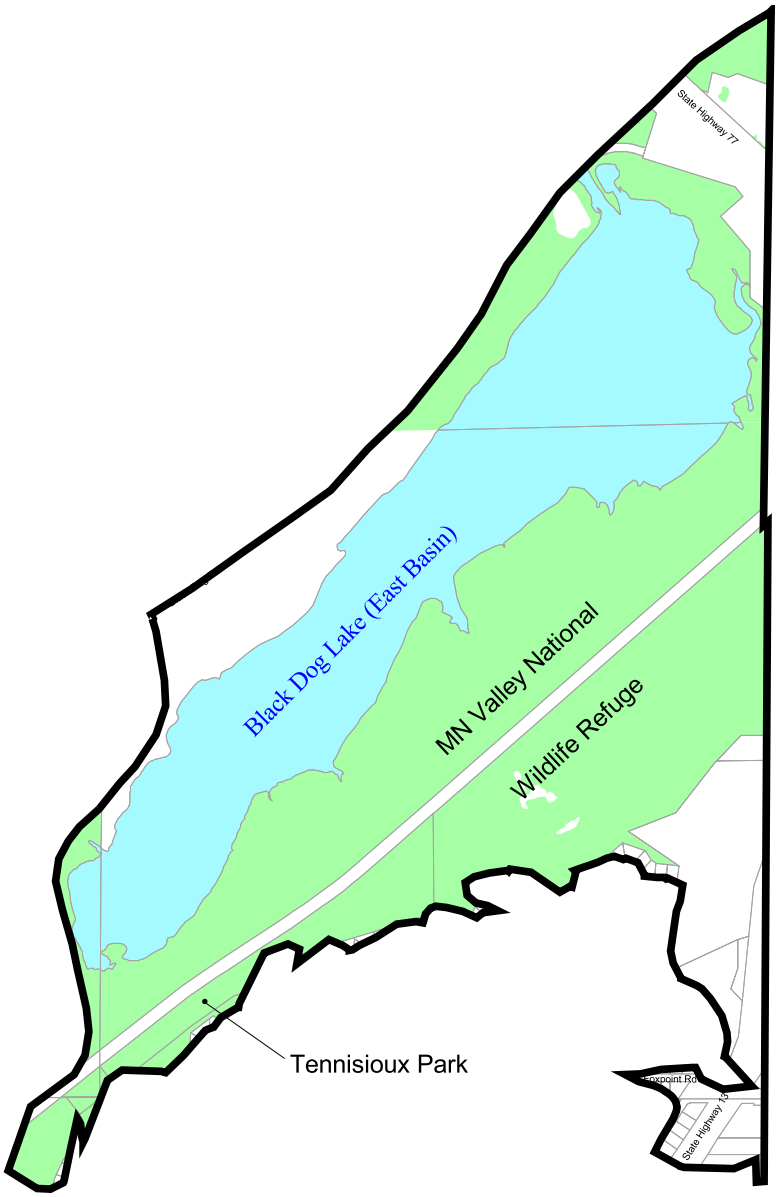


Legend

- Subwatershed Boundaries
- Parcel Boundaries
- Dakota County Water Bodies
- Burnsville Parks & Open Space

Source: City of Burnsville, Dakota County, and Mn/DOT.

Watershed Area = 600 Acres



SEH	9/10/02 subwtrshd.apr bd	**Northeast Subwatershed** **Burnsville, MN**	FILE NO. ABURNS9904.00 FIG NO. 47	

NORTHEAST SUBWATERSHED

The Northeast Subwatershed is illustrated in Figure 47 and consists of two definable catchments: the Lower River Hills catchment; and the Refuge catchment.

Lower River Hills Catchment

The Lower River Hills Catchment lies generally below the bluff line north of and adjacent to the upstream River Hills Subwatershed. The Subwatershed also includes a mostly-undeveloped area above (south of) the bluff line, north of TH 13 and west of the City limits. The catchment is bounded to the north by the existing railroad grade.

The City completed a comprehensive drainage study of the upstream River Hills Subwatershed in 2001 (see Black Dog Watershed section of this report). The drainage system improvements will include improving outfalls that discharge from the top of the bluff to the bottom and into the Lower River Hills Catchment. Each of the outfall points will require special erosion control and energy dissipation measures to prevent downstream erosion.

Unnamed Trout Streams #1 and #4

The undeveloped area above the bluff is directly tributary to the downstream Unnamed Trout Streams #1 and #4 (see Figure 10). A cooperative effort is needed between MnDOT, Eagan, the Lower Minnesota River Watershed District and the City to implement appropriate BMPs to minimize downstream impacts.

Unnamed Trout Streams #1 and #4 are identified in both the Black Dog WMO and Lower Minnesota River Watershed District Plans. The trout stream segment is one of several remnant trout stream identified by the DNR as part of its' Metro Trout Stream watershed Protection Initiative.

Trout streams require unique protection, not just from pollutants but also from water temperature fluctuations. A cold water stream environment can be altered any time the contributing watershed exceeds approximately 10 percent impervious cover. This level of imperviousness is significantly below what would be considered "normal" urban development. Once the level of impervious cover exceeds 20-25 percent, nutrient loadings without BMPs in place will exceed background levels. When impervious surfaces exceed 40-50 percent, even with the most effective and reliable BMPs, nutrient loading will exceed background levels.

Unfortunately, mitigating for thermal pollution is non-standard and still in the mostly experimental stage. Use of Low Impact Development techniques to reduce the rate and volume of runoff and increase infiltration is one of the best current tools (see Appendix B).

The existence and viability of the existing stream are unknown at this time. Therefore, initial efforts should focus on habitat assessments including thermal

stability of the stream flow monitoring, aquatic invertebrate surveys and chemical analysis.

Refuge Catchment

The area north of the railroad grade is part of the Black Dog Unit of the Minnesota Valley National Wildlife Refuge. The primary features of the catchment include Unnamed Trout Streams #1 and #4 and the east basin of Black Dog Lake. The lake receives cooling water discharge from Xcel Energy's Black Dog Power Plant. The City understands that extensive data on Black Dog Lake may be available from Xcel Energy. The City intends to review the available data and work with Xcel to develop a future lake management plan.

The U.S. Fish and Wildlife Service has six objectives for protecting the Refuge from storm water, contaminants and spills.

1. Water entering the Refuge should meet Minnesota Class IIB Waters and National Urban Runoff Program Standards;
2. Refuge will not be the first line of defense for spills or upset conditions;
3. Minimize, maintain or improve existing transportation and utility corridors;
4. Effective treatment of stormwater in the watershed;
5. Clean Air; and
6. Minimize noise impacts.

Implementation of this plan should satisfy several of the objectives listed above.

Action and Implementation Plans

Tables 83 and 84 present the City's Action Plan and implementation actions, respectively, that have been developed to achieve the purpose and goals for the Northeast Subwatershed.

Table 83 - Northeast Subwatershed Action Plan

Subject: ➢ Northeast Subwatershed	
Purpose: ➢ Control the rate, volume and quality of stormwater discharges and ground water levels to support natural resources including the Unnamed Trout Streams #1 and #4 and the east basin of Black Dog Lake	
Goal: ➢ Preserve existing conditions and improve long term conditions of Unnamed Trout Streams #1 and #4 and the east basin of Black Dog Lake.	
City Classification: ➢ Unnamed Trout Streams #1 and #4; Protection, High Priority ➢ East Black Dog Lake; High Priority	
Intended Use: ➢ Unnamed Trout Streams #1 and #4 – protection and research ➢ Black Dog Lake – Passive recreation, wildlife observation	
Problems	➢ **Solutions**
1. The Lower River Hills Catchment is at risk of significant erosion from stormwater discharges form the upstream River Hills Subwatershed.	➢ 1. Each of the outfall points will require special erosion control and energy dissipation measures to prevent downstream erosion.
2. The suitability of Unnamed Trout Streams #1 and #4 is unknown, limiting the commitment to undertake full restoration efforts.	➢ 2a A cooperative effort is needed between MnDOT, Eagan, the Lower Minnesota River Watershed District and the City to implement appropriate BMPs to minimize downstream impacts. 2b. A Focus initial investigative efforts on habitat assessments including thermal stability of the stream, flow monitoring, aquatic invertebrate surveys and chemical analysis.

Table 84 - Northeast Subwatershed Implementation Plan

Activity Steps	Resources	Measurement	Target Date	Est. Cost
1. Use existing data on east basin of Black Dog Lake as the basis to develop a future management plan	• Xcel data for Black Dog Lake • US Fish and Wildlife Service • Dakota County • Metropolitan Council • Lower Minnesota River Watershed District	• Completed management plan	2005	$15,000
2. Outfall points will require special erosion control and energy dissipation measures to prevent downstream erosion	• Northeast Burnsville Comprehensive Storm Water Study (SEH 2001) • City Street Reconstruction Program	• River Hills analysis and Construction	2002	See Table 76 #5
3. A cooperative effort is needed between MnDOT, Eagan, the Lower Minnesota River Watershed District and the City to implement appropriate BMPs to minimize downstream impacts to trout stream	• MnDOT • Eagan • Lower Minnesota River Watershed District • Undeveloped property owner(s) • Developers • Low Impact Development Techniques (see Appendix B) • DNR Trout Unit • Financial Incentives	• Written MOA • Development Agreement(s) • Implemented Improvements	2002 Ongoing 2004	$5,000 NA $45,000
4. Complete investigative efforts on Unnamed Trout Streams #1 and #4 including thermal stability of the stream, flow monitoring, aquatic invertebrate surveys and chemical analysis	• US Fish and Wildlife Service • Dakota County • Metropolitan Council • DNR Trout Unit • Lower Minnesota River Watershed District	• Installation of continuous monitoring thermal station • Complete in-field habitat analysis	2003 2003	$10,000 $10,000
5. Complete study to investigate storm water quality and treatment	• Water Quality Action Plan • Water Quality Action Plan	• Completed Study and Recommendations	2004	See Table 10 #5

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IMPLEMENTATION

The Implementation section is the final section of the Plan. It is intended to provide guidance in carrying out the Plan objectives. The implementation section summarizes capital improvement projects, studies and ongoing maintenance, inspection, monitoring and other management activities recommended for the years 2002 through 2016. Estimated costs of recommended actions and an implementation schedule are provided for each of the next fifteen years. Procedures for amending the Plan are also discussed.

The implementation plan is based on goal-driven action plans. The process of developing the action and implementation plans is based on four steps:

1. Development of goal statements consistent with Minnesota Rules Chapter 8410, the WMOs and Metropolitan Council;
2. Identification of issues or problems related to achieving the goals;
3. Identification of solutions corresponding to each of the issues; and
4. Development of specific action steps, including identification of resources, measurement, schedule and cost.

Based on the action plans from each Plan section, a process for accomplishing the goals of this WRMP is established.

IMPLEMENTATION PRIORITIES AND COSTS

The implementation plan includes identification and prioritization of capital improvements, administration, maintenance and inspections, permitting, plan amendments, financing alternatives, public involvement and monitoring programs. Prioritization of improvements was based on a review of all recommended actions for the 24 individual action plans (one for each of the 12 Plan goals and, one for each lake or subwatershed unit).

Implementation Costs

The financial goal for this WRMP is to establish equitable funding sources to pay for water resources management activities. For the activities called out in this Plan, planning-level estimates of capital expenditures have been made. Following a detailed analysis and prioritization process for the recommended capital improvement projects and ongoing activities of this Plan a 10-year project and activity implementation schedule was presented to City committees prior to adoption of the 2002 Plan. The 10-year Plan had an estimated total cost over the 10-years of

$24.6 million. While there was generally broad support for a 10-year implementation plan from 3 of 4 committees, there were also concerns for the financial impact of the Plan on industrial and commercial property owners. The Economic Growth Committee recommended a 20-year schedule. Council subsequently approved the plan with a 15-year implementation schedule and an estimated cost over the next fifteen years of $27.3 million (in 2002 dollars). The additional costs of the 15-year schedule, as compared to the 10-year schedule, result from the additional 5 years of annual operating costs and anticipated ongoing project costs (e.g., storm sewer replacement program and pond clean out program). The anticipated annual cost estimates specific to storm water utility funds are summarized in Table 85.

Relative to historical levels, the storm water utility fund was increased in 2001 and 2002 to help address the increased commitment to water resources management. It was also recognized that future increases could be needed to meet the needs of the Implementation Plan. Table 86 summarizes the 2002 Estimated Expenditures, projects on an annual basis for years 2002 through 2016. Table 86 also includes the actual expenditures for the years 2002 through 2006 and revised annual expenditures based on the 2008 WRMP Update.

Table 85 - Implementation Plan Summary.

Year	2002 WRMP Estimated Expenditures ($ Million) (1)	Actual (A) or Revised (R) Expenditures ($ Million) (2)
2002	1.76	1.34 (A)
2003	1.57	1.66 (A)
2004	1.59	1.47 (A)
2005	1.71	1.36 (A)
2006	1.89	1.97 (A)
2007	1.76	3.12 (R)
2008	1.93	5.48 (R)
2009	1.89	1.04 (R)
2010	1.89	3.97 (R)
2011	1.89	1.07 (R)
2012	1.89	1.37 (R)
2013	1.89	0.82 (R)
2014	1.89	0.82 (R)
2015	1.89	0.82 (R)
2016	1.89	0.82 (R)
Total	**27.3**	**27.1 (R)**

1. All values are in 2002 dollars.
2. Values are actual dollars through 2006 and estimated amounts for 2007-2016 in 2006 dollars.

There is strong consensus that the new costs should be apportioned based on overall property contributions to runoff and pollutant loading. This is the current philosophy behind the City's storm water utility. In addition, a renewed focus will be placed on securing grants, enlisting regional watershed funding, seeking local partnerships with adjacent communities and investigating other financing mechanisms like Lake Improvement Districts.

The Implementation Plan is not a hard and fast commitment to complete each and every activity in the time frame suggested. Rather, it is a suggested course of action that will accomplish the major goal of this plan, to accommodate growth in the community while protecting and improving Burnsville's water resources. The Implementation Plan should be reviewed on an annual basis. At that time, each proposed improvement is to be reconsidered, City budgets adjusted, and additional improvement projects or management activities added to or removed from the program.

AMENDMENTS TO THE PLAN

Amendment Procedures

The Water Resources Management Plan is intended to extend through the year 2016. For the plan to remain dynamic, an avenue must be available to implement new information, ideas, methods, standards, management practices, and any other changes which may affect the intent and/or results of the Plan. Amendment proposals can be requested any time by any person or persons either residing or having business within the City.

Request for Amendments

Written requests for a plan amendment are submitted to the City staff. The request shall outline the need for the amendment as well as additional materials that the City will need to consider before making its decision.

Staff Review

A decision is made as to the validity of the request. Three options exist;

- Reject the amendment;
- Accept the amendment as a minor issue, with minor issues collectively added to the plan at a later date; and
- Accept the amendment as a major issue, with major issues requiring an immediate amendment. In acting on an amendment request, staff shall recommend to the City council whether or not a public hearing is warranted.

Council Consideration

The amendment and the need for a public hearing shall be considered at a regular or special Council meeting. Staff recommendations should also be considered before a decision(s) on an appropriate action(s) is made.

Public Hearing and Council Approval

This step allows for public input based on public interest. Council shall determine when the public hearing should occur in the process. Based on the Public hearing, Council could approve of the amendments.

WMO Approval

All proposed amendments must be reviewed and approved by the appropriate WMOs prior to final adoption of the amendments.

Council Adoption

Final action on an amendment, following approval by the WMOs is Council adoption. However, prior to the adoption, an additional public hearing may be held to review the Plan changes and notify the appropriate stakeholders.

Annual Report to Council

A brief annual report will be completed by City staff summarizing water resource management activities that have been completed over the past year. Recommended changes to the Plan will not necessarily require individual amendments, but instead may be considered when the plan is brought up to date. The annual report should be completed by July 1st of each year to allow implementation items to be considered in the normal budget process. To the extent practicable and to avoid duplication of efforts, the annual report will be coordinated with the Phase II NPDES program annual report that must be submitted to MPCA by March 10th of each year. Copies of the report should be filed with Dakota County and the WMOs. The annual update can also serve as an important public information tool and a summary should be published in the City's newsletter.

The Plan will remain in effect through 2016. The Plan should then be reviewed for consistency with current water resources management methods. At this time, all annual reports and past amendments can be added to the document. Depending on the significance of changes, a new printing of the plan may be appropriate.

Staff's intent is to revisit the goals, policies, tools and progress of the Plan on a three-year basis. The three-year average water quality results will be reviewed, the effectiveness of regulatory programs will be evaluated, and the success of public improvement projects will be assessed. Based on the three-year reviews, the WRMP will be updated to produce a truly dynamic plan.

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Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2002											
2002	10	1	1	Water Quantity			E	-	NA	Complete improvements to reduce flood levels and duration of flooding on Earley Lake	Completed
2002	10	2	1	Water Quantity			E	$15,000	CIP #8	Northeast Burnsville Drainage Feasibility Study	Completed
2002	10	2	2	Water Quantity			E	-	NA	Prepare construction contracts	Completed
2002	10	4	1	Water Quantity			E	-	NA	Identify known flooding and drainage problem areas using GIS mapping of problem area	Completed
2002	10	4	2	Water Quantity			E	$50,000	CIP #10	Implement local drainage improvements	Completed
2002	13	1	1	Water Quality			NR	-	NA	Continue citizen participation in measurement of lake quality/grade - CAMP	Completed
2002	13	2	1	Water Quality			NR	$13,000	Oper	Implement City Goose Management Program	Completed
2002	13	6	1	Water Quality			NR, E	$50,000	CIP #7	Construct storm water bioretention area (LID treatment) in Heart of the City Block #1	Storm water pond constructed
2002	13	7	1	Water Quality			NR, E	Table 80-2	NA	Provide treatment to address potential discharge of storm water to future Quarry Lake	Land acquisition for a pond planned for 2008
2002	13	8	1	Water Quality			NR, E	Table 61-4	NA	Encourage development to use LID techniques and alternative landscape practices	Ongoing
2002	15	1	1	Erosion Cont.			E	-	NA	Annual erosion control inspection process	Completed
2002	15	3	1	Erosion Cont.			E	$25,000	Oper	Add half-time staff position to work on erosion control activities (1st year of staff position)	Added to Engineering Technician Responsibilities - General Fund Expense - $38,000
2002	18	1	1	Wetlands			NR	-	NA	Continue citizen participation in stewardship of wetland resources - WHMP	Ongoing
2002	18	2	1	Wetlands			NR	-	NA	Prepare and mail newsletter for public education and information	Completed
2002	18	4	1	Wetlands			NR	-	NA	Assess opportunities for wetland restoration and banking in parks and vacant parcels	Completed
2002	20	1	1	Pub Info & Ed			NR	-	NA	Conduct public education program for understanding of goals and policies of Water Resources Management Plan	Completed
2002	20	2	1	Pub Info & Ed			NR	-	NA	Involve civic, neighborhood groups, business, industry and schools to promote water quality activities	Ongoing
2002	20	3	1	Pub Info & Ed			NR	-	NA	Expand the City's website related to the information in the Water Resources Management Plan	Completed
2002	20	4	1	Pub Info & Ed			NR	-	NA	Continue to publicize support for existing Parks and Natural resources Commission	Ongoing
2002	20	5	1	Pub Info & Ed			NR	-	NA	Pursue education related grants	Ongoing
2002	20	6	1	Pub Info & Ed			NR	-	NA	Continue citizen program to assist in wetland monitoring	Ongoing
2002	20	7	1	Pub Info & Ed			NR, E	-	NA	Involve stakeholders in making decisions about water resources	Ongoing
2002	25	1	1	Monitoring			NR	$25,000	Oper	Implement monitoring plan to track water quality trends and monitor the effectiveness of programs.	Implemented - $25,000 increase to SWM Operating Budget
2002	25	2	1	Monitoring			NR	-	NA	Establish process for electronic access to GIS database monitoring data	Completed
2002	27	1	2	Maintenance			NR	$200,000	CIP #11	Implement Pond cleanout program	Completed
2002	27	3	1	Maintenance			NR, PW	-	NA	Develop written street sweeping program for areas contributing to protected class wetlands	Completed
2002	27	3	2	Maintenance			NR, PW	-	NA	Annual field review of street sweeping program	Completed
2002	27	4	1	Maintenance			PW	-	NA	Continue annual street sweeping program	Completed
2002	27	5	1	Maintenance			PW	-	NA	Study salt application alternatives for snow/ice control	Completed
2002	27	6	1	Maintenance			E	-	NA	Establish private maintenance and monitoring agreements	Completed
2002	27	7	1	Maintenance			E	Table 76-4-2	NA	Storm sewer replacement program, new/upgraded storm sewer systems	Completed
2002	31	1	1	Rec, F & W			NR	$8,000	CIP #7	Manage E. Milfoil, Purple Loosestrife and other invasive plant and animal species - Identify areas	Completed
2002	31	1	2	Rec, F & W			NR	$2,000	CIP #7	Manage E. Milfoil, Purple Loosestrife and other invasive plant and animal species - Policy and Finance	Completed
2002	31	1	4	Rec, F & W			NR	Table 13-2	Oper	Implement goose management program	Completed - $13,000 / year SWM operating budget expense
2002	33	1	1	Ground Water			E	-	NA	Prepare wellhead protection plan in accordance with MN Dept. of Health regulations	Completed
2002	36	1	1	Regulatory			E	-	NA	Prepare storm water management ordinance	Completed
2002	36	2	1	Regulatory			NR, P	-	NA	Finalize shoreland ordinance revisions	Completed
2002	36	3	1	Regulatory			E	-	NA	NPDES Phase II final rules received from MPCA	Completed
2002	36	4	1	Regulatory			NR, E	-	NA	Ongoing review of Low-impact development techniques for proposed development projects	Ongoing planning effort
2002	40	1	1	Finance			E, NR	-	NA	Complete study of planned expenditures compared to available financing	Completed
2002	40	1	2	Finance			E, NR	-	NA	Annual budgeting and plan implementation review	Completed
2002	40	2	1	Finance			NR	-	NA	React to requests for formation of Lake Improvement Districts	Ongoing
2002	51	1	1		Vermillion R.	Lk. Alimagnet	NR	$25,000	CIP #7	Complete re-evaluation/diagnostic study of Lake Alimagnet ($50,000 total - Apple Valley also $25,000)	Completed
2002	51	2	1		Vermillion R.	Lk. Alimagnet	NR	-	NA	Annual operation of aeration system with Apple Valley ($3,000 total - Apple Valley also $1,500)	Completed
2002	55	1	1		Black Dog	Lac Lavon	NR	Table 31-1	NA	Partner with Apple Valley to continue program to minimize spread of Eurasian watermilfoil - treatment as needed	Completed
2002	55	1	2		Black Dog	Lac Lavon	NR	-	NA	Partner with Apple Valley to continue program to minimize spread of Eurasian watermilfoil - annual habitat assessment	Completed
2002	58	3	1		Black Dog	Keller Lake	NR	Table 31-1	NA	Consider weed harvesting to enhance recreational activities - treatment as needed and annual assessment	Completed
2002	61	1	1		Black Dog	Crystal Lake		-	NA	Diagnostic study to document quality problems and solutions	Completed
2002	61	1	2		Black Dog	Crystal Lake		Black Dog Plan	NA	Implement solutions of diagnostic study	Completed
2002	61	4	1		Black Dog	Crystal Lake	NR, E	$30,000	CIP #7	Approved development plans for LID, promote infiltration. Implement Projects. Matching MEP Grant funds.	Completed
2002	61	5	1		Black Dog	Crystal Lake	NR	Table 31-1	NA	Implement a program to minimize spread of Eurasian watermilfoil - treatment as needed, annual assessment	Completed
2002	69	7	1		Black Dog	Sunset Pond	P, NR, E	-	NA	Ongoing: encourage future land owners/developers to incorporate storm water treatment on adjacent parcels	Ongoing planning effort
2002	69	9	1		Black Dog	Sunset Pond	E	$300,000	CIP #7	Earley Lake Improvements - Diversion Structure and Earley Lake Estates Pond	Completed
2002	72	1	1		Black Dog	Central	E, NR	$75,000	CIP #7	Implement LID techniques for re-developing areas including Heart of the City. Also matching $75,000 MEP Grant funds.	Completed
2002	72	2	1		Black Dog	Central	NR	Table 82-1	NA	Design and Construct additional storm water treatment and wetland mitigation at the Cliff-Fen Park	Completed
2002	74	2	1		Black Dog	East	E	-	NA	Install staff gauge on pond at I35E and Co. Rd. 11	Project determined to be not necessary
2002	74	2	2		Black Dog	East	E	-	NA	Ongoing pond level analysis (staff gauge)	Project determined to be not necessary
2002	76	4	1		Black Dog	River Hills	E	-	NA	Complete plans for construction of Hayes Dr./27th Ave. street recon/storm sewer improvements	Completed
2002	76	4	2		Black Dog	River Hills	E	$545,000	CIP #8	Complete construction of Hayes Dr./27th Ave. street recon/storm sewer improvements	Completed
2002	76	5	1		Black Dog	River Hills	E	$5,000	CIP #8	Study scour protection devices and sedimentation/infiltration ponding at end of storm sewers below bluff	Completed
2002	78	2	1		Black Dog	Murphy Han.	P, E, NR	Table 13-6	NA	Development agreements requiring Low Impact Development Techniques in southwest Burnsville	Ongoing
2002	78	3	1		Black Dog	Murphy Han.	I	-	NA	Enforce in place Individual Sewage Treatment System regulations	Ongoing
2002	78	4	1		Black Dog	Murphy Han.	E	-	NA	Use street design concepts and design standards relating to LID techniques	Ongoing
2002	80	1	1		Lower MN	Northwest	E	-	NA	Limit direct discharges from future development to future Quarry Lake	Ongoing planning effort
2002	80	5	1		Lower MN	Northwest	E	-	NA	Maintain private levee between MN River and Quarry Lake. Complete documentation in PUD.	Ongoing planning effort
2002	80	8	1		Lower MN	Northwest	NR	$52,000	CIP #9	Continuing activities of the Kraemer Nature Preserve Master Plan	Completed
2002	82	1	1		Lower MN	Black Dog Lk	E, NR	$670,000	CIP #4	Design and Construct additional storm water treatment and wetland mitigation at the Cliff-Fen Park	Completed
2002	82	3	1		Lower MN	Black Dog Lk	NR	-	NA	Ongoing: Incorporate precautions into development plans and agreements to minimize downstream impacts	Ongoing planning effort
2002	84	2	1		Lower MN	Northeast	E, NR	Table 76-5	NA	Analyze and construct storm sewer outfall protection to prevent downstream erosion	Completed
2002	84	3	1		Lower MN	Northeast	NR	$5,000	CIP #7	Written MOA between MnDOT, Eagan, the Lower Minnesota River Watershed District	Determined not needed as 2-cell system contains 100-year event without discharge

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2002	84	3	2		Lower MN	Northeast	NR	-	NA	Ongoing: Incorporate BMPs into development agreements to minimize impacts to trout stream	Ongoing planning effort
								$2,095,000			

2002 SUMMARY	BUDGET	ACTUAL
Storm Water Utility - Capital Expenses	$1,697,000	$1,339,209
2002 Operating Expenses	$63,000	$38,000
Previous Years Operating Expenses	$0	$0
TOTAL	$1,760,000	$1,377,209

2003

2003	10	2	3	Water Quantity			E	$400,000	CIP #2	Construction of Northeast Burnsville Storm Sewer Improvements - South River Hills	Completed
2003	10	3	1	Water Quantity			E, NR	$35,000	CIP #7	Update hydrologic models for Credit R., Black Dog Fen and trout stream tributaries to minimize peak flow. Tech memo.	Completed
2003	10	4	2	Water Quantity			E	$50,000	CIP #10	Implement local drainage improvements	Completed
2003	10	5	1	Water Quantity			NR	Table 13-4	NA	Develop model site to establish/promote the use of alternative landscape features and innovative storm water practices	Completed
2003	10	6	1	Water Quantity			E	$110,000	CIP #8	Implement local drainage improvements - increase Oliver Court storm sewer capacity	Completed with 2001 Street Reconstruction Project
2003	13	3	1	Water Quality			NR	Table 27-1-1	NA	Develop/implement program to investigate nutrient characteristics of existing ponds on a prioritized basis	Ongoing
2003	13	4	1	Water Quality			NR	Table 61-4, 72-1	NA	Ongoing work to develop model landscape/storm water practices (see Table 61-4 and 72-1)	Ongoing
2003	15	2	1	Erosion Cont.			E	$15,000	CIP #7	Develop an erosion and sediment control guidance manual	Utilized Existing Publications
2003	27	1	2	Maintenance			NR	$200,000	CIP #11	Implement Pond cleanout program	Completed
2003	27	2	1	Maintenance			E	$10,000	Oper	Acquire/write/preserve easements for the purpose of maintenance	Ongoing In-house project
2003	33	4	1	Ground Water			NR	Table 13-4	NA	Develop model site to promote and monitor the effectiveness of alternate landscape features - acquired site	Completed
2003	36	3	2	Regulatory			E	$70,000	Other	NPDES Phase II permit application	Completed
2003	40	3	1	Finance			E, NR	-	NA	Establish financial incentives program for commercial and industrial property owners using good storm water practices	Implemented in targeted areas such as the HOC
2003	42	1	1	Land Use			P, E, NR	-	NA	Develop and complete disconnected impervious policy	Postponed Indefinitely
2003	42	2	1	Land Use			P	-	NA	Modify existing zoning to move impervious cover requirements to a density standards section	Postponed Indefinitely
2003	61	2	1		Black Dog	Crystal Lake	NR	$175,000	CIP #7	Implement water quality improvement projects	Completed
2003	69	3	1		Black Dog	Sunset Pond	NR	-	NA	Development agreements with commercial property and Burnsville Center tributary to Earley Lake	Completed
2003	69	8	1		Black Dog	Sunset Pond	E	$250,000	CIP #5	Twin Lake Outlet improvements	Completed
2003	72	2	2		Black Dog	Central	NR	-	NA	Evaluate health of fen - Black Dog Fen Catchment	Completed
2003	76	2	1		Black Dog	River Hills	E	-	NA	Complete plans for Raleigh Drive storm sewer improvements - minimum measures of Feasibility Study	Rescheduled for completion in 2008 LDM Project.
2003	76	3	1		Black Dog	River Hills	E	-	NA	Complete plans for South River Hills storm sewer improvements	Completed with 2001 and 2004 Street Reconstruction Projects
2003	76	3	2		Black Dog	River Hills	E	Table 10-2	NA	Complete construction of South River Hills storm sewer improvements	Completed with 2001 and 2004 Street Reconstruction Projects
2003	78	1	1		Black Dog	Murphy Han.	E, NR	-	NA	Document need for more retention/infiltration in Credit River Watershed to prevent future problems.	Ongoing planning effort
2003	80	2	2		Lower MN	Northwest	E, NR	$675,000	CIP #1	Industrial Park Pond - complete plans and specifications, construction (property acquisition by donation)	Re-scheduled for 2008-2012
2003	80	4	1		Lower MN	Northwest	E	$10,000	CTS CIP	Completed feasibility for Embassy Road outfall flood closure and pump bypass structure	Project completed by MN DOT
2003	80	4	2		Lower MN	Northwest	E	$10,000	CTS CIP	Completed plans for Embassy Road outfall flood closure and pump bypass structure	Project completed by MN DOT
2003	80	8	1		Lower MN	Northwest	NR	$24,000	CIP #9	Continuing activities of the Kraemer Nature Preserve Master Plan	Completed
2003	82	6	1		Lower MN	Black Dog Lk	NR	$10,000	CIP #7	Installation of continuous monitoring thermal station on Trout Stream # 7	Monitored for 2 years
2003	82	6	2		Lower MN	Black Dog Lk	NR	$10,000	CIP #7	Complete in-field habitat analysis of Trout Stream # 7	Postponed indefinitely
2003	84	4	1		Lower MN	Northeast	NR	$10,000	CIP #7	Installation of continuous monitoring thermal station on Trout Stream # 4	Monitored for 2 years
2003	84	4	2		Lower MN	Northeast	NR	$10,000	CIP #7	Complete in-field habitat analysis of Trout Stream # 4	Postponed indefinitely
								$2,074,000			

2003 SUMMARY	BUDGET	ACTUAL
Storm Water Utility - Capital Expenses	$1,494,000	$1,656,162
2003 Operating Expenses	$10,000	$0
Previous Years Operating Expenses	$63,000	$38,000
TOTAL	$1,567,000	$1,694,162

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2004											
2004	10	4	2	Water Quantity			E	$50,000	CIP #10	Implement local drainage improvements	Completed
2004	10	5	2	Water Quantity			NR	Table 13-4	NA	Monitoring data and report on model site - alternative landscape features and innovative storm water practices	Completed
2004	13	5	1	Water Quality			NR	$25,000	CIP #7	Develop specific water quality enhancement strategies for Burnsville Center	Completed
2004	20	8	1	Pub Info & Ed			NR, E	-	NA	Explore an annual City Council recognition program for environmental projects completed in the City	Decided to utilize existing City recognition programs
2004	27	1	1	Maintenance			NR	$40,000	Oper	Develop and implement annual inspection program for documentation of the condition of ponds and drainage system	Hired .5 FTE Natural Resources Technician - $30,000 increase to SWM operating Budget
2004	27	1	2	Maintenance			NR	$200,000	CIP #11	Implement Pond cleanout program	Completed
2004	27	1	3	Maintenance			PW	$50,000	Oper	Maintenance and equipment acquisition based on annual inspections and work orders	Completed - re-evaluated annually with budget
2004	27	4	2	Maintenance			PW	$60,000	Oper	Staff to operate sweepers (hired 2003 - annual)	Hired 1.0 FTE Street Maintenance Employee - $65,000 increase to SWM operating budget
2004	27	4	3	Maintenance			PW	$48,000	Fleet CIP	Purchase street sweeping equipment - vacuum sweeper. Lease purchase agreement ($48,000/year - 5 years)	Completed
2004	27	5	2	Maintenance			PW	-	Oper	Implement snow and ice control program to reduce sand use. Evaluation of street conditions and sand use.	Completed
2004	27	7	1	Maintenance			E	$400,000	CIP #8	Annual storm sewer maintenance and replacement program	Completed
2004	31	1	3	Rec, F & W			NR	$25,000	Oper	Manage E. Milfoil, Purple Loosestrife and other invasive plant and animal species - Control and Reduction	Implemented Aquatic Plant Mgmt Program - $45,000 increase to SWM operating budget
2004	31	2	1	Rec, F & W			NR	$10,000	CIP #7	Explore aquatic weed harvesting options - study and recommendations	Postponed to 2009
2004	33	2	1	Ground Water			E	$10,000	CIP #7	Complete private well and ISTS data and update into GIS	Well data available from Dakota County. Staff to review ISTS data in 2008.
2004	33	4	2	Ground Water			NR	Table 13-4	NA	Developed model site and monitoring (see 2003 #4-1)	Completed
2004	33	5	1	Ground Water			E	$25,000	Water Util	Update Water Contingency and Conservation Plan	Water Emergency and Conservation Plan being completed by City staff in 2008.
2004	33	6	1	Ground Water			E, NR	-	NA	Evaluate policies and approaches to protect water resources near sand and gravel operations (active and inactive)	Ongoing planning effort
2004	36	3	3	Regulatory			E	$25,000	Other	NPDES Phase II storm water permit application (storm drainage system information) and comply with TMDLs	Completed
2004	40	3	2	Finance			E, NR	-	NA	Implement financial incentives program for commercial and industrial property owners using good storm water practices	Implemented in targeted areas such as the HOC
2004	42	1	2	Land Use			P, E, NR	-	NA	Publicize/educate on disconnected impervious policy, include policy in ordinance	Postponed indefinitely
2004	51	3	1		Vermillion R.	Lk. Alimagnet	NR	$35,000	CIP #7	Implement water quality improvement projects	Completed
2004	51	4	1		Vermillion R.	Lk. Alimagnet	NR	-	NA	Implement modular treatment system(s) (filters) at existing storm water inlets as a pilot project	Will be considered with Maintenance Ctr expansion
2004	55	3	1		Black Dog	Lac Lavon	NR	$8,000	CIP #7	Completed assessment of fish populations by fisheries staff	Completed on targeted lakes
2004	58	1	1		Black Dog	Keller Lake	NR	$10,000	CIP #7	Study treatment facilities, treatment capacity and treatment potential in conjunction with Crystal Lake study	Completed
2004	61	2	1		Black Dog	Crystal Lake	NR	$250,000	CIP #7	Implement water quality improvement projects	Completed
2004	69	3	2		Black Dog	Sunset Pond	NR	-	NA	Prepare grant applications for Burnsville Center LID practices to reduce pollutants to Earley Lake	Completed
2004	69	4	1		Black Dog	Sunset Pond	E	Table 13-6	NA	Compile flood proofing measures at Judicial Pond	Completed
2004	69	6	1		Black Dog	Sunset Pond	E	$15,000	CIP #8	Design improvements to Sunset Pond and Early Lake outlet allow City to control downstream discharge	Postponed indefinitely
2004	69	6	2		Black Dog	Sunset Pond	E	$75,000	CIP #8	Construct Sunset Pond and Early Lake outlet improvement to allow City to control discharge for maintenance activities	Postponed indefinitely
2004	76	2	2		Black Dog	River Hills	E	$90,000	CIP *	Raleigh Drive storm sewer improvements - minimum measures of Feasibility Study	Postponed to 2008
2004	80	2	2		Lower MN	Northwest	E, NR	$175,000	CIP #1	Industrial Park Pond - complete construction	Re-scheduled for 2008 - 2012
2004	80	4	3		Lower MN	Northwest	E	$175,000	CTS CIP	Completed construction for Embassy Road outfall flood closure and pump bypass structure	Project completed by MN DOT
2004	80	8	1		Lower MN	Northwest	NR	$19,000	CIP #9	Continuing activities of the Kraemer Nature Preserve Master Plan	Completed
2004	84	3	3		Lower MN	Northeast	NR	$45,000	CIP #7	Implemented developer improvements to minimize downstream impacts to trout stream	Ongoing
2004	84	5	1		Lower MN	Northeast	NR	Table 10-5	NA	Complete study of Northeast subwatershed to investigate water quality and treatment	Postponed indefinitely
								$1,865,000			

2004 SUMMARY	BUDGET	ACTUAL
Storm Water Utility - Capital Expenses	$1,340,000	$1,469,027
2004 Operating Expenses	$175,000	$140,000
Previous Years Operating Expenses	$73,000	$38,000
TOTAL	$1,588,000	$1,647,027

2005											
2005	10	4	2	Water Quantity			E	$50,000	CIP #10	Implement local drainage improvements	Completed
2005	13	6	2	Water Quality			NR, E	$200,000	CIP #7	Implement water quality improvement projects	Completed
2005	27	1	1	Maintenance			NR	-	Oper	Develop and implement annual inspection program for documentation of the condition of ponds and drainage system	Completed - ongoing
2005	27	1	2	Maintenance			NR	$250,000	CIP #11	Implement Pond cleanout program	Completed
2005	27	7	1	Maintenance			E	$400,000	CIP #8	Annual storm sewer maintenance and replacement program	Completed
2005	31	2	2	Rec, F & W			NR	$100,000	Fleet CIP	Purchase aquatic plant harvesting equipment	Postponed to 2009
2005	33	3	1	Ground Water			NR, P	$10,000	CIP #7	Complete packet for developers on alternative landscape design guidelines	Completed
2005	42	3	1	Land Use			P	-	NA	Develop parking standards, incentives for less parking area	Parking standards updated to reduce parking area
2005	51	3	2		Vermillion R.	Lk. Alimagnet	NR	$140,000	CIP #7	Implement water quality improvement projects	Completed
2005	69	5	1		Black Dog	Sunset Pond	E	-	NA	Complete field investigation for dam safety analysis	Postponed to 2007
2005	74	1	1		Black Dog	East	E	$15,000	CIP #8	Feasibility study to divert two residential areas west of Co. Rd. 11 into existing pond at 35E and Co. Rd. 11	Postponed indefinitely
2005	74	1	2		Black Dog	East	E	$345,000	CIP *	Prepare plans and commence construction to divert 58 acres from Terrace Oaks to pond at I35E and County Rd 11.	Postponed indefinitely
2005	78	1	2		Black Dog	Murphy Han.	E, NR	-	NA	Water level monitoring to evaluate the need for more retention/infiltration in the watershed	Postponed indefinitely
2005	80	8	1		Lower MN	Northwest	NR	$19,000	CIP #9	Continuing activities of the Kraemer Nature Preserve Master Plan	Completed
2005	82	5	1		Lower MN	Black Dog Lk	NR	$15,000	CIP #7	Completed Management Plan for Black Dog Lake - west basin	Postponed indefinitely
2005	84	1	1		Lower MN	Northeast	NR	$15,000	CIP #7	Completed Management Plan for Black Dog Lake - east basin	Postponed indefinitely
								$1,559,000			

2005 SUMMARY	BUDGET	ACTUAL
Storm Water Utility - Capital Expenses	$1,457,000	$1,360,207
2005 Operating Expenses	$0	$0
Previous Years Operating Expenses	$248,000	$178,000
TOTAL	$1,705,000	$1,538,207

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2006											
2006	10	4	2	Water Quantity			E	$50,000	CIP #10	Implement local drainage improvements	Completed
2006	27	1	2	Maintenance			NR	$250,000	CIP #11	Implement Pond cleanout program	Completed
2006	27	7	1	Maintenance			E	$400,000	CIP #8	Annual storm sewer maintenance and replacement program	Completed
2006	51	3	2		Vermillion R.	Lk. Alimagnet	NR	$400,000	CIP #7	Implement water quality improvement projects	Completed
2006	69	1	1		Black Dog	Sunset Pond	NR	$30,000	CIP #7	Prepare a nutrient loading study of Twin Ponds	Completed
2006	69	3	3		Black Dog	Sunset Pond	NR	$150,000	CIP #7	Develop Low Impact, on-site stormwater techniques in Earley Lake tributary area	Completed
2006	74	1	2		Black Dog	East	E	$450,000	CIP *	Continue construction to divert 58 acres from Terrace Oaks to pond at I35E and County Rd 11.	Postponed indefinitely
2006	80	8	1		Lower MN	Northwest	NR	$10,000	CIP #9	Continuing activities of the Kraemer Nature Preserve Master Plan	Completed
2006	69			Water Quality	Black Dog	Earley Lake	NR	$1,000,000	SWM/ASMT	Implement Earley Lake Study Projects - Burnsville Center Area Ponding Project	Land Acquired for Pond at Southcross and Burnhaven
2006	82	2	1		Lower MN	Black Dog Lk	E, NR	-	NA	Evaluate manually operated control structure at Black Dog Fen outlet railroad crossing culvert	Postponed to 2011
								$2,740,000			

2006 SUMMARY	BUDGET	ACTUAL
Storm Water Utility - Capital Expenses	$2,740,000	$1,973,502
2006 Operating Expenses	$0	$0
Previous Years Operating Expenses	$248,000	$178,000
TOTAL	$2,988,000	$2,151,502

2007											
2007	10	4	2	Water Quantity			E	$155,000	02-SWM	Implement lateral drainage modifications program	
2007	13			Water Quality			NR	$20,000	01-SWM	General water quality improvement projects	
2007	51			Water Quality	Vermillion	Alimagnet	NR	$390,000	16-SWM	Implement Lake Alimagnet Study project - Pond 1A improvements	
2007	51			Water Quality	Vermillion	Alimagnet	NR	$33,000	15-SWM	Implement Lake Alimagnet water quality improvement projects in partnership with Apple Valley (ongoing)	
2007	69			Water Quality	Black Dog	Wood Pond	NR	$30,000	22-SWM	Complete Wood Pond Water Qaulity Study	
2007	69			Water Quality	Black Dog	Twin Lakes	NR	$70,000	19-SWM	Implement Twin Lakes Study Projects	
2007	69			Water Quality	Black Dog	Earley Lake	NR	$30,000	20-SWM	Implement Earley Lake Study Projects	
2007	69			Water Quality	Black Dog	Earley Lake	NR	$2,800,000	SWM/ASMT	Implement Earley Lake Study Projects - Burnsville Center Area Ponding Project	
2007	27	1	2	Maintenance			E	$300,000	04-SWM	Implement Pond cleanout program / outfall improvements	
2007	74	1	2	Water Quantity	Black Dog	East	PW	$605,000	03-SWM	Terrace Oaks Park Drainage Diversion Project	Postponed indefinitely
2007	80	8	1		Lower MN	Northwest	NR	$53,000	15-SWM	Implement Kraemer Nature Preserve Master Plan	
2007				Planning			NR, E	$100,000	14-SWM	Update WRMP, Update NPDES Permit, Complete Non-degradation Study	
2007	25	2	2	Monitoring			NR	$0		Adopted process (and annual maintenance of data acquisition model)	Will complete using in-house staff
2007	27	7	1	Maintenance			E	$375,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2007	55	2	2		Black Dog	Lac Lavon	NR	$40,000	18-SWM	Implement practices to reduce runoff and improve water quality in Lac Lavon	
2007	69	5	2 & 3		Black Dog	Sunset Pond	E	$18,000	11-SWM	Prepare a dam break model analysis and dam safety report for Sunset Pond	
2007	82	4	1		Lower MN	Black Dog Lk	E, NR	$0		Design storm water basin/sediment-trapping device upstream existing railroad grade culvert	Project postponed indefinitely
								$5,019,000			

2007 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$3,119,000	
Special Assessments	$1,900,000	
Previous Years Operating Expenses	$178,000	
TOTAL	$5,197,000	

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2008											
2008	13			Water Quality			NR	$20,000	01-SWM	General Water Quality Improvement Projects	
2008	51			Water Quality	Vermillion	Alimagent	NR	$20,000	05-SWM	Implement Lake Alimagnet Study project - Pond 1A improvements	
2008	55	2	2	Water Quality	Black Dog	Lac Lavon	NR	$40,000	07-SWM	Implement practices to reduce runoff and improve water quality in Lac Lavon	
2008	27	7	1	Maintenance			E	$375,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2008	10	4	2	Water Quantity			E	$170,000	08-301 SWM	Implement Lateral Drainage Modifications	
2008	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2008	76	2	2	Water Quantitiy	Black Dog	River Hills	E	$100,000	08-306	Raleigh Drive Storm Sewer Improvements	
2008	76			Water Quantity	Black Dog	River Hills	E	$650,000	08-307	River Hills StormSewer Improvements	
2008	69			Water Quality	Black Dog	Wood Pond	NR	$50,000	11-SWM	Implement Wood Pond Water Quality Projects	
2008	13			Water Quality	Lower MN		E	$150,000	14-SWM	Install Green Roof on Surface Water Treatment Plant	
2008	69			Water Quality	BlackDog	Earley lake	NR/E	$2,600,000	09-SWM	Implement Earley Lake Study Projects - E-1B Watershed Improvements	
2008	80	2	2		Lower MN	Northwest	E, NR	$1,000,000	12-SWM	Purchase Land for MN River Quadrant Ponds (Industrial Park Pond Project)	
2008	69			Water Quality	Black Dog	Twin Lakes	NR	$10,000	Oper	Implement Twin Lakes Harvresting Program (ongoing)	
2008	51			Water Quality	Vermillion	Alimagnet	NR	$34,000	Oper	Implement Lake Alimagnet water quality improvement projects in partnership with Apple Valley (ongoing)	
2008	76	6	1		Black Dog	Keller Lake	NR		CIP #8	Construct manually-operated control structure at Black Dog Fen outlet railroad culvert	Postponed to 2011
								$5,519,000			

2008 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$5,475,000	
Special Assessments	$0	
Current Year Operating Expenses	$44,000	
Previous Years Operating Expenses	$178,000	
TOTAL	$5,697,000	

2009											
2009	13			Water Quality			NR	$20,000	01-SWM	General Water Quality Improvement Projects	
2009	27	7	1	Maintenance			E	$400,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2009	10	4	2	Water Quantity			E	$70,000	08-301 SWM	Implement Lateral Drainage Modifications	
2009	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2009	31	2	2	Rec, F & W			NR	$150,000	06-SWM	Purchase aquatic plant harvesting equipment	
2009	69			Water Quality	Black Dog	Wood Pond	NR	$50,000	11-SWM	Implement Wood Pond Water Quality Projects	
2009	13			Water Quality			NR	$50,000	10-SWM	Install Rain Gardens in Priority Watersheds	
2009	31	2	2	Rec, F & W			NR	$20,000	Oper	Staff to Operate Harvester	
								$1,060,000			

2009 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$1,040,000	
Special Assessments	$0	
Current Year Operating Expenses	$20,000	
Previous Years Operating Expenses	$222,000	
TOTAL	$1,282,000	

2010											
2010	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2010	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2010	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2010	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2010	13			Water Quality			NR	$50,000	10-SWM	Install Rain Gardens in Priority Watersheds	
2010	69			Water Quality	Black Dog	Wood Pond	NR	$50,000	11-SWM	Implement Wood Pond Water Quality Projects	
2007	69			Water Quality	Black Dog	Twin Lakes	NR	$2,250,000	08-SWM	Implement Twin Lakes Study Projects - NT-1 Watershed Improvements	
2010	27	1	2	Maintenance			NR, E	$800,000	04-SWM	Rupp Drive stormwater treatment ponds	
								$3,965,000			

2010 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$3,965,000	
Special Assessments	$0	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$4,207,000	

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2011											
2011	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2011	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2011	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2011	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2011	13			Water Quality			NR	$50,000	10-SWM	Install Rain Gardens in Priority Watersheds	
2011	69			Water Quality	Black Dog	Wood Pond	NR	$50,000	11-SWM	Implement Wood Pond Water Quality Projects	
2011	13			Water Quality	Black Dog	Sunset Pond	NR	$50,000	13-SWM	Complete Sunset Pond Water Qaulity Study	
2011	76	6	1		Black Dog		NR	$100,000	03-SWM	Construct manually-operated control structure at Black Dog Fen outlet railroad culvert	
2011	81				Lower MN		NR	$500,000	15-SWM	Construct MN River Quadrant Ponds	
								$1,565,000			

2011 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$1,065,000	
Special Assessments	$500,000	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$1,807,000	

2012											
2012	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2012	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2012	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2012	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2012	13			Water Quality			NR	$50,000	10-SWM	Install Rain Gardens in Priority Watersheds	
2012	69			Water Quality	Black Dog	Wood Pond	NR	$50,000	11-SWM	Implement Wood Pond Water Quality Projects	
2012	13			Water Quality	Black Dog	Sunset Pond	NR	$50,000	13-SWM	Implement Sunset Pond Water Quality Projects	
2012	81				Lower MN		NR	$500,000	15-SWM	Construct MN River Quadrant Ponds	
2012	82	4	2		Lower MN	Northeast	NR	$400,000	02-SWM	Construct Storm Water Basin/Sediment Trap Upstream of Existing Railroad Culvert (north of 27th & Hayes)	
								$1,865,000			

2012 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$1,365,000	
Special Assessments	$500,000	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$2,107,000	

2013											
2013	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2013	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2013	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2013	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
2013	13			Water Quality			NR	$0	SWM	Implement Water Quality Improvement Projects in Areas Identified by Studies/TMDL's	
								$815,000			

2013 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$815,000	
Special Assessments	$0	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$1,057,000	

2014											
2014	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2014	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2014	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2014	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
								$815,000			

2014 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$815,000	
Special Assessments	$0	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$1,057,000	

Table 86. Implementation Plan Summary

Year	Table	Activity	Task	Goal	Watershed	Subwatershed	Lead Dept. (2)	Budgeted Cost (3)	Funding Source (4)	Comments	Project Status as of 2007 Update (or noted date)
2015											
2015	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2015	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2015	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2015	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
								$815,000			

2015 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$815,000	
Special Assessments	$0	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$1,057,000	

2016											
2016	13			Water Quality			NR	$25,000	01-SWM	General Water Quality Improvement Projects	
2016	27	7	1	Maintenance			E	$410,000	01/02 Street	Annual storm sewer maintenance and replacement program (street rehabilitation & reconstruction)	
2016	10	4	2	Water Quantity			E	$80,000	08-301 SWM	Implement Lateral Drainage Modifications	
2016	13	6	2	Water Quality			E	$300,000	08-305	Implement Pond Cleanout/Outfall Improvement Program	
								$815,000			

2016 SUMMARY	BUDGET	ACTUAL
SW Utility - Capital Expenses	$815,000	
Special Assessments	$0	
Current Year Operating Expenses	$0	
Previous Years Operating Expenses	$242,000	
TOTAL	$1,057,000	

Future: 2017 -											
Future	58	4	1		Black Dog	Keller Lake	E	Future		Feasibility Study to increase outlet capacity for Keller Lake ($20,000)	
Future	61	3	1		Black Dog	Crystal Lake	E	Future		Design and construction of increased discharge capacity system at Crystal Lake ($1,600,000)	
Future	69	2	1		Black Dog	Sunset Pond	NR, E	Future		Develop conventional and LID practices to minimize, rate, volume and water quality impacts to North Twin Lake	2007 Study and have been included in the 2008 - 2016 Implementation tables.
Future	76	1	2		Black Dog	River Hills	E	Future		Complete plans and construction of River Hills Drive Catchment storm sewer - street recon ($375,000)	
Future	76	2	3		Black Dog	River Hills	E	Future		Raleigh Drive Catchment - additional (optional) improvements if needed	
Future	80	5	2		Lower MN	Northwest	E	Future		Complete Inspection report of existing EKS levee ($35,000)	
Future	80	5	3		Lower MN	Northwest	E	Future		Future repairs to EKS levee	
Future	80	6	1		Lower MN	Northwest	E	Future		Completed flood proofing of properties adjacent to Quarry Lake	
Future	80	7	1		Lower MN	Northwest	E	Future		Prepare study for flood dewatering system to maintain Quarry Lake levels	

Financing Summary 2002 - 2016

Year	Storm Water Utility (1)	Assessments	Operating
2002	$1,339,209	$0	$38,000
2003	$1,656,162	$0	$38,000
2004	$1,469,027	$0	$178,000
2005	$1,360,207	$0	$178,000
2006	$1,973,502	$0	$178,000
2007	$3,119,000	$1,900,000	$178,000
2008	$5,475,000	$0	$222,000
2009	$1,040,000	$0	$242,000
2010	$3,965,000	$0	$242,000
2011	$1,065,000	$500,000	$242,000
2012	$1,365,000	$500,000	$242,000
2013	$815,000	$0	$242,000
2014	$815,000	$0	$242,000
2015	$815,000	$0	$242,000
2016	$815,000	$0	$242,000
Total	**$27,087,107**	**$2,900,000**	**$2,946,000**

Other Agency Contributions	Amount
West Buck Hill Park Infiltration Basin - Metropolitan Counil Grant via BDWMO	$32,000
HOC LID Program - Metropolitan Counil Grant	$66,000
Cliff Fen Park Wetland Restoration and Pond - Metropolitan Counil Grant	$25,500
Crystal Lake Rainwater Gardens Project -Metropolitan Counil Grant	$117,000
Burnsville Center Area Ponding Project - Dakota County CDA Grant (2008)	$250,000
TOTAL	**$490,500**

Notes:
1. Annual figure for years 2002 to 2006 are actual expenditures. Figures for 2007 to 2016 represent storm utility funds designated for projects and activities listed in the table in 2007 dollars.
2. Lead Department Codes: P=Planning, E=Engineering, NR=Natural Resources, PW=Public Works, I=Inspection
3. The total budgeted costs in the main table may not match the budget in the Annual Summary (at left). The total budget includes costs that may be covered by other funding sources.
4. NA = No new costs associated with this item. Costs are considered part of existing program as of 2001. New operating costs (OPER) are assigned a cost only in the first year of the "new" cost and are then considered NA.

DEFINITIONS

Ambient Monitoring: Monitoring which focuses on baseline conditions and possible trends.

Aquatic Bench: A relatively flat sloped area or bench, generally having a width of 10- to 15-feet around the inside perimeter of a permanent pool that is approximately one-foot deep. Normally vegetated with emergent plants, the bench augments pollutant removal, provides habitat, conceals trash and water level drops, and enhances safety.

Aquatic Macrophytes: Rooted plants, either submerged, floating leafed, or emergent, and floating or floating leaf plants growing in public waters.

Aquatic Nuisance: The presence of leeches, snails that carry swimmer's itch, or any growth of aquatic vegetation or algae in such numbers or such abundance as to interfere with boating, swimming, or other aquatic recreation or beneficial water use.

Base Flood Elevation (BFE): The elevation shown on the Flood Insurance Rate Map for Zones AE, AH, A1-A30, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO, V1-V30, and VE that indicates the water surface elevation resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year (also commonly referred to as the 100-year event). See also Flood (and related definitions).

BMP (Best Management Practice): A combination of land use, conservation practices, and management techniques, which when applied to a unit of land will result in the opportunity for a reasonable economic return with an acceptable level of water quality or water quantity improvements.

Biodiversity: The variety of interrelated plant and animal life forms that occur in a water body.

Biological Monitoring: Periodic surveys of aquatic biota as an indicator of the general health of a water body. Biological monitoring surveys can span the trophic spectrum, from macro-invertebrates to fish species.

Bog: A mat, either attached to or resting on the bottom or floating, that is normally made up of dead organic matter held together by various types of living plants.

Buffer: The use of land, topography, difference in elevation, space, fences, or landscape planting to screen or partially screen a use or property from the vision of another use or property, and thus reduce undesirable influences such as: sight, noise, dust, and other external effects.

Buffer Strip: An area of vegetated ground cover abutting a water body that is intended to filter sediment or other pollutants from runoff.

Chlorophyll: The green pigment of plants necessary for photosynthesis, the process by which plants produce energy from sunlight.

Classification System: See Water Body Classification System.

Comprehensive Plan: As defined in Minnesota Statutes 394.21, the policies, statements, goals and interrelated plans for private and public land and water use, transportation and community facilities that guide future development (and growth).

Design Storm: A rainfall event of specified size and return frequency that is used to calculate the peak discharge rate at selected locations in a storm water system.

Detention: The temporary storage of runoff from rainfall and snowmelt events to control peak discharge rates and provide an opportunity for physical, chemical and biological treatment to occur.

Development: The construction, installation or alteration of any structure, the extraction, clearing or other alteration of terrestrial or aquatic vegetation, land or the course, current or cross section of any water body or water course or division of land into two (2) or more parcels (source: Burnsville City Code 10-8-2 and 10-4-2). See also re-development and new development.

De-Watering: Process used in detention/retention facilities whereby water is completely discharged or drawn down to a pre-established pool elevation by way of a perforated pipe. De-watering allows the facility to recover its design storage capacity in a relatively short time after a storm event. Dewatering is also used to temporarily remove surface or ground water from a construction site in order to allow the construction to take place.

Disturbed Area (or Disturbance): An area which is susceptible to erosion because the vegetative or non-vegetative cover has been temporarily or permanently removed or altered. This may be accompanied by mixing or removal of some soil horizons. For the purposes of this Plan and associated development standards, disturbed area includes all areas of the project site that are within the construction limits.

Drawdown: The gradual reduction in water level in a pond BMP due to the combined effects of outflow from an outlet structure, infiltration and evaporation.

Draining: The removal of surface water or ground water from the surface of the land or from within the soil profile.

Dredging: To enlarge or clean accumulated sediment out a water body, watercourse, or wetland.

Drop Structure: Placement of logs with a weir notch across an open channel. Water flowing through the weir creates a plunge pool downstream of the structure which dissipates energy and can also create beneficial fish habitat. A drop structures may also be a storm sewer manhole that has a drop of six to eight feet or more between the inlet pipe and outlet pipe invert elevations. Drop

structure manholes require a more detailed hydraulic analysis to evaluate the forces of flows in the structure and the potential reduction in flow capacity due to air entrainment.

Easement: A grant of one or more property rights by a property owner for use by the public, a corporation, or another person or entity.

Ecologically Harmful Exotic Species: Non-native aquatic plants or wild animals that can naturalize, have high propagation potential, are highly competitive for limiting factors, and cause displacement of, or otherwise threaten, native plants or native animals in their natural communities.

Ecosystem: A complex, interdependent system of humans, their built environments, other animals, plants and other organisms, and the natural physical and chemical environment upon which life depends.

Emergent Plant: An aquatic plant that is rooted in the sediment but whose leaves are at or above the water surface. Such wetland plants provide habitat for wildlife and waterfowl in addition to removing urban pollutants.

End of Pipe Control: Water quality control technologies suited for the control of existing urban storm water at the point of storm sewer discharge to a stream. Due to typical space constraints, these technologies are usually designed to provide water quality control rather than quantity control.

Erosion: The wearing away of land surface by the action of natural elements.

Excessive Algae Bloom: Some or all of the following conditions are present: algae population is dominated by glue-green algae; secchi disc reading is typically 2 feet or less; floating mats or scums of algae have accumulated on the downwind shore; or decomposition of accumulated algae has occurred releasing a blue-green pigment and causing an offensive odor.

Exfiltration: The downward movement of runoff through the bottom of an infiltration BMP into the subsoil.

Exotic: A species which is not native to Minnesota but has been introduced from other states or continents to Minnesota.

Extended Detention: A storm water design feature that provides for the gradual release of a volume of water over a period of 24 to 48 hours or more to increase settling of urban pollutants, and protect channels from high water levels and flooding.

Extended Detention (ED) Ponds: A conventional ED pond temporarily detains a portion of storm water runoff for up to 24 hours after a storm using a fixed orifice. Such extended detention allows urban pollutants to settle out. The ED ponds are normally "dry" between storm events and do not have any permanent standing water. An enhanced ED pond is designed to prevent clogging and resuspension. It provides greater flexibility in achieving target detention times. It may be equipped with plunge pools near the inlet, a micropool at the outlet, and utilize an adjustable reverse-sloped pipe at the ED control device.

Fen: A wetland featuring grasses and sedges, created when a high water table and a lack of runoff keep the ground continuously moist and deprived of oxygen. Plants that die in these conditions do not break down into the soil because there is not enough oxygen to support the microorganisms and bacteria that do this work. Dead plants build up and compress over thousands of years into thick, partially decayed mats of peat. Fen's are kept continuously wet and cool by the ground water supply.

Filling: The act of depositing any rock, soil, gravel, sand or other material so as to fill a water body, watercourse, or wetland.

Flood (and related definitions): A temporary rise in the water level of lake, pond or wetland, or in the stream flow or stage of an open channel that results in inundation of the areas adjacent to the main waterway or water body. Other commonly referred to flood-related terms include:

- Floodplain: Floodplains are lowland areas adjoining lakes, wetlands, and rivers that are susceptible to inundation of water during a flood and that are included on the City's Flood Insurance Rate Map. The mapped floodplain is the area covered by the 100-year flood and it is usually divided into districts called the floodway and flood fringe. Areas where floodway and flood fringe have not been determined are called approximate study areas or general floodplain areas. Any development within a floodplain area requires a permit from the City and/or FEMA.

    - General Floodplain Area: The general floodplain area is determined using the best available data, in lieu of performing a detailed engineering study. These data may be from soils mapping, experienced high water profiles, aerial photographs of previous floods, or other appropriate sources. There are no associated published 100-year flood elevations with general floodplain delineations, unlike detailed study areas. General floodplain area is synonymous with approximate study area and unnumbered A-Zone.

    - Flood Fringe: That portion of the 100-year floodplain outside of the floodway.

    - Floodway: The floodway is the channel of a river or other watercourse and the adjacent land areas which would actively convey the 100-year flood plus 0.50-foot.

- Flood Frequency: The average frequency, statistically determined, for which it is expected that a specific flood stage or discharge may be equaled or exceeded.

    - 1% Chance Flood: The flood having a one-percent (1%) chance of being equaled or exceeded in any given year. A one-percent (1%) chance flood is synonymous with Base Flood, Regional Flood, or 100-year flood. Any development within this area requires a permit from the City.

    - 100-Year Flood: The flood having a one-percent (1%) chance of being equaled or exceeded in any given year. A 100-year flood is synonymous with Base Flood, Regional or 1% Chance Flood. Any development within this area requires a permit from the City.

    - Regional Flood**:** A flood which is representative of large floods known to have occurred generally in Minnesota and reasonably characteristics of what can be expected to occur on an

average frequency in the magnitude of the 100-year recurrence interval. Regional flood is synonymous with the term “base flood" used in the Flood Insurance Study. Any development within this area requires a permit from the City.

- Flood Obstruction: Any dam, well, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel rectification, culvert, building, wire, fence, stockpile, refuse, fill, structure or matter in, along, across or projecting into any channel, watercourse or regulatory flood hazard area which may impede, retard or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water, or that is placed where the flow of water, either in itself or by catching or collecting debris carried by such water, or that is placed where the flow of water might carry the same downstream to the damage of life or property.

- Flood Proofing: A combination of structural provisions, changes or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages to properties, water and sanitary facilities, structures and contents of buildings in a flood hazard area in accordance with the Minnesota State Building Code.

- Regulatory Flood Protection Elevation (RFPE)**:** The elevation established by local ordinance to which all new floodplain development must be protected against flood damage. In Burnsville, the required low building elevation may be higher than the RFPE for some water bodies.

Forebay: An extra storage area provided near an inlet of a pond or BMP to trap incoming sediments, reducing the amount that accumulates in a pond or BMP.

Freeboard: A factor of safety usually expressed in feet above a certain flood level. Freeboard compensates for the many unknown factors (e.g., waves, ice, debris, etc.) that may increase flood levels beyond the calculated level. The vertical distance between the regulatory high water level determined by hydrologic modeling and flood protection elevation (e.g., low floor or opening of a building, overflow elevation of a road).

Herbicide: A chemical which is designed to kill vascular plants; vascular plants are those which have internal systems for transporting nutrients, water and gases.

Impervious Surface: The portion of the buildable parcel which has a covering which does not permit water to percolate into the natural soil. Impervious surface shall include, but not be limited to, buildings, all driveways and parking areas (whether paved or not), sidewalks, patios, swimming pools, tennis and basketball courts, covered decks, porches, and other structures. Open, uncovered decks are not considered impervious for the purposes of this ordinance. The use of patio blocks, paver bricks or class 5 gravel material are considered impervious surfaces as a majority of water runs-off the surface rather than being absorbed into natural soils underneath.

Infiltration Basin: An impoundment where incoming storm water runoff is stored until it gradually infiltrates into and through the soil of the basin floor.

Infiltration Trench: A conventional infiltration trench is a shallow, excavated trench that has been backfilled with stone to create an underground reservoir. Storm water runoff diverted into the trench

gradually exfiltrates from the bottom of the trench into the subsoil and eventually into the water table. An enhanced infiltration trench has an extensive pretreatment system to remove sediment and oil. It requires an on-site geotechnical investigation to determine appropriate design and location.

Infrastructure: Public facilities and services, including transportation, water and sewer, telecommunications, recycling and solid waste disposal, parks and other public spaces, schools, police and fire protection, and health and welfare services.

Integrated Management Practice (IMP): A range of small-scale stormwater controls or practices distributed throughout a site and intended to maintain flow patterns, filter pollutants and re-create or maintain existing site hydrology.

Lake Classification: See Water Body Classification System.

Littoral Area: Any part of a body of water 15 feet deep or less.

Lowest Floor: The lowest floor of the lowest enclosed area (including a basement). An unfinished or flood-resistant enclosure, usable solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building's lowest floor provided that such enclosure is not built so as to render the structure in violation of requirements.

Lowest Floor Elevation (LFE) or Low Building Elevation (LBE): The elevation of a building's lowest allowable floor above the one percent chance flood elevation established in this plan or the BFE defined by FEMA.

Low Impact Development (LID): An approach to stormwater management intended to protect water resources, reduce storm sewer infrastructure costs and provide a more attractive storm water management system. LID practices include reduced impervious surface coverage, disconnected impervious areas, infiltration systems, bioretention areas, rain barrels, green roofs, porous pavements and a long list of additional innovative storm water treatment practices which are intended to mimic the natural hydrology of a site and minimize the resulting impacts to receiving waters.

Monotypic: A pure stand of one type of vegetation with few other aquatic plant species present.

Native: A plant or animal species that naturally occurs in Minnesota and has not been introduced from another state or continent.

Natural Community: A community developed over time through natural ecosystem processes. Some natural communities are climax and some are perpetually successional due to ever-changing environmental factors. An extreme example of the latter is a river or lake beach where persistent wave or flooding action restricts significant vegetation establishment and succession towards a climax community.

Natural Resource Analysis: A report in map and text form identifying the existing natural features of a parcel of land and the relationship of a proposed use to the existing natural conditions of the parcel. Used in the determination of appropriate means to preserve and manage areas unsuitable for development in their natural state due to physical constraints or special protection status.

New Development: Development of a property or portion thereof that is currently not developed.

New Impervious Area: The new impervious surface areas of a project site shall be those that are proposed or created after July 1, 2008. Where multiple projects are proposed on the same parcel or project site, the new impervious is the cumulative new impervious areas created after July 1, 2008.

NURP: Nationwide Urban Runoff Program, a study by the U.S. Environmental Protection Agency. A key component of this program was to assess the effectiveness of urban runoff detention/retention basins (e.g., wet ponds and other BMPs) in removing pollutants from storm water runoff. NURP ponds are generally accepted in the area as ponds which have a pollutant removal efficiency on the order of 60 % for total phosphorus and 90 % for total suspended solids.

Nutrient Spiraling: The cumulative effect of nutrient loading on water resources in moving from headwaters of watershed to the most down stream end.

Off-Line BMP: A water quality facility designed to treat a portion of storm water (for example: 0.5 to 1.0 inches per impervious acre) which has been diverted from a stream or storm drain.

Off-Line Treatment: A BMP system that is located outside of the stream channel or drainage path. A flow diverter is used to divert runoff from the channel and into the BMP for subsequent treatment.

Ordinary High Water Level: The boundary of public waters and wetlands, and shall be an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowage, the ordinary high water level is the operating elevation of the normal summer pool.

Peat Sand Filter: BMP, utilizing the natural adsorptive features of fabric or hemic peat, which consists of a vertical filter system with a grass cover crop, alternating layers of peat and sand and a sediment forebay feature. The peat sand filter is presently used for municipal waste treatment systems and is being adapted for use in storm water management.

Permanent Pool: A 4 to 10-foot deep pool in a storm water pond system between the bottom of the pond and the elevation of the outlet pipe or structure. The permanent pool provides removal of urban pollutants through settling and biological uptake. Also referred to as the dead storage component of a wet pond.

Perennial: A plant that persists from year to year and usually produces reproductive structures in two or more different years.

Pondscaping: A method of designing the plant structure of a storm water wetland or pond using inundation zones. The proposed wetland or pond system is divided into zones which differ in the level and frequency of inflow. For each zone, plant species are chosen based on their potential to thrive, given the inflow pattern of the zone.

Porous Pavement: An alternative to conventional pavement whereby runoff is diverted through a porous asphalt, concrete or paver block layer and into an underground stone reservoir. The stored runoff then gradually infiltrates into the subsoil.

Potential Storm Water Hotspots (PSH). Commercial, industrial, institutional, municipal and/or other operations that may produce or present a higher risk of spills, leaks or illicit discharges. PSH may include gas stations, petroleum wholesalers, vehicle maintenance and repair, auto recyclers, recycling centers, scrap yards, landfills/solid waste facilities, wastewater treatment plants, airports, railroad stations and highway maintenance facilities.

Public Waters: Water basins assigned a shoreland management classification by the Commissioner under Sections 103F.201 to 103F.221, except wetlands less than eight (8) acres in size that are classified as natural environment lakes. Waters of the state that have been finally determined to be public waters or navigable waters by a court of competent jurisdiction. Meandered lakes, excluding lakes that have been legally drained. Water basins previously designated by the Commissioner for management for a specific purpose such as trout lakes and game lakes pursuant to applicable bylaws. Water basins designated as scientific and natural areas under Section 84.033. Water basins located within and totally surrounded by publicly owned lands.

Water basins where the State of Minnesota or the federal government holds title to any of the beds or shores, unless the owner declares that the water is not necessary for the purposes of the public ownership. Water basins where there is a publicly owned and controlled access that is intended to provide for public access to the water basin. Natural and altered water courses with a total drainage areas greater than two (2) square miles. Natural and altered water courses designated by the Commissioner as trout streams. Public waters wetlands, unless the statute expressly states otherwise.

Reach: A hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by the natural or man-made obstruction. In an urban area, the segment of a stream or river between two (2) consecutive bridge crossings would most typically constitute a reach.

Redevelopment: Any development including but not limited to rebuilding, renovation, revision, remodel, reconstruction or redesign of or at an existing development.

Retention: The permanent storage of runoff from rainfall and snowmelt events with volume reduction coming from infiltration evaporation or emergency release.

Retrofit: The creation/modification of storm water management systems in developed areas through the construction of wet ponds, infiltration systems, wetland plantings, steam bank stabilization, and other BMP techniques for improving water quality and creating aquatic habitat. A retrofit can consist of the construction of a new BMP in the developed area, the enhancement of an older storm water management structure, or a combination of improvement and new construction.

Riprap: A combination of large stone, cobbles and boulders used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.

Riser: A vertical pipe extending from the bottom of a pond BMP that is used to control the discharge rate from a BMP for a specified design storm.

Runoff (Storm Water): The overland and near surface flow from storm water and snowmelt.

Runoff Conveyance: Methods for safely conveying runoff to a BMP to minimize disruption of the stream network, and promote infiltration or filtering of the runoff.

Runoff Pretreatment: Techniques to capture or trap coarse sediments before they enter a BMP to preserve storage volumes or prevent clogging within the BMP. Examples include forebays and micropools for pond BMPs, and plunge pools, grass filter strips and filter fabric for infiltration BMPs.

Surface Area-to-Voids Ratio (SA/V): The surface area to volume ratio is a useful measure of the capacity of storm water wetland to remove pollutants via sedimentation, adsorption, and microbial activity. The SA/V ratio can be increased by either increasing the surface area of a wetland or increasing the internal structural complexity within the wetland.

Sand Filter: A relatively new technique for treating storm water, whereby the first flush or runoff is diverted into a self-contained bed of sand. The runoff is then strained through the sand, collected in underground pipes and returned back to the stream or channel.

Secchi Disc: An 8-inch, white metal plate, attached to a calibrated rope use as a standard measure of water transparency.

Sediment Forebay: Storm water design feature that employs the use of a small settling basin to settle out incoming sediments before they are delivered to a storm water BMP. Particularly use full in tandem with infiltration devices, wet ponds or marshes. See also Forebay.

Shoreland: Land located within the following distances from public waters: one thousand feet (1,000') from the ordinary high water level of a lake, pond, or flowage; and three hundred feet (300') from a river or stream, or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater. The limits of shoreland may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the Commissioner of the DNR.

Short Circuiting: The passage of runoff through a BMP in less than the theoretical or design treatment time.

Slope: The degree of deviation of a surface from the horizontal, usually, expressed in percent or degrees.

Storm Water Treatment: Detention, retention, filtering or infiltration of a given volume of storm water to remove urban pollutants, reduce the runoff volume and/or reduce the potential for flooding.

Stream Buffer: A variable width strip of vegetated land adjacent to a stream that is preserved from development activity to protect water quality aquatic and terrestrial habitats. See also buffer and buffer strip.

Structure: Anything which is built, constructed or erected; an edifice or building of any kind; or any piece of work artificially built up and/or composed of parts joined together in some definite manner whether temporary or permanent in character. Among other things, structures including but not limited to buildings, gazebos, decks, retaining walls, walls, fences over six feet (6') in height, and swimming pools.

Treatment Volume (Vt): The volume of storm water runoff that is treated within a BMP. Typically expressed in terms of inches (i.e., depth) over the impervious area or inches over the contributing drainage area to a treatment system.

Underdrain: Plastic pipes with holes drilled through the top, installed on the bottom of an infiltration BMP, or sand filter, which are used to collect and remove excess runoff.

Undeveloped Property: Any property within the City on which no development (as defined in City Code 10-4-2) has occurred.

Vacuum Sweeping: Method of removing quantities of coarse-grained sediments from porous pavement in order to prevent clogging. Not effective in removing fine-grained pollutants.

Vegetated Filter Strip: A vegetated section of land designed to accept runoff as overland sheet flow from upstream development. It may adopt any natural vegetated form, from grassy meadow to small forest. The dense vegetative cover facilitates pollutant removal. A filter strip cannot treat high velocity flows; therefore, they have generally been recommended for use in agriculture and low-density development. A vegetated filter strip differs from a natural purpose of pollutant removal. A filter strip can also be an enhanced natural buffer, however, whereby the removal capability of the natural buffer is improved through engineering and maintenance activities such as land grading or the installation of a level spreader. A filter strip also differs from a grassed swale in that a swale is a concave vegetated conveyance system, whereas a filter strip has a fairly level surface.

Vegetation, Native: The pre-settlement group of plant species native to the North American continent that were not introduced as a result of European settlement.

Vegetative Propagation: Plant reproduction by means other than seeds, such as by fragments.

Watershed: The 81 major watershed units delineated by the State of Minnesota Watershed Boundaries 1979 map.

Wetland: Lands transitional between terrestrial and aquatics systems where the water table is usually at or near the surface or the land is covered by shallow water. For purposes of this definition, wetlands must have three (3) of the following attributes:

- A predominance of hydric soils.

- Inundation or saturation by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.
- Under normal circumstances, support a prevalence of such vegetation.

Wetland Classification System: The City of Burnsville's Wetland Protection and Management Plan classifies wetland basins according to the following system:

- *Protection Areas* - Basins with Native Grades of A or B, sites with complete Community Structure, any sites supporting rare species, and any sites within or adjacent to significant natural communities as identified by the Dakota County Biological Survey. This is comparable to the Preserve Classification used in the MnRAM.
- *Improvement Areas* - Basins with 3 of 4 of the Community Structure criteria, sites greater than ten acres in size, Minnesota Department of Natural Resources Protected Waters and Wetlands (Public Waters), and basins within existing City parks that are not classified as Protection Areas. Although there is some overlap, this classification is similar to the Manage I and Manage II MnRAM classifications.
- *Management Areas* - Remaining wetlands, but generally of low quality and located outside of protected areas. These wetlands are also likely to receive untreated storm water runoff, but have not been altered to enhance treatment capabilities. This classification is comparable to the Manage II and Manage III MnRAM classifications.
- *Management II Areas* – These basins include any of the water features that may have been historic wetlands, and would remain subject to the requirement of the Wetland Conservation Act. These basins will have minimal protection standards as they currently function primarily to provide storm water management.

Wetland Mitigation: Regulatory requirement to replace wetland areas destroyed or impacted by proposed land disturbances with artificially created wetland areas.

Wet Pond: A conventional wet pond has a permanent pool of water for treating incoming storm water runoff.

Zoning District: An area or areas of the City (as delineated on the Zoning Map) set aside for specific uses with specific regulations and provisions for use and development

Zoning District Overlay: A zoning district containing regulations superimposed upon other zoning district regulations and superseding the underlying zoning district use regulations.

ACRONYMS

BMP	Best Management Practices
BWSR	Minnesota Board of Water and Soil Resources
DNR	Department of Natural Resources
EPA	United States Environmental Protection Agency
EPI	Effective Percent Impervious
EQB	Environmental Quality Board
EQC	Environmental Quality Committee
GIS	Geographic Information System
SWCD	Soil and Water Conservation District
IMP	Integrated Management Practice
LID	Low Impact Development
MPCA	Minnesota Pollution Control Agency
MS4	**Municipally Separate Storm Sewer System**
MUSA	Metropolitan Urban Services Area
NPDES	National Pollutant Discharge Elimination System
NURP	Nationwide Urban Runoff Program
ppb	parts per billion
SWPPP	**Storm Water Pollution Prevention Plan (or Program)**
TMDL	**Total Maximum Daily Load**
TP	Total Phosphorus
TSS	Total Suspended Solids
WD	Watershed District
WMO	Water Management Organization
WRMP	Water Resources Management Plan

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Appendix A – Minnesota River Quadrant Analysis

Appendix A previously contained:

SPECIAL STUDY: LAKE LEVEL MANAGEMENT

Deleted in 2008 Update: Refer to October 2002 Plan

MEMORANDUM

TO: City of Burnsville

FROM: Susan L Severa

DATE: July 18, 2006 (Revised – February 2008 - RBL)

RE: Minnesota River Quadrant
SEH No. A-BURNS0604.00

Background

The Minnesota River Quadrant (MRQ) is approximately 825 acres situated in the northwest corner of the City of Burnsville. Generally, the area is bounded on the south by TH 13, on the east by I-35W, on the north by the Minnesota River, and on the west by Lynn Avenue.

In January 2006, the City of Burnsville contracted with DSU to prepare a land use plan for the MRQ. Attached is the land use plan DSU proposed for the MRQ. The plan assumes full development of the MRQ area and details the future land use, road locations and conceptual pond sizes and locations.

It is important to note the inclusion of Quarry Lake in the MRQ. Future Quarry Lake is situated at the existing Kraemer Quarry location and is expected to serve as a surface water source for the City of Burnsville. Once current quarry activities have ceased groundwater will recharge the cavity and form Quarry Lake. Knowing future Quarry Lake will serve as a drinking water source for the City and should be treated as a sensitive resource, special attention must be paid to proposed development and the corresponding storm water management within the MRQ.

In addition, the land plan from DSU includes Industrial Park Pond (IPP) as a regional storm water facility. The City desires to optimize the IPP as a storm water management facility. IPP will provide both water quality and flood control for a substantial contributing area.

The entire area within the MRQ flows north into the Minnesota River. The Minnesota River is a protected resource, and all development activities within the corridor must conform to the City's most strict storm water management goals (as proposed). This means all development must not exceed existing 2, 10, and 100-year peak flow conditions and remove 90% Total Suspended Solids (TSS) and 60% Total Phosphorous (TP) from the storm water. Additionally, any development disturbing more than one acre must complete and obtain a Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System (NPDES) permit.

In order to protect the City's existing drinking water sources, the City has identified areas of high vulnerability for drinking water contamination and prohibited infiltration within these areas. The attached Figure of Prohibited Infiltration Areas shows the MRQ area is located within the designated boundary.

Analysis

The following hydrologic analysis was completed using the DSU land plan. The land plan was broken into smaller drainage areas, as shown in the attached exhibit. This analysis examined each drainage area to determine the approximate amount of dead storage volume required in order to meet the City's water quality guidelines set forth in the Water Resources Management Plan.

In order to better understand the storage requirements for each approximate ponding area, a HydroCAD model was generated. An estimated normal water level, bottom and top contour was assigned to each conceptual ponding area shown on the DSU land plan. Side slopes for the live and dead storage areas are estimated to be 3:1, and all ponds shall have a 10:1 bench below the normal water level. The ponds were hydraulically connected where feasible. See the attached exhibit for routing details. A 100-year (6.0-inch), 24-hour storm with a Type II Distribution was used to simulate high water levels within the approximate ponding areas.

This analysis did not specifically model rate control for each development within the MRQ. Rate control is accomplished by limiting the peak run-off rates for the 2, 10 and 100-year rainfall events to existing conditions. During final design, ponding areas can be designed to achieve rate control through the outlet size and live storage area. Detailed calculations for the time of concentrations for each subwatershed were not completed. Rather, a reasonable time of concentration was assigned based on contributing area and amount of impervious cover within each subwatershed. No existing utilities were investigated for potential conflicts in the proposed routing of ponds. No soils survey has been completed within the MRQ for use in this analysis. All soils were assumed to be Type B. The location of the bedrock will need to be determined prior to final design because very shallow bedrock has been found in a nearby project. Each development which disturbs more than one acre will be responsible for obtaining an NPDES permit from the MPCA.

Table 1 identifies the Curve Number (CN) assigned to a subwatershed based on the proposed land use.

Table 1. Proposed Curve Number

Land Use	CN
Industrial	88
Commercial	92
Office Park	92
Medical Campus	88
Multi-Family	85
Park	69
Roadway	98

The required dead storage volume for each drainage area was calculated based on 2.5-inches over the entire contributing drainage area. The resulting dead storage volume is a conservative

estimate of the volume which is required to meet the City's proposed 90% TSS and 60% Total Phosphorous TP removal rates. FEMA Flood Insurance Rate Maps for the MRQ area within Burnsville were also examined (see attached). Any development that may fall within a 100-year flood hazard boundary will need to follow all local, state and federal rules.

Results

Table 2 summarizes the drainage areas west of future Quarry Lake which will not receive treatment in Industrial Park Pond. In this analysis, all drainage areas listed within Table 2 shall have appropriate storm water management facilities constructed on-site as per the City's requirements.

In a Feasibility Report titled, "Industrial Park Pond at Hwy 13 and Washburn Ave," completed in April 2002, the City retained SEH to complete a study on the feasibility of constructing Industrial Park Pond through the use of property assessment funding. The report found Industrial Park Pond constructed to a 6-foot depth could provide approximately 64 ac-ft of dead storage. This design for the Industrial Park Pond would have treated approximately 552 acres of land to the City's previous treatment standards. Table 3 summarizes the drainage areas contributing to the IPP for this analysis.

Based on the DSU land plan, we estimated IPP with a depth of 10-feet below the normal water level. At a depth of 10-feet, the approximate dead storage volume available within IPP is 77 ac-ft. Approximating the dead storage volume from the conceptual ponding areas within the drainage areas listed in Table 3, these areas could provide approximately 27 ac-ft of volume prior to entering IPP. Subtracting the 27 ac-ft of available dead storage within the conceptual ponds from the required dead storage volume of 79 ac-ft, approximately 52 ac-ft of dead storage volume within the IPP will be used to treat the contributing drainage areas. The remaining 25 ac-ft of volume within IPP could be used to treat areas outside of the MRQ. Otherwise, the IPP could be constructed at a shallower depth if the City determined no need for excess volume within IPP.

It is not feasible to route the remaining drainage areas back to the IPP, so the storm water management will need to occur either on site or in a regional pond. Table 4 summarizes the areas east of Quarry Lake not treated within Industrial Park Pond.

Generally the area east of Quarry Lake outlined in Table 4, above, does not appear to have enough dead or live storage volume within the conceptual ponds shown on the land plan. The conceptual ponding areas will need to be bigger, or the City may choose to create a second regional storm water facility (similar to IPP) which would serve these drainage areas instead of multiple smaller ponding areas.

Conclusions

Based on the results above, the following is a summary of conclusions for hydrologic analysis the MRQ:

1. Wetland impacts will need to be evaluated during final design. All wetland impacts shall be mitigated in accordance with local, state and federal laws.
2. Because of the MRQ's location within the City, all ponding areas must be lined to prevent storm water from entering the City's drinking water supply.
3. Infiltration is prohibited within the MRQ.
4. During final design proposed storm water treatment facilities may be reduced in size if the developer can show their proposed ponds meet the desired removal rates. P8, or an equivalent model accepted by the City, must be used to show these removal rates.
5. Filtration is encouraged and may be used in lieu of infiltration. Filtration may be modeled as infiltration, accordingly.
6. Rate control was not modeled in detail in this analysis and must be considered during final design.
7. The areas east of Quarry Lake which are not included in IPP do not show sufficient ponding areas within the conceptual land plan.
8. Regional ponding facilities are preferred over small ponds within each site. It may be beneficial to consider a regional pond within the areas east of Quarry Lake which are not included in IPP.
9. During final design, all ponds should be modeled to show proper management of the 100-year, 24-hour storm event (6.0-inch). Additionally, all ponds should be designed to meet the City's water quality requirements.
10. All ponds should include an extreme event overflow device, and routing of the extreme event should be considered during final design.
11. Any development occurring within FEMA's designated 100-year flood hazard boundary will need to follow all local, state and federal rules. No fill or development shall occur within the regulatory floodway.

Table 2 Areas West Quarry Lake Not Treated in Industrial Park Pond

Drainage Area ID	Land Use	Area (acres)	Dead Storage Needed (ac-ft) (1)	Comments
1	Golf Course	207.0	43.13	Will be designed on top of existing landfill; assume design will include water hazards which will serve as storm water management facilities; may also utilize existing ponds constructed for landfill.
4	Industrial	45.0	9.38	2 conceptual ponds shown on layout; ponds modeled together; conceptually the ponds meet dead and live storage requirements; ponds will serve Tract 4 only
5	Park	22.0	4.58	1 conceptual pond shown on layout; conceptually the pond does not meet the dead storage requirement; pond will serve Tract 5 only
	Total	**274.0**	**57.1**	

(1) Calculated based on 2.5-inches over the contributing drainage area. This is a conservative estimate of the storage volume needed.

Table 3 Contributing Areas to Industrial Park Pond

Drainage Area ID	Land Use	Area (acres)	Dead Storage Needed (ac-ft) (1)	Comments
2	Existing	62.0	12.92	No conceptual ponds shown on layout; this area can be treated within IPP if it is feasible to construct storm sewer to avoid the existing box culvert along the eastern side of Tract 2
3	Commercial	27.0	5.63	No conceptual ponds shown on layout; this area can be treated within IPP
6	Industrial	57.0	11.88	2 conceptual ponds are shown on layout; ponds modeled together; routed to IPP; conceptually the ponds do not meet the dead storage requirement; remaining dead storage can be achieved in IPP
7	Office	6.3	1.31	1 conceptual pond shown on layout; Pond 7 routed to Pond 6; conceptually the pond does not meet dead storage requirement; remaining dead storage can be achieved in IPP
7a	Office	9.0	1.88	No conceptual pond shown on layout; routed to easterly Pond 10a; this area can be treated within IPP
7b	Office	10.5	2.19	1 conceptual linear pond shown on layout; Pond 7b routed to Pond 9; conceptually the pond does not meet dead storage requirement; remaining dead storage can be achieved in IPP
7c	Office	13.4	2.79	No conceptual pond shown on layout; routed to Pond 9a; this area can be treated within IPP
7d	Office	19.1	3.98	No conceptual pond shown on layout; routed to northern Pond 6; this area can be treated within IPP
8	Commercial	19.0	3.96	No conceptual pond shown on layout; routed to Pond 11; this area can be treated within IPP
9	Industrial	10.0	2.08	2 conceptual ponds shown on layout; Tract 9 routed to Pond 9 (easterly); Pond 9 routed to Pond 9a (westerly); conceptually the ponds meet the dead and live storage requirement
10	Industrial	26.0	5.42	2 conceptual ponds shown on layout; Tract 10 routed Pond 10 (westerly); Pond 10 routed to Pond 10a (easterly); Pond 10a routed to the Pond 7b; conceptually the ponds do not meet dead storage requirement; remaining dead storage can be achieved within IPP
11	Office	29.0	6.04	1 conceptual pond shown on layout; Pond 11 routed to Pond 6; conceptually the pond does not meet dead storage requirement; remaining dead storage can be achieved within IPP
12	Medical Campus	44.1	9.19	1 conceptual pond shown on layout; Pond 12 routed to Pond 7b; conceptually the pond does not meet dead storage requirement; remaining dead storage can be achieved within IPP
12a	Medical Campus	4.9	1.02	1 conceptual pond shown on layout; Pond 12a routed to Pond 12; conceptually the pond does not meet dead storage requirement; remaining dead storage can be achieved within IPP
13	Existing	28.0	5.83	No conceptual ponds shown on layout; this area can be treated within IPP if it is feasible to construct storm sewer along railroad and directly into IPP
14	CSAH 5 Roadway	16.0	3.33	No conceptual ponds shown on layout; this area can be routed to Pond 7; treatment can be achieved within IPP
	Total	**381.3**	**79.4**	

(1) Calculated based on 2.5-inches over the contributing drainage area. This is a conservative estimate of the storage volume needed.

Table 4 Areas East of Quarry Lake Not Treated Within Industrial Park Pond

Drainage Area ID	Land Use	Area (acres)	Dead Storage Needed (ac-ft) (1)	Comments
15a	Office/Commercial	29.7	6.19	1 conceptual pond shown on layout; Pond 15a routed to Pond 15e; conceptually the pond does not meet dead storage requirements
15b	Office/Commercial	3.3	0.69	1 conceptual pond shown on layout; Pond 15b routed to Pond 15e; conceptually the pond does not meet dead storage requirements
15c	Office/Commercial	2.5	0.52	1 conceptual pond shown on layout; Pond 15c routed to Pond 15b; conceptually the pond does not meet dead storage requirements
15d	Office/Commercial	15.4	3.21	1 conceptual pond shown on layout; Pond 15d routed to Pond 15e; conceptually the pond does not meet dead storage requirements
15e	Office/Commercial	23.1	4.81	2 conceptual ponds shown on layout; Pond 15e routed to Pond 15ea; conceptually the ponds does not meet dead storage requirements
16	Multi-Family	15.0	3.13	No conceptual pond shown on layout; Tract 16 routed to Pond 17b; no treatment is provided for this tract within the DSU layout
17a	Office	6.3	1.31	1 conceptual pond shown on layout; Pond 17a routed to Pond 17b; conceptually the pond does meet dead storage requirements
17b	Office	11.4	2.38	1 conceptual pond shown on layout; Pond 17b routed to Pond 17d; conceptually the pond does not meet dead storage requirements
17c	Office	9.1	1.90	1 conceptual pond shown on layout; Pond 17c routed to Pond 17d; conceptually the pond does not meet dead storage requirements
17d	Office	27.2	5.67	1 conceptual pond shown on layout; Pond 17d will discharge north to the Minnesota River; conceptually the pond does not meet dead storage requirements
18	Commercial	24.0	5.00	1 conceptual pond shown on layout; Pond 18 will discharge north to the Minnesota River; conceptually the pond does not meet dead storage requirements
	Total	**167.0**	**34.8**	

(1) Calculated based on 2.5-inches over the contributing drainage area. This is a conservative estimate of the storage volume needed.

sls
Attachment

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Office/ office showroom
Commercial/ mixed use
Industrial
Medical Technical Campus
Regional Riverfront Trail

APPROXIMATE SCALE

1000 0

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD BOUNDARY AND FLOODWAY MAP

CITY OF
BURNSVILLE
MINNESOTA
DAKOTA COUNTY

COMMUNITY-PANEL NUMBER
270102 0001

PAGE 1 OF 2
(SEE MAP INDEX FOR PAGES NOT PRINTED)

EFFECTIVE
SEPTEMBER 1, 1977

U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

MEMORANDUM

TO: Bud Osmundson – Director of Public Works/City Engineer
Terry Schultz – Director of Natural Resources
City of Burnsville

FROM: April Bielejeski
Ron Leaf
SEH

DATE: July 25, 2007

RE: Minnesota River Quadrant (MRQ) Pond Options
SEH No. A-BURNS0702.00

An analysis previously completed by SEH (Memorandum dated July 18, 2006) proposed pond locations and treatment options for the MRQ area. Since that time the original Industrial Park Pond location is no longer available. The City of Burnsville has therefore, requested alternate pond location options for the area. This analysis is focused on identifying treatment locations and quantifying the treatment capacity for these locations in the area west of I35-W, and between TH13 to the south and the rail road to the north. Additional areas north of the rail road and new CSAH 5 extension may also be available (e.g., a portion of the property between the CSAH 5 extension and Cliff Road).

According to the previous analysis and the City's proposed 90% Total Suspended Solids and 60% Phosphorous removal rates, the Industrial Park area within the MRQ will need a combination of ponds to obtain approximately 63.5 ac-ft of dead storage. This dead storage volume is based on 2.0 inches of depth over the contributing drainage area. The attached figure indicates the location of the existing ponds and potential future pond locations. Table 1 on page 2 of this memorandum summarizes the estimated pond dead storage volumes that could be obtained in each of the areas. The detailed design process will be able to refine the dead storage volume and resulting treatment efficiency that could be obtained at each location.

The sub-areas identified in Table 1 are approximate and intended to help group the ponding areas into the most likely routing directions based on the existing infrastructure. Some of the pond locations may be able to be routed to the east or central areas, such as ponds 3 and 7. As stated above, additional areas north of the proposed CSAH 5 extension and north of Pond EX-4 may also be available. For example, a portion of the parcel between the CSAH 5 extension and Cliff Road could be used for a pond about the size of pond 6 or 11.

The existing ponds were modeled using aerial photos and 2-ft contours. Each pond was assumed to have a 10:1 bench and 3:1 side slopes up to 10-ft below the Normal Water Level (NWL). The potential pond locations were assumed to consist of a pond having a 10:1 bench at the NWL, 3:1 side slopes to the top of pond (9-ft above the NWL), and 3:1 side slopes to the bottom of pond (11-ft below the NWL). The proposed locations were chosen based on the available open area indicated in the aerial photographs and contour elevations.

For information about how the required 63.5 ac-ft (rounded to 64 in the Table) of storage was obtained please refer to the July 18, 2006, memorandum.

If you have any questions about the proposed locations or the available storage please contact April at 320.229.4329 or Ron at 651.765.2998.

Table 1. Summary of Existing and Potential Ponds in the Southern Portion of the MRQ.

Sub-Area (Note 2)	**Pond Location/ID**	**Existing Pond** (Yes/blank if no)	**Dead Storage** (acre-feet)	**Approximate Dead Storage Needed**
West	EX-1 (Menards)	Yes	4.0	24 acre-feet
	EX-2 (AVR)	Yes	2.0	
	12		0.2	
	13 (Addition to EX-1)		27.3	
	14		10.6	
	15		5.3	
	Subtotal		49.4	
Central	P1 (see note 1)		2.3	24 acre-feet
	P2 (see note 1)		0.8	
	EX-3 (Dealership)	Yes	0.7	
	1		11.0	
	2		9.0	
	7		12.5	
	8 (Addition to EX-3)		11.0	
	9		9.0	
	10		5.3	
	Subtotal		61.6	
East	EX-4	Yes	2.0	16 acre-feet
	3		3.0	
	4		9.5	
	5		10.8	
	6		4.1	
	11		5.4	
	Subtotal		34.8	
Totals			145.8	64 acre-feet

Notes:
1. P1 and P2 locations were proposed with the future road layout for the CSAH5-TH13 Interchange.
2. Sub-areas are approximate based on where the likely routing of storm water would go. The west and central areas would likely be routed to the box culvert. The east area would be routed to the east into the existing drainage system.

ab
Attachment

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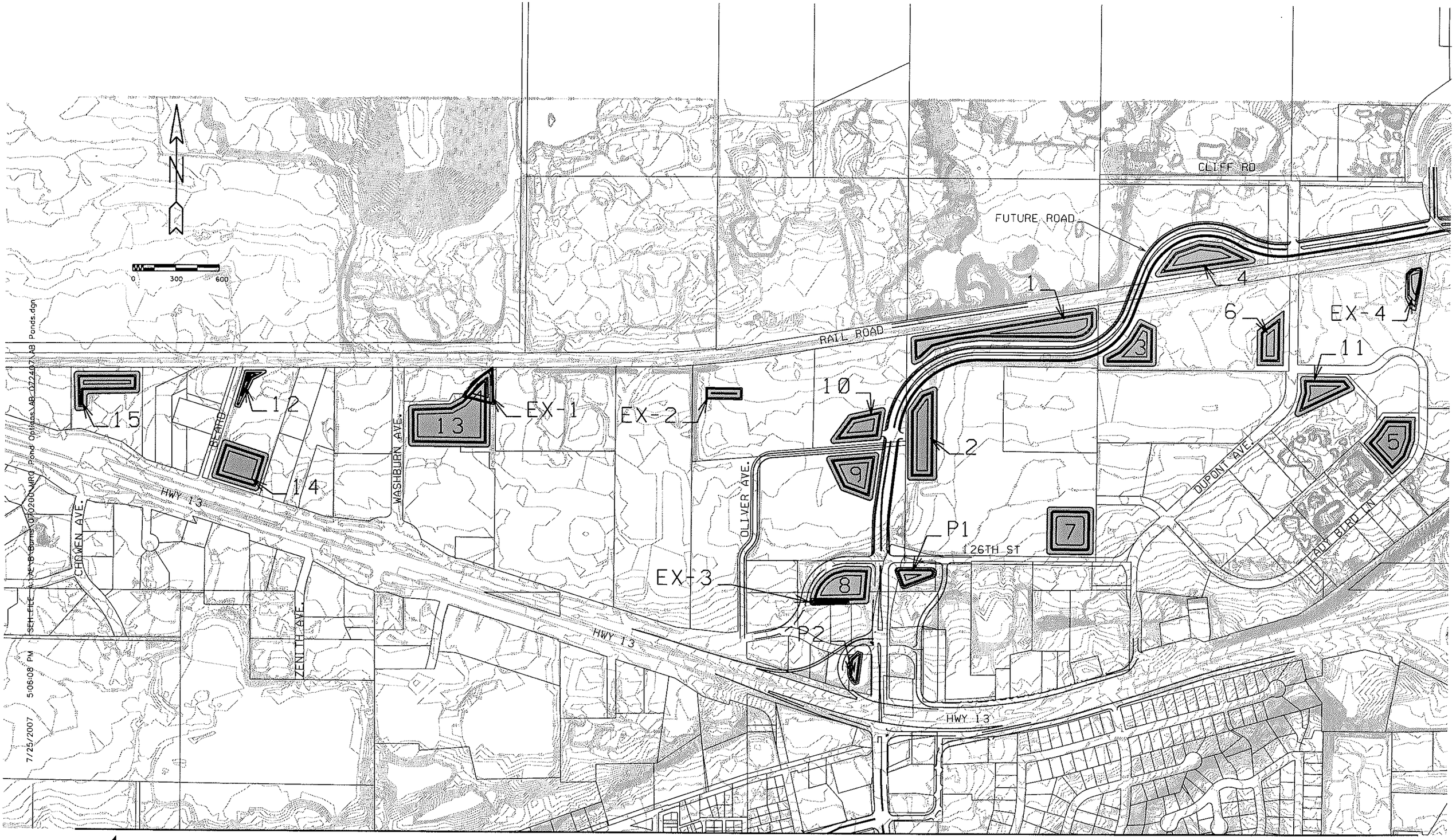


SEH

MINNESOTA RIVER QUADRANT
INDUSTRIAL PARK POND LOCATIONS
BURNSVILLE, MINNESOTA

EX 3
EX 4
SEH

Appendix B - Volume Control / Infiltration Worksheet

This Appendix contains a worksheet and related information that can be used for evaluating conformance to the volume control and infiltration requirements for storm water practices and determining if proposed practices meet requirements specified in Appendix C.

The worksheet is used to evaluate if specific practices will meet the standards and how much volume or infiltration surface area may be needed for a specific project. The worksheet contains a step that accounts for non-infiltration practices where groundwater recharge will not directly occur, including rain barrels, cisterns, roof gardens and other "storage-type" practices.

The worksheet user should understand that soils information for the location of each infiltration practice is needed to complete the worksheet. The hydrologic information used to develop the runoff volumes for various soils is based on modeling the impervious surfaces and pervious surface of a site separately instead of using a composite curve number. In this way, a more realistic estimate of the runoff volume for smaller storms is achieved. The key hydrologic assumptions include using a 1.0-inch rainfall (Type II distribution with AMC 2) over an average 1-acre project site.

Step 1 requires the total site area in acres, the existing impervious area, the new impervious area, the redeveloping impervious area and the total impervious area after development. The new impervious area is the area where impervious surfaces will be created where there currently are not impervious surfaces. The redeveloped impervious surface includes, for example, building and parking lots that that will be demolished and rebuilt or where the subgrade soils will be exposed as part of the planned redevelopment work.

The total impervious area in acres is the total surface area of buildings, roads, sidewalks, parking lots and other impervious areas on the site upon completion of the project. The total site area is equivalent to the acreage of the entire tract or parcel.

Step 2 calculates the percent impervious for the proposed site plan.

In Step 3 the owner or developer determines the runoff volume per acre for the proposed site using the percent impervious from Step 2 by starting on the x-axis of the chart and drawing a line up vertically until it intersects the applicable soil group line. The relationship shown in Figure 1 is based on hydrologic model simulations using a Type II, 1.0-inch, 24-hour rainfall event for various levels of impervious coverage and soils ranging from Group A to Group D. The simulations modeled impervious and pervious portions of a site separately. Therefore, while there are some small differences in runoff volume from a pervious surface between group A and group D soils, the soil type is not a significant factor in the runoff volume for the modeled 1-inch storm.

Step 4 calculates the total runoff volume that must be captured and treated in infiltration or filtration practices. The total volume is the total from new impervious areas and redevelopment areas. The volume from the new impervious areas is calculated by the full 1.0-inch runoff volume while the redevelopment area volume is calculated from a 0.5 inch runoff volume.

In Step 5 the portion of site runoff volume captured by filtration/storage-type (non-infiltration) practice, other than a traditional wet pond, will be accounted for. In general, this section will be used where infiltration is prohibited or site conditions are not suitable for infiltration. In some cases, a site may have a combination of filtration and infiltration BMPs.

For example, the volume captured by a rainwater garden with an under drain system is equal to the volume of rainfall that enters the planting soil plus the volume stored above the soil and below the outlet or overflow point. The volume captured in the soil is estimated as the volume of soil multiplied by the effective porosity of the soil. The effective porosity is estimated from the ranges of values presented in Applied Hydrology (Chow, et. al., 1988). For each non-infiltration practice to be used, the user should list the type, quantity and capacity of each practice in the chart provided below Table 1. If practices not listed are proposed, the user should enter a volume estimate in the chart and describe the method used to determine the volume. The result for Step 5 is the sum of the volumes captured by the different practice types.

In Step 6, users select a representative soil infiltration rate for the infiltration practices to be used at the site. If there are only filtration practices, then skip Steps 6 to 8 and go to Step 9 to determine if sufficient volume has been treated. Table 2 lists saturated infiltration rates for the four soil hydrologic soil groups and soil textures shown. If the user does not know the extent of soil conditions on the site or has not verified actual soil texture from field investigations, the most restrictive soil Group D should be used. If the user has verified on-site soil conditions and/or proposes to use the underlying soil with a permeability rate greater than those listed, data to support the infiltration rate must be submitted with the worksheet.

Step 7 is used to define the types and surface areas of specific practices to be used at the project site. Areas like a parking lot islands located above the elevation of the parking surface or boulevard grass sloping into the street curb and gutter system should not be considered as infiltration surface area in this section. Practices like infiltration trenches or basins, flat-sloped grassed swales, depressed parking lot islands and bio-retention areas can be included. The total surface area for infiltration practices is then calculated to obtain the Step 7 result.

Step 8 calculates the volume that can be infiltrated by practices in Step 7. In Step 8, the total surface area from Step 7 is multiplied by the infiltration rate from Step 6 (and a unit conversion factor) to obtain the volume infiltrated in cubic feet. The volume infiltrated represents a volume in a 48-hour period. This step assumes that the specific BMP design will provide for the entire excess runoff volume to be captured in the infiltration basin and that the BMP will drain fully within the 48-hour period. Note that the designer must also limit the maximum ponding depth in the practice to ensure it drains in 48 hours or less. For example, a Group C soil with a 0.2 in/hr infiltration rate will allow a maximum ponding depth of 0.8 feet, or about 9 inches.

Step 9 compares the total volume treated from both Step 5 and 8 to the volume need in Step 4. If the result for Step 9 shows that the volume control / infiltration requirements have not been met, the user should increase the storage capacity and/or infiltration surface area of the proposed practices in Steps 5 and 8, and recalculate the results through Step 9.

Infiltration / Filtration System Evaluation
Burnsville, MN
(page 1 of 3)

Volume / Infiltration Practice Worksheet – Revised 2008

Owner / Developer Name: _____

Site Name/Block or Outlot ID:_____

Step 1: Determine the site areas for your project.

a. Total site area in acres. _____ acres

b. Existing impervious area in acres. _____ acres

c. New impervious area in acres. _____ acres

d. Redeveloped impervious area in acres _____ acres

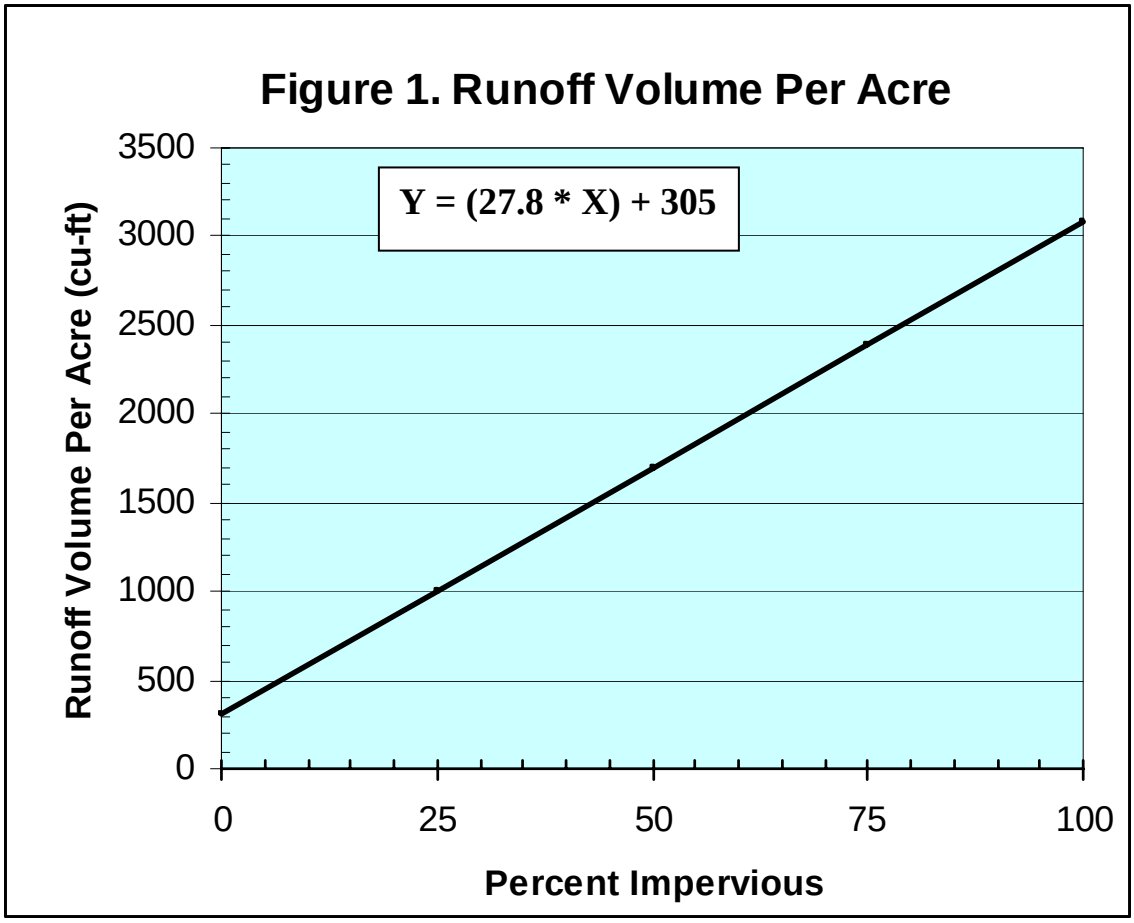
e. Total impervious area in acres. (= 1b + 1c) _____ acres

Step 2: Determine the proposed percent impervious area for the site.

Site percent impervious = 100 x (Step 1.e. ÷ Step 1.a.) = 100 x (_____ ÷ _____) = _____ %

Step 3: Determine the post-development runoff per acre from Figure W-1.

Runoff per acre in cubic-feet = _____ cu. feet
(Obtained from Figure 1 by drawing a line up from the percent impervious determined in Step 2 until it intersects the diagonal line, then drawing a line to left from that point to the total runoff per acre value.)



Step 4. Calculate the site runoff volume required for infiltration/filtration.

Site runoff volume (cu. feet) = Runoff Per Acre (cubic-feet/acre) x Total Site Area (acres)

a. New Impervious Volume = Step 3 x (Step 1.c / Step 1.e) x Step 1.a.

= _____ x _____ / _____ x _____ = _____ cu.-ft

b. Redevelopment Volume = Step 3 x (Step 1.d / Step 1.e) x Step 1.a. x 0.5

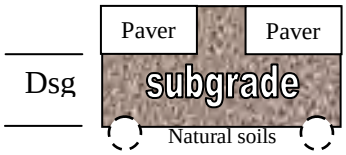
= _____ x _____ / _____ x _____ * 0.5 = _____ cu.-ft

c. Total Infiltration/Filtration Volume = Step 4.a + Step 4.b = _____ cu.-ft.

Step 5. Determine the runoff volume captured by filtration BMPs **(used where infiltration is prohibited)**

For each of the non-infiltration practices you will use, if any, enter the type and quantity/ID of each practice in the chart provided below. Select the volume calculation method from Table 1 that best fits the practice(s) or attach a separate sheet with calculations, calculate the volume-per-practice and a total volume for non-infiltration practices.

Table 1. Example Calculations for Volume Captured by Non-Infiltration BMPs.

BMP Type	Volume Calculation (cubic-feet)	Notes
Green roofs – roof gardens Rainwater Gardens or Bioretention areas with an under drain	V = L x W x [(Ds x Pe) + Dt] 	L = length of soil area (ft.) W = width of soil area (ft.) Ds = depth of soil (ft.) Dt = depth of storage between soil surface and overflow of practice (ft.) Pe = effective porosity of the soil = 0.4 (for this estimate). Typical range, most soils = 0.3 - 0.5
Porous Paver Systems – with an under drain (may be accounted for here **or** in Step 8 – but **NOT** both.)	V = L x W x (Dsg x Pe)  	L = length of paved area (ft.) W = width of paved area (ft.) Dsg = depth of subgrade (ft.) Pe = effective porosity of the subgrade = 0.32

List the type (by name and ID) of each practice to be used in the following chart. Calculate the total volume captured for the Step 5 result. Add additional sheets if more than 3 types of practices to be used.

BMP Name / ID	Quantity	Vol.-per-practice (cubic-feet)	Total Practice Vol. = Quantity x vol.-per-practice (cubic-feet)
Volume Captured (add volumes in far-right column) =			

Step 6. Select or Identify Soil Infiltration Rate. If not using infiltration, skip to Step 9.

For the detailed design stage, use the infiltration rate determined from site-specific soils investigation and lab testing. For planning purposes, select the infiltration rate from Table 2 that best reflects the soil type present at the site. If multiple soil-types are present, use the most restrictive soil hydrologic group when selecting an infiltration rate or complete Steps 6 to 8 for each of the different infiltration rate areas.

Infiltration Rate = _____ in/hr (circle soil hydrologic group(s) to be used in Table 2)

Table 2. Soil Infiltration Rates.

(Source: Infiltration rates taken from MPCA 2005 Minnesota Stormwater Manual, Version 1, Table 8.5.)

Hydrologic Soil Group	Infiltration Rate (in/hr)	Soil Textures
A	1.63	Gravel, sandy gravel, silty gravel
	0.80	Sand, loamy sand, or sandy loam
B	0.60	Silt loam
	0.30	Loam
C	0.20	Sandy clay loam
D	< 0.20	Clay loam, silty clay loam, sandy clay, silty clay, or clay

Step 7. Identify infiltration practices and determine the total infiltration surface area.

For each of the practices you will use, enter the type and quantity of each in the chart provided below and calculate the surface area per-practice and a total horizontal surface area subject to prolonged wetting for infiltration practices.

BMP Name / ID	Quantity	Area-per-practice (square-feet)	Total Practice Area = Quantity x area-per-practice (square-feet)
Infiltration LID Surface Area (add areas in far-right column) =			

(*This is the Effective Pervious Area for practices to be used for infiltration. This number should only include areas available to accept runoff from impervious surfaces. Areas such as parking lot green islands located above the elevation of the parking surface should not be included here. This number should also not include the wetted area of permanent ponds.)

Step 8. Calculate the volume infiltrated by practices over 48-hours.

Volume Infiltrated = Step 6 x Step 7 x 48 x 1/12 = Step 6 x Step 7 x 4 =

= _____sq-ft. x _____in/hr. x 48 hrs x 1/12 ft/in = _____ cu.-ft

Step 9. Compare the excess runoff volume to the volume infiltrated by LID practices.

Verify that the total volume filtered in Step 5 and infiltrated in Step 8 is greater than the excess runoff volume calculated in Step 4. If the total of Steps 5 and 8 is greater than the amount from Step 4, sufficient practices have been planned to meet the City standards. The designer should refer to the City's design standards in Appendix C of the Water Resources Management Plan for more information of design requirements for infiltration practices. If the result for Step 4 is greater than the total form Steps 5 and 8, additional filtration and/or infiltration practices are needed.

Step 5 + Step 8 MUST BE GREATER THAN OR EQUAL TO Step 4

_____ MUST BE GREATER THAN OR EQUAL TO _____

Appendix C – Development Standards

The City of Burnsville has developed specific requirements in this section that apply to development and redevelopment projects. These standards are intended to help achieve the water resource goals of the City's Water Resources Management Plan (WRMP) and help the City maintain compliance with the National pollutant Discharge Elimination System (NPDES) Municipal permit program. This summary highlights important aspects of the requirements for storm water quality, discharge rate and volume control, wetland management and erosion control. This summary does not provide a complete listing of the requirements of this Plan or City Code. For a more detailed listing of requirements see the specific policies of the WRMP and the applicable City ordinances or consult with City staff on your specific project.

To accomplish these goals, it is important to the City to have consistent approaches to evaluating proposed development projects. Therefore, all hydrologic, hydraulic and water quality analyses must be prepared and submitted in a format that will allow for a timely and efficient review by City staff.

Project designers and/or developers are encouraged to schedule and complete a pre-design meeting with the City before any data will be accepted. The purpose of the meeting is to specifically address approvals and permits, pond requirements, trunk storm drain analysis, wetland impacts, water quality treatment, erosion control and discharge to lakes and sensitive wetland resources.

1) General

   a) Water quality treatment, volume control, water quantity and rate control requirements apply to any project which results in one-half acre or more of disturbed area or 5,000 square feet or more of new impervious area. For the purposes of these standards, the new impervious area shall be considered the cumulative new impervious area created after July 1, 2008.

   b) Projects conducting pavement reconstruction/rehabilitation only on existing impervious areas are exempt from rate, water quality, water quantity and volume control standards.

   c) Erosion control standards apply to all projects.

   d) Additional requirements applicable to projects in Shoreland Areas are defined in City Code Section 10-8-10.

   e) Any project within a floodplain area requires a permit from the City and/or FEMA.

   f) The owner shall submit a map showing the overall site, new and redevelopment impervious areas, drainage routing and discharge points, construction limits and disturbed areas.

g) Any project within the jurisdiction of the Vermillion River Watershed JPO that has obtained a variance from these standards by the City, must be reviewed and approved by the Vermillion River JPO.

2) Water Quality Treatment.

a) Infiltration / Volume Control Requirement:

1) For all new impervious portions of a project, a runoff volume of 1 inch must be treated in infiltration practices. The extent of infiltration / volume control practices required shall be determined using the worksheet in Appendix B.

2) For all redevelopment impervious portions of a project, a runoff volume of 0.5 inches must be treated in infiltration practices. The extent of infiltration / volume control practices required shall be determined using the worksheet in Appendix B.

3) For projects that have a combination of new and redevelopment, the treatment practices can be combined for the overall site, provided the overall combined treatment level meets or exceeds the levels above.

4) For projects in the Vermillion River Watershed, and that create one or more acre of new impervious surface, must control runoff volume for the 2-year, 24-hour storm event (2.75 inches) to the predevelopment volume.

b) Pollutant Removal Requirements. For projects that have met the infiltration/volume control requirements above, the pollutant removal requirements are considered to be met. For projects where infiltration is prohibited (see Item 3.a.), the following pollutant removal standards apply prior to reaching a downstream receiving water:

1) For new development portions of a site, provide treatment to remove 90% TSS and 60% TP as modeled on an annual basis.

2) For redevelopment portions of a site, provide treatment to remove 70% TSS and 30% TP as modeled on an annual basis.

3) For projects that have a combination of new and redevelopment, the treatment practices can be combined for the overall site, provided the overall combined treatment level meets or exceeds the levels above.

4) Design engineers and developers shall determine the pollutant removal efficiency of the BMP(s) incorporated into the site plan using the available industry standard models including P8 (and using a standard NURP particle size distribution for the analysis) or a comparable model approved by the City. As an alternative to preparing a site-specific model, the development may provide a treatment volume (dead storage) of not less than 2.5 inches calculated over the contributing drainage area to the pond. For example, a

1-acre site that drains to a common treatment pond would be required to provide a dead storage volume of 0.21 acre-feet or 9,000 cubic feet.

3) Volume Control / Infiltration Practices.

a) Infiltration systems are prohibited:

1) Within the zone identified in Figure C-1;

2) Within 50 feet of public or private water supply well (Minn. Rules, Chapter 4725);

3) Where the bottom of the infiltration basin is less than 3 feet to bedrock or the seasonally high water table;

4) Potential storm water hotspots or contaminated soils; and

5) Low permeability soils (i.e., Hydrologic Soil Group D soils) or where a confining layer exists below the proposed basin.

b) Infiltration practices must be designed to draw down to the bottom elevation of the practice within 48 hours. The maximum ponding depth shall be based on the soil infiltration rate determined from site-specific soils investigation data taken from the location of proposed infiltration practices on the site. The soils investigation requirement may be waived for smaller residential property practices where the maximum ponding depth is one (1) foot or less.

c) Infiltration practices shall provide for pretreatment of the runoff. Examples of pretreatment include a mowed grass strip between a curb-cut and a small rain garden, a sump manhole or manufactured sediment trap prior to an infiltration basin and a sediment forebay as the first cell of a two-cell treatment system. Where the infiltration system captures only clean runoff (e.g., from a rooftop) pretreatment may not be required.

d) The design shall incorporate a diversion or other method to keep construction site sediment from entering the infiltration system prior to final stabilization of the entire contributing drainage area.

e) The design shall incorporate provisions that will prohibit construction equipment from compacting the soils where infiltration practices are proposed.

f) A plan for maintenance of the system must be submitted that identifies the maintenance activities and frequency of activities for each infiltration practice on the site.

4) Water Quantity / Flood Control.

a) The low building elevation shall be set to the higher of the following:

1) Where an effective Base Flood Elevation (BFE) has been established and is included in the City's FIRM, the low floor elevation adjacent to a surface water body shall be established in accordance with the City's Floodplain ordinance. The ordinance

establishes the Regulatory Flood Protection Elevation (low floor elevation) at not less than one (1) foot above the BFE plus any increase due to encroachment of the floodway.

2) Where a BFE has not been established, the low floor elevation shall be two (2) feet or more above the highest of the following:

(i) The 100-year/24-hour event as determined by a technical evaluation by a qualified engineer or hydrologist.

(ii) The 100-year/10-day runoff (snowmelt) event as determined by a technical evaluation by a qualified engineer or hydrologist.

b) An emergency overflow shall be incorporated into the site design at or above the BFE or modeled high water level to convey a 100-year discharge away from buildings to the next downstream water body. Existing, natural or man-made emergency overflows shall be analyzed as part of the design process. The lowest opening shall be at least 1.5 feet above the emergency overflow elevation of the adjacent water body, unless the analysis shows that adequate storage volume exists within the basin to provide a reasonable level of protection from flooding.

c) Fill around a building or structure shall be above the BFE and extend a horizontal distance of at least 15 feet in all directions.

d) For underground parking structures with a low floor elevation below the high water level or emergency overflow elevation, the drainage system within the parking structure shall include anti-backflow devices and flood protected to minimize the impacts of high ground water levels during flood events.

e) Projects in the Vermillion River Watershed must not result in a net loss in floodplain storage.

5) <u>Rate Control</u>.

a) Discharge rates leaving the site must not exceed the current rates for the 2, 10 and 100-year, 24-hour storm events, using a Type II storm distribution and antecedent moisture conditions 2 (AMC-2).

1) For projects in the Vermillion River Watershed, discharge rates leaving the site must not exceed the current rates for the 1-year storm instead of, or in addition to, the 2-year event.

b) On-site rate controls may not be needed if downstream (regional) facilities can be shown to adequately detain/retain the runoff to existing conditions and in accordance with the rates established in Appendix D of this Plan. In this case, the developer or design engineer shall submit a technical evaluation completed by a qualified engineer or hydrologist which must be review and approved by the City Engineer.

c) Where a flow rate variance involves inter-community issues or significant water bodies, the regulatory jurisdiction shall have a review role. Any variances shall be reflected in subsequent plan submittals.

d) As required in the NPDES Construction Permit and in addition to the above requirements, project sites discharging directly to the Black Dog Fen must not increase the discharge rate from the site for the 1-year event.

6) Special Waters and Wetlands.

a) Developments shall meet the requirements of the National Pollutant Discharge Elimination System (NPDES) permit program for all applicable requirements of the most recent permits including, but not limited to the following:

1) Sites discharging to Trout Stream #1, #4 or #7, must (as required in the NPDES Construction Permit) incorporate BMPs that address: the runoff temperature requirements; maintain an undisturbed buffer zone of at least 100 feet between the project site and the trout stream; and cover exposed slopes that are steeper than 3:1 (H:V) within three days of the disturbance.

b) Horizontal vegetated buffer zones shall be established and/or maintained around existing wetlands and storm water treatment ponds. New development and redevelopment projects shall provide a buffer zone around wetlands in accordance with the requirements in the City's Wetland Protection and Management Plan. Storm water ponds with a permanent pool of water (i.e., wet ponds) shall have an average 20-foot buffer around the perimeter of the basin. The buffer shall extend form the normal water level to the top of the pond slope.

Wetland Classification	Permanent Buffer Strip Average Width (feet)	Minimum Permanent Buffer Zone Width (feet)	Percentage Native Vegetation
Protection	50	30	Entire
Improvement	35	25	Entire
Management	25	20	Majority
Management II	20	20	Majority

c) Water level fluctuations in wetlands shall be managed in accordance with the City's Comprehensive Wetland Protection and Management Plan. A rise (bounce) in elevation greater than 12 inches during a 10-year storm shall be avoided.

7) Design Computations.

a) All hydrologic data shall be completed using NRCS methodology; i.e. HydroCAD or TR20/TR55, XP-SWMM or a comparable, City approved method. Hydraulic calculations will be accepted in the rational method format or in commonly used software packages such as FHWA HY-8, Eagle Point or XP-SWMM or a compatible, City approved method. These computations shall be submitted to the City, upon request.

b) Rainfall amounts for hydrologic analysis shall be based on Hershfield, D.M., 1961, Rainfall Frequency Atlas of the United States for Duration of 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years. Technical Publication No. 40 (TP-40). Burnsville analyses shall use the values in the following table.

Table C-1

Rainfall Frequency	Rainfall (Inches)
2-Year 24-Hour	2.9
10-Year 24-Hour	4.3
100-Year 24-Hour	6.0

c) Local storm sewer systems shall be designed for the 10-year storm event. The Rational Method shall be the preferred methodology for the design of local systems. Culvert crossings or storm systems in County or State right-of-way may have a design frequency which differs from the City's 10-year design storm. The designer shall contact each agency/unit of government to determine the appropriate design frequency for hydrologically-connected systems.

d) For culvert outlet velocities less than or equal to 6 fps, check shear stress to determine if vegetation or riprap will be adequate. If vegetation is used, temporary erosion control during and immediately follow construction shall be used until vegetation becomes established. For velocities greater than 6 fps, energy dissipaters shall be designed in accordance with MnDOT Design Criteria.

e) Available storage volume of landlocked areas shall be established by first estimating the normal or initial water surface elevation at the beginning of a rainfall event using a documented water budget, evidence of mottled soil, and/or an established ordinary high water level. The available storage analysis will be based on runoff volume resulting from a 100-year/10-day runoff (7.2 inches) and saturated or frozen soil conditions (CN=100).

8) Additional Pond and Infiltration System Design Criteria. Newly constructed or expanded/modified ponds and basins shall be designed and constructed to meet the following:

a) Any storm water pond constructed within the prohibited infiltration zone in Figure C-1, must meet the following criteria:

1) The basin bottom and side walls shall be constructed by compacting at least a 1-foot thickness of soils having at least 20 percent fines (at least 20% passing a #200 sieve). The bottom must have at least a 3-foot vertical separation to the seasonally-high groundwater elevation and/or bedrock.

2) If a 3 foot separation to bedrock or the seasonally-high groundwater elevation cannot be obtained, the basin bottom and sidewalls shall be constructed of materials and methods that are approved by the City Engineer. Possible liner materials may include compacted cohesive soils, geosynthetic materials, plastic liner, soil additives or other materials.

3) The seasonally-high groundwater elevation shall be determined by assessing soil mottling or soil coloration that indicates temporary saturation of the soil.

b) All ponds or basins shall:

1) If the pond will have a permanent pool of water, have an aquatic bench having a 10:1 (H:V) slope for the first 10 feet from the normal water level into the basin.

2) Have a 3:1 maximum slope (above the NWL and below the 10:1 bench, if a wet pond);

3) Maximize the separation between inlet and outlet points to prevent short-circuiting of storm flows;

4) Be made accessible for maintenance and not be entirely surrounded by steep slopes or retaining walls which limit the type of equipment that can be used for maintenance. Vehicle access lane(s) of at least 10 feet shall be provided, at a slope less than 15 percent from the access point on the street or parking area to the pond, to accommodate maintenance vehicles. Maintenance agreements will be required when the pond is not located on City property.

5) Have a skimming device designed to remove oils and floatable materials up to a one-year frequency event. The skimmer shall be set a minimum of 12 inches below the normal surface water elevation shall control the discharge velocity to 0.5 feet per second.

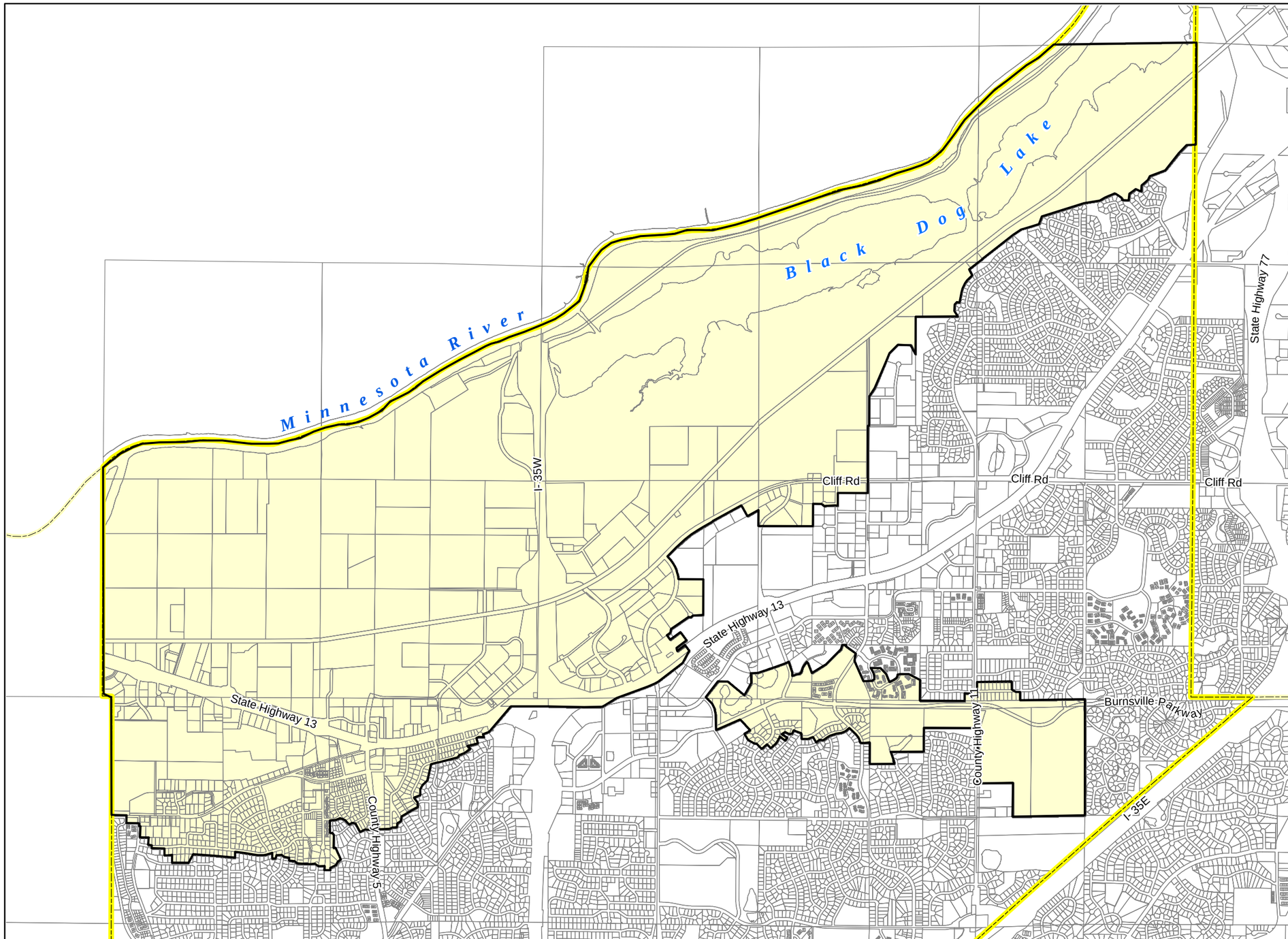
c) For wet ponds, an average 4 feet of permanent pool depth (dead storage depth) shall be provided. This constraint may not be feasible for small ponds (less than about 3 acre-feet in volume or less). In such cases, depths of 3-4 feet may be used. To prevent development of thermal stratification, loss of oxygen, and nutrient recycling from bottom sediments, the maximum depth of the permanent pool should be less than or equal to 10 feet.

9) Erosion and Sediment Control.

a) The City's Erosion Control Ordinances shall be followed for all projects, including those not regulated under the NPDES construction permit. Requirements of the City Code include, but are not limited to, Code Sections: 4-1-4, 4-1-6, 4-8-3-2, 7-3-4, 10-7-23, 10-8-6, 10-8-8, 10-9-2.

b) Prior to the start of any excavation or land disturbing activity for the site, the owner or contractor must have in place and functional an approved method of erosion control. The contractor must have received authorization from the City prior to commencing construction activities.

c) Development projects shall meet the requirements of the National Pollutant Discharge Elimination System (NPDES) construction permit program, including the requirement to prepare and follow a storm water pollution prevention plan (SWPPP). The owner shall submit proof of receipt and approval by MPCA of the permit application prior to commencing construction. A copy of the SWPPP prepared in accordance with the NPDES permit requirements, shall be submitted to the City if requested by the City Engineer.



Legend

- Prohibited Infiltration Boundary
- Parcels
- Burnsville Municipal Boundary
- Municipal Boundary

0 1,250 2,500 5,000 Feet

Map Source: Dakota County, MnGS, Mn/DOT, and SEH Inc.
Map Projection: UTM Zone 15, NAD83 Meters
Map by: sh

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WATER RESOURCES MANAGEMENT PLAN
APPENDIX C
Burnsville, Minnesota

Prohibited Infiltration Zone

Figure C-1

Map Document: (S:\AE\B\Burns\060400\GIS\FigC_1_ProhibitedInfiltrationZone.mxd)
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Appendix D - Hydrologic System Information

The City of Burnsville developed this Water Resources Management Plan (WRMP) to analyze its water resources and to establish controls that help the City achieve their water resource management goals which are generally intended to reduce or minimize the future impacts of development on the City's natural and water resources and improve the quality of the City's resources.

Tabular data for the various water bodies and drainage areas in the City are provided in the tables which follow along with references to where more data may be available. Data is accompanied by Figure D-1 which illustrates the City's overall drainage system and the respective water resources. These data include results of modeling completed primarily in HydroCAD and XP-SWMM.

The following descriptions correspond to the information presented in the hydrologic summary tables at the end of Appendix D.

Watershed and Subwatershed Name

Indicates area shown on the Subwatershed Map Figure D-1. these subheadings within the rows of the table distinguish between each major watershed unit and each subwatershed unit.

New Drainage Area and Old Drainage Area ID

These columns identify the unique drainage area ID for each row within the table. The new ID refers to the new drainage area IDs used in Figure D-1. The old IDs refer to what these areas were labled as in the 2002 WRMP. These areas are generally distinct units that drain directly to a particular pond or major drainage way. The subwatershed boundaries were generally determined using available contour mapping. The boundaries should be considered approximate, due to the limited availability or accuracy of the contour mapping and the possibility of alteration by new construction or storm sewer projects.

Water Body Common Name

The water body common name is listed for lakes and key water bodies.

Subwatershed Drainage Area

Drainage area in acres of the listed drainage area.

Surface Area at NWL

The water surface area at normal water level (in acres) is determined from contour mapping based on the elevation of the pond outlet structure, pump control elevation or a DNR established elevation.

Ratio of Water Body Area to Subwatershed Area

Determined by dividing pond surface area at NWL by the subwatershed drainage area and multiplying by 100. This ratio gives an indication of the potential for the pond to provide treatment to improve water quality. A ratio greater than 1% indicates good stormwater treatment potential if the pond is managed properly.

Outlet Description

The diameter of pipe or type of structure, if known, which provides an outlet for the pond or water body. This information should be used for planning purposes only and not for final design.

NWL

The normal water level of the pond is the lowest controlling elevation. It is usually taken as the invert of the outlet structure or the pump control elevation and is the elevation that the pond will drain down to after a rainfall event. The NWL does not reflect the lowest elevation that may be attained naturally by infiltration, evaporation or transpiration. The elevation is listed in National Geodetic Vertical Datum (NGVD).

Ordinary HWL

The OHWL listed represents the level reported in the DNR's Lake Finder database at www.dnr.state.mn.us for the water body listed in the comments column of the table. If noted by an *, the level is taken from the City's Planning Department database.

100-Year Event (6.0" Rainfall Event)

The 100-year event is also referred to as a rainfall event that has a 1% chance of occurrence in a given year. The information in this table was obtained from various hydrologic/hydraulic models that utilized the Soil Conservation Service TR20 Hydrograph Routing Procedure. The 100-year event assumed a 6.0 inch, Type II distribution, 24-hour duration rainfall event.

<u>HWL</u>

The highest water level achieved in a pond as predicted by the above mentioned model for a 100-year event. The model assumes that the pond elevation is equal to the NWL at the beginning of the storm event. The HWL is affected by the accuracy of the data such as drainage area, storage capacity, outlet description and condition, and run-off factors. All of these factors should be reviewed when HWL is considered critical.

<u>Regulatory BFE (FEMA)</u>

The regulatory base flood elevation as defined in the most recent flood insurance study or flood insurance rate map. This number is only reported for water bodies that have a defined base flood elevation. The BFE may be more or less than the HWL listed in the previous column if more recent modeling was completed that has not yet been incorporated into an official map change by FEMA.

<u>Bounce in Pond</u>

The difference in elevation between the NWL and the HWL.

<u>Storage</u>

The volume of water stored in the pond between the NWL and the HWL.

<u>Peak Outflow Rate</u>

The maximum discharge rate from a pond through the outlet. This normally occurs when the pond is at the HWL and it assumes the full efficiency of the outlet structure.

Model

The model used in determining the HWL and BFE reported in the table. In most areas the model used was HydroCAD or XP-SWMM model. A small stream section downstream of the CAM Ram Wetland Complex was modeled with HEC-RAS as part of the Flood Insurance Rate Map update for that area completed in 2006.

Approximate Overflow Elevation

The elevation at which the pond would overland overflow if the storage capacity is exceeded. This approximate elevation was determined from contour mapping.

Existing Low Building Elevation

This elevation was determined from the "House-Print" on the contour mapping and does not indicate low-floor or basement elevations. These elevations should be considered approximate due to possible inaccuracies in the mapping and buildings that have been constructed after the mapping was completed.

Low Building Elevation

This elevation is determined based on the standards presented in Appendix C of this WRMP. This should be considered a planning level minimum elevation that is required by City standards. The developer should review the source and quality of data available and evaluate the low building elevation for each site directly to ensure a reasonable level of protection is provided.

Freeboard (LBLDG – HWL)

The difference between the low building and 100-year high water level elevations. A negative number indicates that the HWL is higher than the LBLDG. This dimension along with the comments column is intended to highlight areas in the City that could experience problems with flooding. Actual low building elevations, and other pertinent hydrologic data,, should be field verified to determine the extent of the problems.

It should be noted that LBLDG elevation may be different elevation than the low <u>floor</u> elevation per City Ordinance.

Risk of Inundation

This column provides a relative risk of inundation of adjacent structures. The relative risk is not intended to take the place of detailed analyses to evaluate risk. Instead it is intended as an initial planning-level starting point. Almost any structure adjacent to a water body may have a risk of inundation during certain hydrologic events. The data is based on approximate overflow elevations and not on actual field conditions.

Relative Risk of Inundation

Distance Low Bldg. Elevation is Above the BFE or AOE (feet) (1)	**Base Flood Elevation (BFE) or 100-Year HWL**	**Approximate Overflow (AOE)**	**Overall Risk**
0	HIGH	HIGH	HIGH
0 to 1.5	MODERATE	HIGH	HIGH
1.5 to 2.0	MODERATE	LOW	MODERATE
2.0 or more	LOW	LOW	LOW

1. A value of zero means the low building elevation is at the same elevation of the BFE or EOF. A negative number means the elevation is below the BFE or EOF.

Notes

This column provides miscellaneous notes relating to the drainage area.

Table D-1 Hydrologic Summary Data for the 100-Year Design Storm

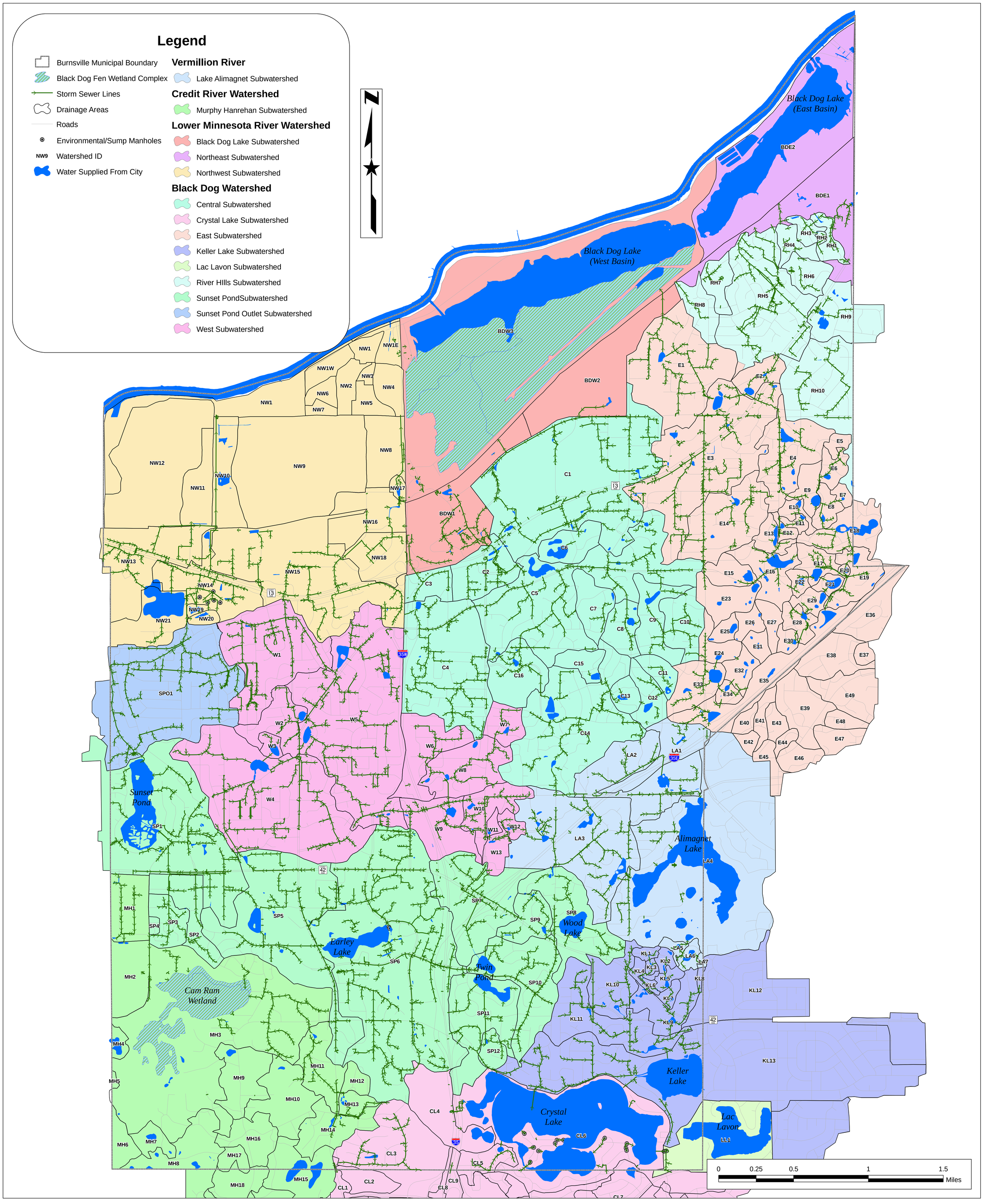
New Drainage Area ID	Old Drainage Area ID	Water Body Common Name	Subwatershed Drainage Area (Acres)	Surface Area at NWL (Acres)	Water Body to Watershed Ratio	Approx. Outlet Size (inches)	NWL (NGVD)	Ordinary HWL DNR	100-Year Event (6.0" Rainfall Event) HWL (NGVD)	BFE (FEMA)	Bounce (ft)	Storage (acre/ft)	Peak Outflow Rate (cfs)	Model	Approximate Overflow Elevation	Approx. Existing Low Building Elevation (LBE)	Low / Minimum Building Elevation	Freeboard (LBE-HWL) (ft)	Risk of Inundation	Notes
BLACK DOG WATERSHED																				
LAC LAVON SUBWATERSHED																				
LL1	A8	Lac Lavon	176.8	2.2	1.2	no outlet	929.6	Not listed by DNR						XP-SWMM	948					DNR #19044600-P. NO OUTLET
KELLER LAKE SUBWATERSHED																				
KL12	A1		183.1	1.4	0.8	30	944.5		958.3		13.8	23.0	56.0	XP-SWMM	958	958	960.3	-0.3	High	Apple Valley runoff tributary to Burnsville
KL 1	A35		8.5	0.5	5.9	12	1008.0		1010.1		2.1	1.4	3.1	XP-SWMM	1014	1015	1012.1	4.9	High	Summit Oaks
KL 2	A39		10.3	0.4	3.9	12	994.0		996.9		2.9	1.3	5.1	XP-SWMM	1001	1006	998.9	9.1	Low	
KL 3	A36		4.7	0.3	6.3	12	1000.0		1003.9		3.9	0.9	3.6	XP-SWMM	1008	1006	1005.9	2.1	High	Summit Oaks
KL 4	A37		11.2		0.0	12	997.0		999.1		2.1	1.7	8.9	XP-SWMM	N/A		1001.1			Summit Oaks
KL 5	A40		11.9	1.0	8.4	12	978.7		980.1		1.4	4.5	1.7	XP-SWMM	981	986	982.1	5.9	Low	
KL 6	A38		4.5	0.1	2.2	12	990.0		997.0		7.0	1.5	9.8	XP-SWMM	1005	1016	999.0	19.0	Low	Summit Oaks
KL 7	A41		10.5	0.5	4.8	12	972.7		974.8		2.1	1.8	3.3	XP-SWMM	976	988	976.8	13.2	Low	
KL 8	A4		3.5	0.1	2.8	12	979.7		982.2		2.5	0.6	0.8	XP-SWMM	982		984.2			
KL 9	A46		62.4	1.0	1.6	18	954.0		962.2		8.2	14.0	28.5	XP-SWMM	963	988	964.2	25.8	Low	
KL10	A3		74.8	0.5	0.7	30	972.0		978.8		6.8	8.0	72.7	XP-SWMM	980	976	980.8	-2.8	High	
KL11	A6		150.2	2.9	1.9	42	944.5		950.7		6.2	27.3	105.1	XP-SWMM	952	951	952.7	0.3	High	
KL13	A7	Keller Lake	725.9	28.1	3.9	72	934.1	934.5	938.7	936.0	4.6	302.1	69.3	XP-SWMM	940	938.5	940.7	-0.2	High	DNR #19002500-P
KL14	A2		112.9	2.7	2.4	12	952.0		958.0		6.0	22.0	6.2	XP-SWMM	958		960.0			Apple Valley runoff tributary to Burnsville
CRYSTAL LAKE SUBWATERSHED																				
CL3	A13		180.7	2.0	1.1	30	983.1		985.8		2.7	12.4	37.8	XP-SWMM	986.8		987.8			
CL4	A22		105.3	7.3	6.9	10' weir	936.7		938.4		1.7	9.3	55.7	XP-SWMM	940	1004	940.4	65.6	Low	Portion west of I-35 drains to directly to Buck Hill Bay
CL5	A23		27.6	1.6	5.8	15	938.0		940.8		2.8	3.6	8.1	XP-SWMM	944	950	942.8	9.2	Low	
CL6	A24	Crystal Lake	549.5	298.6	54.3	36	933.4	934.5	935.0	936.0	1.6	392.7	61.1	XP-SWMM	938	940	937.0	5.0	Low	DNR #19002700-P
SUNSET POND SUBWATERSHED																				
SPO1	NW1		402.6		0.0	No Data														Hydrocad nodes: 9106, 9107, 9110 - Sunset Pond Outlet
SP 1	A33	Sunset Pond	441.7	57.6	13.0	48	854.7	Not listed by DNR	856.5		1.8	229.3	44.9	XP-SWMM	860	860	858.5	3.5	High	Includes Sunset Pond
SP 2	A47		71.7	0.2	0.3	drop structure	863.5		876.6		13.1	0.8	230.8		880	880	878.6	3.4	High	TIF Development; Special drop structure outlet
SP 3	A48		46.5	0.2	0.4	12	880.0		888.2		8.2	4.9	45.6		885	884	890.2	-4.2	High	TIF Development
SP 4	A49		5.0	0.1	2.0	12	885.0		886.1		1.1	0.4	4.0		888	890	888.1	3.9	Low	TIF Development
SP 5	A32	Judicial Pond	372.9	5.3	1.4	48	892.0		898.7		6.7	52.3	86.2	XP-SWMM	900	920	900.7	21.3	Low	
SP 6	A31	Earley Lake	764.2	28.6	3.7	36	902.0	906.7	911.9	911.9	9.9	324.5	53.1	XP-SWMM	916	914	913.9	2.1	High	DNR #19003300-P
SP 7	A27		180.2	0.7	0.4	10' weir	921.0		923.9		2.9	26.8	316.5	XP-SWMM	928		925.9			
SP 8	A28	Wood Park Pond	145.0	14.2	9.8	18	1001.0	998.8	1003.4		2.4	37.2	6.6	XP-SWMM	1012	1010	1005.4	6.6	High	DNR #19002400-W
SP 9	A29		53.4	2.9	5.4	12	1009.0		1010.6		1.6	13.7	4.0	XP-SWMM	1011	1018	1012.6	7.4	Low	
SP10	A30	North Twin	159.8	4.7	2.9	36	914.5		923.8	923.8	9.3	141.7	79.9	XP-SWMM	926	930	925.8	6.2	Low	DNR #19002800-W
SP11	A26	South Twin	151.1	8.7	5.8	36	917.0		923.5	923.5	6.5	141.7	79.9	XP-SWMM	926	926	925.5	2.5	High	DNR #19002800-W
SP12	A25		23.5	0.3	1.3	27	932.7		941.0		8.3	3.5	61.4	XP-SWMM	936	946	943.0	5.0	Low	
WEST SUBWATERSHED																				
W 2	B11		67.7	1.4	2.1	36	867.7		875.1		7.4	7.0	68.1	HydroCAD	877	878	877.1	2.9	High	
W 3	B9		13.6	2.2	16.2	21	882.0		892.0		10.0	97.9	22.0	HydroCAD	890	891	894.0	-1.0	High	Equalizes with Pond B10
W 4	B10		438.5	4.9	1.1	21	882.0		892.0		10.0	97.9	22.0	HydroCAD	890		894.0			Equalizes with Pond B9
W 5	B12		493.6	4.8	1.0	60	845.3		858.2		12.9	97.5	325.3	HydroCAD	855	854	860.2	-4.2	High	
W 6	B2		96.7	0.4	0.4	30" force main	945.6		952.3		6.7	10.7	45.0	HydroCAD	954	958	954.3	5.7	Low	
W 7	B1		37.6	0.7	1.9	12	979.5		983.9		4.4	6.3	6.4	HydroCAD	986	990	985.9	6.1	Low	
W 8	B3		106.0	0.5	0.5	30" force main	940.0		956.3		16.3	30.3	45.0	HydroCAD	954	960	958.3	3.7	Low	
W 9	B8		92.9	2.0	2.2	30	948.0		979.2		31.2	34.0	79.3	HydroCAD	976	990	981.2	10.9	Low	
W10	B7		63.2	0.8	1.3	21	969.0		977.5		8.5	11.7	29.9	HydroCAD	978	996	979.5	18.5	Low	
W11	B6		7.3	0.5	6.8	30	1009.2		1011.4		2.2	1.9	21.3	HydroCAD	1012		1013.4			
W12	B4		14.2	0.5	3.5	18	1035.0		1035.0		0.0	0.5	14.3	HydroCAD	1042	1051	1037.0	16.0	Low	
W13	B5		26.6	0.4	1.5	24	1017.0		1021.1		4.1	1.9	26.7	HydroCAD	1023	1046	1023.1	24.9	Low	
CENTRAL SUBWATERSHED																				
C 1	G1		251.0		0.0	no ponding									N/A					
C 2	D13		80.4		0.0	no ponding									N/A					
C 3	C2		39.7		0.0	no ponding									N/A					
C 4	C1		289.9	0.7	0.2	18	840.0		858.9		18.9	38.7	45.8	HydroCAD	859	864	860.9	5.1	Low	
C 5	D12		374.7	6.7	1.8	48	865.0		873.8		8.8	98.3	84.5	HydroCAD	870	878	875.8	4.2	Low	Equalizes with Pond D12
C 6	D11		50.9	7.6	14.9		869.8								870	876				Equalizes with Pond D12
C 7	D8		53.7	1.5	2.8	6	957.1		962.6		5.5	11.5	2.2	HydroCAD	961	971	964.6	8.4	Low	
C 8	D9		45.1		0.0	no outlet														NO OUTLET Proposed outlet to D10
C 9	D10		71.8	2.0	2.8	15	970.0		977.5		7.5	24.2	15.4	HydroCAD	978	976	979.5	-1.5	High	
C10	D1		64.9	0.1	0.2	12	964.9		1000.8		35.9	7.9	20.1	HydroCAD	999	998	1002.8	-2.8	High	
C11	D2		27.5	1.9	6.9	24	1014.2		1016.4		2.2	3.4	16.6	HydroCAD	1028	1022	1018.4	5.6	High	
C12	D3		42.9	2.7	6.3	18	1002.4		1006.8		4.4	8.3	16.2	HydroCAD	1017	1018	1008.8	11.2	High	
C13	D4		24.2	1.0	4.1	12	989.0		998.3		9.3	14.1	8.4	HydroCAD	999	1000	1000.3	1.7	High	
C14	D6		318.9	4.4	1.4	24	963.0		974.0		11.0	65.5	47.9	HydroCAD	974	972	976.0	-2.0	High	
C15	D5		31.0	1.4	4.5	12	968.0		971.1		3.1	3.6	23.1	HydroCAD	978	976	973.1	4.9	High	
C16	D7		82.6	1.1	1.3	36	959.5		965.0		5.5	22.8	55.7	HydroCAD	961	962	967.0	-3.0	High	

Table D-1 Hydrologic Summary Data for the 100-Year Design Storm

New Drainage Area ID	Old Drainage Area ID	Water Body Common Name	Subwatershed Drainage Area (Acres)	Surface Area at NWL (Acres)	Water Body to Watershed Ratio	Approx. Outlet Size (inches)	NWL (NGVD)	Ordinary HWL DNR	100-Year Event (6.0" Rainfall Event) HWL (NGVD)	BFE (FEMA)	Bounce (ft)	Storage (acre/ft)	Peak Outflow Rate (cfs)	Model	Approximate Overflow Elevation	Approx. Existing Low Building Elevation (LBE)	Low / Minimum Building Elevation	Freeboard (LBE-HWL) (ft)	Risk of Inundation	Notes
BLACK DOG WATERSHED																				
EAST SUBWATERSHED																				
E 1	E48		195.6	1.4	0.7	36	853.2		865.1		11.9	39.4	109.7		867	863	867.1	-2.1	High	
E 2	E46		35.9	1.5	4.2	18	879.0		897.5		18.5	167.8	23.2	HydroCAD	903	901	899.5	3.5	High	Equalizes with Pond E47
E 3	E47		347.2	3.3	1.0	18	879.0		897.5		18.5	167.8	23.2	HydroCAD	903	901	899.5	3.5	High	Equalizes with Pond E46
E 4	E44		121.3	2.6	2.1	24	925.0		932.5		27.4	28.0	36.9		933	932	934.5	-0.5	High	
E 5	E25		11.7	0.1	0.9	12	953.0		957.5		4.5	1.3	7.5	HydroCAD	962	968	959.5	10.5	Low	
E 6	E26		23.6	1.1	4.7	12	953.0		957.0		4.0	5.3	7.1	HydroCAD	962	968	959.0	11.0	Low	
E 7	E28A		9.2	0.1	1.1	18	935.5		942.0		6.5	0.5	12.6	HydroCAD	968	970	944.0	28.0	Low	
E 8	E27		24.3		0.0	no ponding														
E 9	E28		30.9	2.1	6.8	18	958.0		961.0		3.0	65.6	18.2	HydroCAD	946	948	963.0	-13.0	Moderate	Equalizes with ponds E23 and E24
E10	E43		15.0	1.3	8.7	15	935.5		938.6		3.0	7.0	9.1	HydroCAD	940	942	940.6	3.5	Low	Equalizes with Pond E40, E41, and E42
E11	E42		8.8	0.5	5.7	18	935.5		938.5		3.0	0.6	11.8	HydroCAD	940	944	940.5	5.5	Low	Equalizes with Pond E40, E41, and E43
E12	E41		10.4	0.6	5.8	21	935.8		938.8		3.0	4.8	10.6	HydroCAD	939.6	942	940.8	3.2	Low	Equalizes with Pond E40, E42, and E43
E13	E40		23.7	2.0	8.4	18	935.2		938.5		3.3	9.9	11.2		938	948	940.5	9.5	Low	Equalizes with Pond E41, E42, and E43
E14	E45		138.3	1.2	0.9	21	924.4		930.7		6.3	21.8	18.0	HydroCAD	931	932	932.7	1.3	High	
E15	E38		34.4	3.6	10.5		957.1		959.2		2.1	7.0	4.4	HydroCAD	962	966	961.2	6.8	Low	Equalizes with Pond E37
E16	E39		67.2	5.1	7.6	18	944.0		946.9		2.9	15.4	12.4	HydroCAD	948	952	948.9	5.1	Low	
E17	E21		32.5	2.3	7.1	36	935.0		939.1		-4.1	2.5	54.9		940	940	941.1	0.9	High	6" and 12" force mains
E18	E24		76.7	8.6	11.2	21	936.7		940.3		3.7				962	944	942.3	3.7	High	Equalizes with ponds E23 and E28
E19	E23		56.4	1.7	3.0	42	938.5		944.4		5.9	6.4	57.4		942	946	946.4	1.6	Moderate	Equalizes with ponds E24 and E28
E20	E22		3.2	0.8	24.8	42	946.0		948.5		2.5	3.3	40.3		949		950.5			
E21	E19		12.5	3.1	24.8	12	933.0		937.4		4.4	6.5	4.5		935	950	939.4	12.6	Low	
E22	E20		12.9	1.0	7.8	12	935.0		938.2		3.2	1.6	6.2	HydroCAD	939	936	940.2	-2.2	High	
E23	E37		53.5	1.4	2.6		957.1		959.2		2.1	7.0	4.4	HydroCAD	962		961.2			Equalizes with Pond E38
E24	E30		31.5	1.5	4.8	12	988.0		990.6		2.6	7.0	4.2	HydroCAD	992	1014	992.6	23.4	Low	
E25	E36		15.0		0.0	no outlet			976.5			1.7	3.6	HydroCAD			978.5			NO OUTLET; Proposed to outlet into E34
E26	E34		18.3	0.8	4.4	12	968.0		970.2		2.2	2.9	4.0	HydroCAD	970		972.2			
E27	E35		21.9		0.0	no outlet														NO OUTLET; Proposed to outlet into E34
E28	E17		25.7	0.9	3.5	12	945.0		949.3		4.3	6.0	2.7		948	950	951.3	0.7	Moderate	
E29	E18		18.5	1.1	6.0	15	935.0		937.5		2.5	2.7	7.5	HydroCAD	938	942	939.5	4.5	Low	
E30	E16		13.7	0.6	4.4	12	960.0		961.2		1.2	1.8	1.6	HydroCAD	962	966	963.2	4.8	Low	
E31	E33		17.4	0.9	5.2	12	969.0		970.8		1.8	2.3	4.0	HydroCAD	976		972.8			
E32	E32		27.1	1.1	4.1	12	971.0		973.3		2.3	8.9	3.7	HydroCAD	976		975.3			
E33	E29		59.6	4.3	7.2	12	989.5		992.1		2.6	12.6	3.7		1002	1006	994.1	13.9	Low	
E34	E31		13.2	0.9	6.8	12	992.0		992.7		0.7	2.3	1.8	HydroCAD	996	1002	994.7	9.3	Low	
E35	E15		114.8	3.0	2.6	24	943.1	.....	946.1		3.0	10.6	16.6	HydroCAD	950	952	948.1	5.9	Low	
E36	E14		69.2	0.3	0.4	12	943.0		963.8		20.8	13.3	6.6		958	958	965.8	-5.8	High	Watershed in Apple Valley -runoff tributary to Burnsville
E37	E12		10.4		0.0															Watershed in Apple Valley -runoff tributary to Burnsville
E38	E13		61.6	2.0	3.2	12	947.2		950.7		3.5	7.6	3.9		956	956	952.7	5.3	High	Watershed in Apple Valley -runoff tributary to Burnsville
E39	E10		73.1	8.4	11.5	12" force main	968.0		972.4		4.4	33.2	7.0		974	974	974.4	1.6	High	Watershed in Apple Valley -runoff tributary to Burnsville
E40	E3		13.6	1.6	11.8	12" force main	948.0		958.9		10.9	5.8	0.5		958	956	960.9	-2.9	High	Watershed in Apple Valley -runoff tributary to Burnsville
E41	E11		18.6	0.8	4.3	12	965.9		968.1		2.2	24.5	3.5		974	974	970.1	5.9	High	Watershed in Apple Valley -runoff tributary to Burnsville
E42	E1		10.6	0.3	2.8	12	984.0		986.0		2.0	1.4	4.0		990	988	988.0	2.0	High	Watershed in Apple Valley -runoff tributary to Burnsville
E43	E4		17.0	4.3	25.2	12	967.0		970.0		3.0	2.7	4.6	HydroCAD	978	976	972.0	6.0	High	Watershed in Apple Valley -runoff tributary to Burnsville
E44	E8		9.4	1.6	17.0	12	1008.0		1012.7		4.7	1.0	6.0		1012	1014	1014.7	1.3	Moderate	Watershed in Apple Valley -runoff tributary to Burnsville
E45	E2		22.2	5.2	23.4	12" force main	1016.0		1018.6		2.6	5.5	0.5	HydroCAD	1022	1020	1020.6	1.4	High	Watershed in Apple Valley -runoff tributary to Burnsville
E46	E9		26.7	1.1	4.1	12	1009.7		1020.5		10.8	4.9	2.7	HydroCAD	1022	1024	1022.5	3.5	Low	Watershed in Apple Valley -runoff tributary to Burnsville
E47	E5		29.3	1.2	4.1	12	1005.5		1012.4		6.9	4.4	6.1		1012	1014	1014.4	1.6	Moderate	Watershed in Apple Valley -runoff tributary to Burnsville
E48	E6		16.8	13.2	78.4	12	1002.8		1004.7		1.9	4.9	6.1		1006	1006	1006.7	1.3	High	Watershed in Apple Valley -runoff tributary to Burnsville
E49	E7		67.6	2.3	3.4	18	996.5		1003.8		7.3	10.4	13.8		1002	1004	1005.8	0.2	Moderate	Watershed in Apple Valley -runoff tributary to Burnsville
RIVER HILLS SUBWATERSHED																				
RH 1	L1		24.8	0.5	2.0	18	797.6		800.5		2.9	0.1	12.1	HydroCAD	801.5	808	802.5	7.5	Low	
RH 2	L2		3.3	0.1	3.0	12	797.0		799.0		2.0	0.2	4.6	HydroCAD	805	809	801.0	10.0	Low	
RH 3	L3		17.5	0.4	2.3	12	748.0		758.0		10.0	10.0	11.7		763	764	760.0	6.0	High	
RH 4	L5		27.1	0.0	0.0	21	746.8								755	793				
RH 5	F3		256.0		0.0	no ponding									N/A					
RH 6	L4		38.6		0.0	18	795.2								812	818				
RH 7	F4		35.0		0.0	no ponding									N/A					
RH 8	F5		91.0		0.0	no ponding									N/A					
RH 9	F2		95.9	3.1	3.2	12	872.0		873.8		1.8	20.1	5.9	XPSWMM	877	880	875.8	6.2	Low	
RH10	F1		171.0	2.9	1.7	18	892.0		899.3		7.3	30.2	22.8	XPSWMM	901	902	901.3	2.7	High	

Table D-1 Hydrologic Summary Data for the 100-Year Design Storm

New Drainage Area ID	Old Drainage Area ID	Water Body Common Name	Subwatershed Drainage Area (Acres)	Surface Area at NWL (Acres)	Water Body to Watershed Ratio	Approx. Outlet Size (inches)	NWL (NGVD)	Ordinary HWL DNR	100-Year Event (6.0" Rainfall Event)					Model	Approximate Overflow Elevation	Approx. Existing Low Building Elevation (LBE)	Low / Minimum Building Elevation	Freeboard (LBE-HWL) (ft)	Risk of Inundation	Notes
									HWL (NGVD)	BFE (FEMA)	Bounce (ft)	Storage (acre/ft)	Peak Outflow Rate (cfs)							
CREDIT RIVER WATERSHED																				
MURPHY HANREHAN SUBWATERSHED																				
MH 1	J10		72.7		0.0	no ponding									N/A					
MH 3	J8		63.1	0.1	0.2	grate	915.3								920	918				
MH 3	J9	Cam Ram Wetland	706.7	70.1	9.9	channel	858.0		864.8	865.0	6.8	38.3	2.9	XPSWMM	N/A		866.8			Cam Ram outlet to west into Scott County
MH 6	K4		31.5	1.0	3.2	12	998.0		1001.0	1001.0	3.0	4.4	4.3		1002		1003.0			
MH 7	J11		28.4		0.0	no ponding														
MH 8	K3		83.2		0.0	no ponding									N/A					
MH 9	J7		83.6		0.0	12	942.0		946.8		4.8	1.5	3.7	XPSWMM	946	950	948.8	3.2	Low	Wildwood Pond
MH10	J6		92.2	1.0	1.1	30	940.0								950	958				
MH11	J5		74.9	0.3	0.4	42	950.0		954.5		4.5	14.6	8.1	XPSWMM	945	980	956.5	25.5	Low	
MH12	J4		22.5	1.9	8.4	18	982.0		998.8		16.8	2.3	9.8	XPSWMM	998	1014	1000.8	15.2	Low	
MH13	J3		15.9		0.0															
MH14	J2		58.6	0.6	1.0	12	1002.0		1008.0		6.0	7.9	6.3	XPSWMM	1004	1024	1010.0	16.0	Low	
MH15	J1	Horseshoe Lake	49.8	14.6	29.3	12	990.0	990.0*	995.5		5.5	14.3	1.2	XPSWMM	1016		997.5			Includes Horsehoe Lake - DNR #19003200-P. Proposed storm sewer to be constructed and routed to J2.
MH16	K1		53.0		0.0	no ponding									N/A					
MH17	K2		15.5		0.0	no ponding									N/A					
LOWER MINNESOTA RIVER WATERSHED																				
NORTHWEST SUBWATERSHED																				
NW 1	NW16		17.3		0.0	No Data														Hydrocad node: 5016
NW 2	NW12		29.9		0.0	No Data														Hydrocad node: 5012
NW 3	NW14		7.1		0.0	No Data														Hydrocad node: 5014
NW 4	NW15		36.3		0.0	No Data														Hydrocad node:5015
NW 5	NW13		25.6		0.0	No Data														Hydrocad node:5013
NW 6	NW11		18.5		0.0	No Data														Hydrocad node:5011
NW 7	NW10		10.7		0.0	No Data														Hydrocad node: 5010
NW 8	NW5		75.5		0.0	No Data														Hydrocad node: 5005
NW 9	NW6		363.3		0.0	No Data														Future Quarry Lake subwatershed
NW10	NW7		78.1		0.0	No Data														Hydrocad node:5007 - Outlets to NW Subwatershed of LMRWD
NW11	NW8		62.4		0.0	No Data														Landfill
NW12	NW9		282.9		0.0	No Data														Landfill - Outlets to NW Subwatershed of LMRWD
NW13	NW2		162.1		0.0	No Data														Hydrocad node: 102
NW15	NW3		590.2		0.0	No Data														Hydrocad nodes:9124, 9126, 9127, 9128, 9129
NW16	NW4		93.4		0.0	No Data														Hydrocad node: 5001
NW17	NW5A		9.3		0.0	No Data														Hydrocad node:5002
NW18	NW4A		76.6		0.0	No Data														Hydrocad node:5000
NW19	NW1B		5.6		0.0	No Data														Hydrocad node: 9101
NW20	NW1A		10.4		0.0	No Data														Hydrocad node:9100
NW21	NW1C		95.9		0.0	No Data														Hydrocad node:9105
BLACK DOG LAKE WEST SUBWATERSHED																				
BDW1						No Data														
BDW2						No Data														
BDW3						No Data														
BLACK DOG LAKE EAST SUBWATERSHED																				
BDE1						No Data														
BDE2						No Data														
VERMILLION RIVER WATERSHED																				
LAKE ALIMAGNET SUBWATERSHED																				
LA 1	H4		67.4		0.0	no ponding														
LA 2	H3		177.2	3.2	1.8	no ponding														
LA3	H2		297.2	10.3	3.5	18	958.0		962.8		4.8	102.0	8.4		960	972	964.8	9.2	Low	Watershed drains to east through Apple Valley
LA4	H1	Lake Alimagnet	701.1	112.0	16.0	30	954.5	954.8	957.1	959.0	2.6	217.5	75.2		958	968	960.0	10.9	Low	DNR # 19002100-P
LA5	A43		9.3	0.2	2.2	12	1006.0		1009.5		3.5	1.6	7.0		1015		1011.5			Lift station - Pumped to Lk Alimagnet Watershed
LA6	A42		14.3	1.6	11.2	15	1010.0		1011.3		1.3	2.3	5.7	HydroCAD	1018		1013.3			Drains to A43 then pumped to Lk Alimagnet watershed
LA7	A45		2.4	0.1	4.2	12	1003.0		1008.5		5.5	0.3	2.3	HydroCAD	981		1010.5			Drains to A42 to A43 then pumped to Lk Alimagnet wtrsd



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WRMP Update Map

BURNVSILLE, MINNESOTA

Figure

D-1

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Appendix E – Water Resource Related Agreements

The City of Burnsville has entered into a number of water resource related agreements that govern in part how the City of Burnsville must manage its water resources. These agreements include joint powers agreements between the City and Watershed Management Organizations having jurisdiction within its boundaries, agreements between the City and adjoining communities, or agreements it may have with other governmental units or private parties. A description of the water resources related agreements which the City has entered into are described below.

1. Joint Powers Agreement with the Black Dog Watershed Management Organization.

2. Joint Powers Agreement with Credit River Watershed Management Organization.

3. Joint Powers Agreement with the Vermillion River Watershed Management Organization.

4. Joint Powers Agreement with the City of Savage, dated May 21, 1990 – City Project 90LD-3 – relates to billing and construction of Chowen Avenue storm sewer.

5. Joint Powers Agreement with the City of Savage, dated June 6, City Project Nos. 83LD-1A, B & C – relates to the Sunset Pond area.

6. Joint Powers Agreement with the City of Lakeville, dated March 17, 1980 – relates to Crystal Lake Overflow System

7. Joint Powers Agreement with the City of Lakeville, dated September 6, 1983 – relates to storm controls in an area adjacent to a common border between the cities of Lakeville and Burnsville in the vicinity of 35W North and 160th Street.

8. Joint Powers Agreement with the City of Apple Valley, dated March 15, 1982 – relates to City Project No. 81LD-7, and relates to Pond D, called out by Mn/DOT which is located in Burnsville in the SE Quarter of the NW Quarter of Section 16, Township 115, Range 20W.

9. Joint Powers agreement with the City of Apple Valley, dated December 18, 1978 – relates to Alimagnet Lake Lift Station to control lake level from stormwater runoff.

10. Joint Powers Agreement with the City of Eagan, dated March 15, 1992 – relates to land in Eagan in the SW ¼ of Section 31, Township 27, North Range 23, draining into the City of Burnsville.

11. Joint Powers Agreement with the City of Eagan, dated July 15, 1974 – relates to sanitary sewer, water lines and storm sewer improvements in River Hills 9th Addition, SW Quarter of the NW Quarter of Section 30, Township 27, North Range 23 West.

12. Joint Powers Agreement with the City of Savage, dated January 30, 1991 – relates to City Project 83LD-1A.

13. Joint Powers Agreement with the City of Savage, dated May 3, 1982 – relates to billing fees for properties in savage that are connected tot he Burnsville Water System.

14. Joint Powers Agreement with the City of Lakeville, dated January 3, 1992 – relates to three issues;
    a. Quarterly Potable Water Usage
    b. Maple Island Sanitary Sewer Lift Station Charges
    c. Payment for the Crystal Lake Outlet Construction.

15. Joint Powers Agreement with the City of Apple Valley, dated November 2, 1981 and amended March 7, 1983 – relates to Cobblestone Manor sewer Service Agreement.

16. Joint Powers Agreement with the City of Eagan, dated March 15, 1982 – relates to Subject 81LD-7 and Pond "E" Agreement further relates to Eagan reimbursing the City of Burnsville for appropriate trunk area storm sewer assessments when area is platted or building permits are issued.

17. Joint Powers Agreement with the City of Eagan, dated July 15, 1974. Agreement outlines Burnsville and Eagan responsibilities toward providing storm sewer, sanitary sewer and water service to properties in the River Hills 9th Addition.

Example Storm Water Practice Maintenance

Following is an example Storm Water Pond Maintenance Agreement. The agreement can, and is intended to, be modified to apply to a wide range of storm water BMPs.

EXAMPLE AGREEMENT

REGARDING STORM WATER MANAGEMENT PRACTICES: WATER QUALITY TREATMENT POND

I. THIS AGREEMENT made this _____ day of _____, 200__ by and among the City of Burnsville, Minnesota (hereinafter referred to as the "City") and, _____, a _____ [corporation, individual] (hereinafter referred to as "_____") with reference to the following facts and circumstances:

A. (*)_____ is the fee owner of certain real property situated in the City of _____, legally described as follows:
(Legal)_____,
(*) CAPS_____(_____)
(hereinafter referred to as the "Subject Property").

B. As a condition of its approval of the development for the Subject Property, the City has required that the parties hereto enter into an agreement, which makes provision for the maintenance of the Storm Water Management Practice located within the boundaries of the Subject Property as the same is described and depicted in those certain construction plans drawn by _____, approved by the City and constructed by _____. The Storm Water Management Practice is located in the platted drainage and utility easement in_____.

C. The parties hereto desire to set forth their agreement with respect to the maintenance of the Storm Water Management Practice and the costs of such maintenance.

II. NOW THEREFORE, in consideration of the foregoing facts and circumstances, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

A. For the purposes of this Agreement, maintenance of the Storm Water Management Practice shall mean the annual inspection and certification by a qualified individual that the pond is functioning in accordance with the approved plans and, if necessary, the periodic dredging of the silt buildup in the Storm Water Management Practice as necessary to maintain function, as established for the Storm Water Management Practice in the construction plans and to maintain the proper operation of the treatment function of the Storm Water Management Practice.

B. (*)_____ shall be solely responsible for the maintenance of the Storm Water Management Practice, and shall bear all costs of such maintenance, until such time as _____ (hereinafter referred to as the "Association") is activated pursuant to Article _____, Section _____, of the Declaration of Covenants for _____, whereupon the Association shall bear the sole responsibility for such maintenance and shall bear all costs of such maintenance. If (*)_____, or after its incorporation,

the Association, does not undertake the necessary maintenance within 30 days of notification by the City, or within 30 days provide the City with a schedule for undertaking the necessary maintenance, the City may undertake such maintenance, and the costs reasonably incurred by the City for performing such maintenance shall be reimbursed to the City within 30 days by the party responsible for such maintenance and, if the responsible party does not timely reimburse the City, then the City may recover its costs by levying a special assessment against all single family house lots in the Subject Property, each lot to bear an equal share.

C. (*)_____, as present owner of the Subject Property, for itself and respective successors and assigns, hereby waives any statutory right which it may have to contest any such assessment by the City of its maintenance costs on the basis of the benefit to portions of the Subject Property.

D. Notwithstanding anything contained in this Agreement to the contrary, in the event the city shall establish a policy for maintenance by the City of Storm Water Management Practices located elsewhere in the City of Burnsville under which policy the costs of such maintenance are to be paid either out of general City revenues or by collection of utility or service fees or charges, then any owner of any portion of the Subject Property shall be entitled to petition the City for the inclusion of the Storm Water Management Practice under such maintenance program, and the City shall consent to such request and thereupon authorize the termination of this Agreement. The recording of a certified copy of the Resolution of the City Council of the City which sets forth the consent and authorization described in the foregoing sentence shall serve the terminate this Agreement, without further action on the part of any party hereto.

E. The terms and conditions of this Agreement shall be binding upon, and shall insure to the benefit of, the parties hereto and their respective successors and assigns.

III. IN WITNESS WHEREOF, the parties hereto have caused this document to be executed as of the day and year first above written.

_____ _____

Date

Title _____
for the City of Burnsville, Minnesota

_____ _____

[Corporation/individual] Date

THIS INSTRUMENT DRAFTED BY _____

Appendix F – Local Permitting Process

The City's process for water resource related permitting is a significant aspect of the overall City development review and permitting program. The key steps in the permitting process are outlined below. In general, the process involves contacting the City Planning Department in the early stages of a proposed project. The Planning Department facilitates the review process with other City departments that may be involved in the project review process (e.g. Natural Resources Department, Engineering Department) prior to the project going before the Planning Commission and City Council. Following Council approval, the applicant submits a permit application and, if the required information has been submitted and reviewed to the satisfaction of the City, a permit is issued.

Step 1. **Initial City Contact.** Developer/applicant contacts the City Planning Department to initiate project review with City departments. Information from the Planning Department can be obtained by calling 952-895-4455 or by visiting the City's website at www.burnsville.org. The applicant will be given a list of the information that must be submitted to the City. The Planning Department will also arrange and facilitate initial meeting(s) and development review from other City departments having review responsibility for the project.

Step 2. **Staff Review Process.** City departments including the Natural Resources and Engineering Departments will begin discussions and preliminary review of the project and work with the applicant to address required elements. Staff will work through project details with the applicant to the point where an appearance before the Planning Commission can be scheduled. For storm water rate, volume, and water quality control/treatment requirements the developer should contact the Engineering Department at 952-895-4400 and refer to the information provided in Appendices C and D of this WRMP. For more information on wetland permitting and related requirements, the applicant should contact the Natural Resources Department at 952-895-4515.

Step 3. **Planning Commission Review.** The City Planning Commission reviews the project, typically resulting in one of the following two outcomes: 1. Recommendation to Council; or 2. Continuation of the project review so that additional information can be gathered, reviewed and presented. Review by the City’s Park and Natural Resources Commission may be required on projects that have significant natural resource impacts.

Step 4. **Council Review.** Council reviews the project and considers any recommendations from the City Commissions and staff. Council may approve, not approve or continue the project so that additional information can be gathered, reviewed and presented. If Council approves the project, the applicant is required to satisfy all conditions of approval and modify plans/design accordingly prior to filing for a permit. pay any fees and satisfy and conditions needed to file for a permit.

Step 5. **Permit Application.** The developer/applicant applies to the Inspections Department for the City building permit and City staff complete final project reviews. No construction activities may commence on the site, and no permit will be issued until the applicant installs the required temporary erosion and sediment control BMPs at the site. This is the only site activity that is allowed prior to issuance of the permit.

Step 6. **Permit Issuance.** Following staff verification that the temporary erosion and sediment control BMPs are in place, the permit is issued approving commencement of construction activities. The permit and accompanying information describes project-specific requirements in more detail.

City of Burnsville Owner / Developer Name: _____

Storm Water Checklist Development Name/Parcel: _____

Total Site Area (ac) _____ Existing Impervious (acres) _____

Area Disturbed (ac) _____ New Impervious (acres) _____

Redevelopment Impervious (acres) _____

Total Impervious (acres) _____

Downstream Receiving Water Name (e.g., wetland, Crystal Lake) _____

Receiving Water Type (Circle One) LAKE STREAM/RIVER WETLAND STORM POND

	Rate Control	**Water Quality**	**Volume Control Standard** (3)	**Erosion & Sediment Control**
	No Increase from Existing Rates	Pollutant Removal Standard (3)		
New Development (4)				
	2, 10 & 100-year	90%TSS, 60%TP(1)	1 inch	Yes
Redevelopment (4), (6)				
New or Additional Impervious	2, 10 & 100-year	90%TSS, 60%TP(1)	1 inch	Yes
Redevelopment Impervious areas	2, 10 & 100-year	70%TSS, 30%TP(2)	0.5 inch	Yes

(1) Annual pollutant removal efficiency as determined by a pollutant loading model approved by the City Engineer. This treatment level applies to the new development portions of a project. If the volume control standard is met through the worksheet in Appendix B, the pollutant removal standard is also considered to be met.

(2) Annual pollutant removal efficiency as determined by a pollutant loading model approved by the City Engineer. This treatment level applies to the redevelopment portions of a project. If the volume control standard is met through the worksheet in Appendix B, the pollutant removal standard is also considered to be met.

(3) The volume required is evaluated using the Worksheet in Appendix B of the Water Resources Management Plan. Restrictions to infiltration apply to hotspots, the area defined in Figure C-1, shallow bedrock or high water table.

(4) Rate control, water quality and infiltration standards apply to any project disturbing one-half acre or more of land or creating 5,000 square feet or more of new impervious area. Additional requirements (including impervious surface coverage limits) apply to any project in Shoreland.

(5) Disturbed area is defined as areas of where soil or the subgrade is exposed during the construction process and includes areas of both new development and redevelopment disturbances. Generally all area within construction limits.

(6) Projects conducting pavement reconstruction/rehabilitation only on existing impervious areas are exempt from rate, water quality and volume control standards. Erosion control standards still apply.

City of Burnsville Owner / Developer Name: _____

Storm Water Checklist Development Name/Parcel: _____

Summary of Required Submittals (not a complete list of all data that may be needed to review a project)		
Standards Section / Category	**Submitted**	**N/A**
1. General		
☒ Map showing overall site area, new and redevelopment impervious areas and construction limits/disturbed area		
2. Water Quality		
☒ Infiltration Worksheet from Appendix B (if applicable)		
☒ Provide P8 (or equivalent) modeling showing annual removal of TSS and TP (if not meeting infiltration requirements)		
☒ Calculations and assumptions showing how total treatment volume is provided		
3. Volume Control / Infiltration Practices		
☒ Soils investigation data from the location of each infiltration BMP on the site		
☒ Calculations showing the maximum drawdown time of 48 hours is met		
☒ Provide pretreatment system for each infiltration BMP on site		
☒ Plan for protecting infiltration BMPs from compaction and sedimentation during construction		
☒ Provide long-term maintenance/operation plan for infiltration BMPs		
4. Water Quantity/Flood Control		
☒ Provide storm sewer and pond system plans and hydrologic/hydraulic calculations and/or models		
☒ Provide a site plan showing drainage areas and documentation of any floodplain impacts (if applicable)		
☒ Note low floor, low opening and high water elevations of adjacent water bodies on grading plans.		
5. Rate Control		
☒ Provide calculations for the 2, 10 and 100-year rainfall event include routing map, modeling and computations.		
☒ In Vermillion River or direct discharges to Black Dog Fen, also provide 1-year rate calculations		
6. Special Waters and Wetlands		
☒ If discharge is to Trout Stream #1, #4 or #7, additional BMPs required per NPDES Permit for erosion control, volume control, temperature control and maintaining a 100 buffer around stream.		
☒ Buffer establishment around wetlands and storm water ponds;		
☒ Buffer distance for wetlands per Wetland Mgmt. Plan		
7. Design Computations		
☒ Calculations and/or modeling for storm system, ponds, downstream waters		
8. Pond and Infiltration Basin Design Items		
☒ Pond construction plans and specifications for ponds in the zone shown in Figure C-1		
☒ Pond design details showing average depth, maximum depth, 10:1 bench, maximum 3:1 slopes above and below the bench, vehicle access, maximum separation between inlet and outlet, outlet skimmer detail and calculations, soil boring information		
9. Erosion & Sediment Control		
☒ Prepare NPDES Permit SWPPP for sites $\geq$1 acre disturbance – submit if requested by City Eng..		
☒ Provide plans for erosion and sediment control BMP's for all projects		

Definitions *(additional definitions in Definitions Section of the WRMP)*:

Development: The construction, installation or alteration of any structure, the extraction, clearing or other alteration of terrestrial or aquatic vegetation, land or the course, current or cross section of any water body or water course or division of land into two (2) or more parcels (source: Burnsville City Code 10-8-2 and 10-4-2). See also re-development and new development.

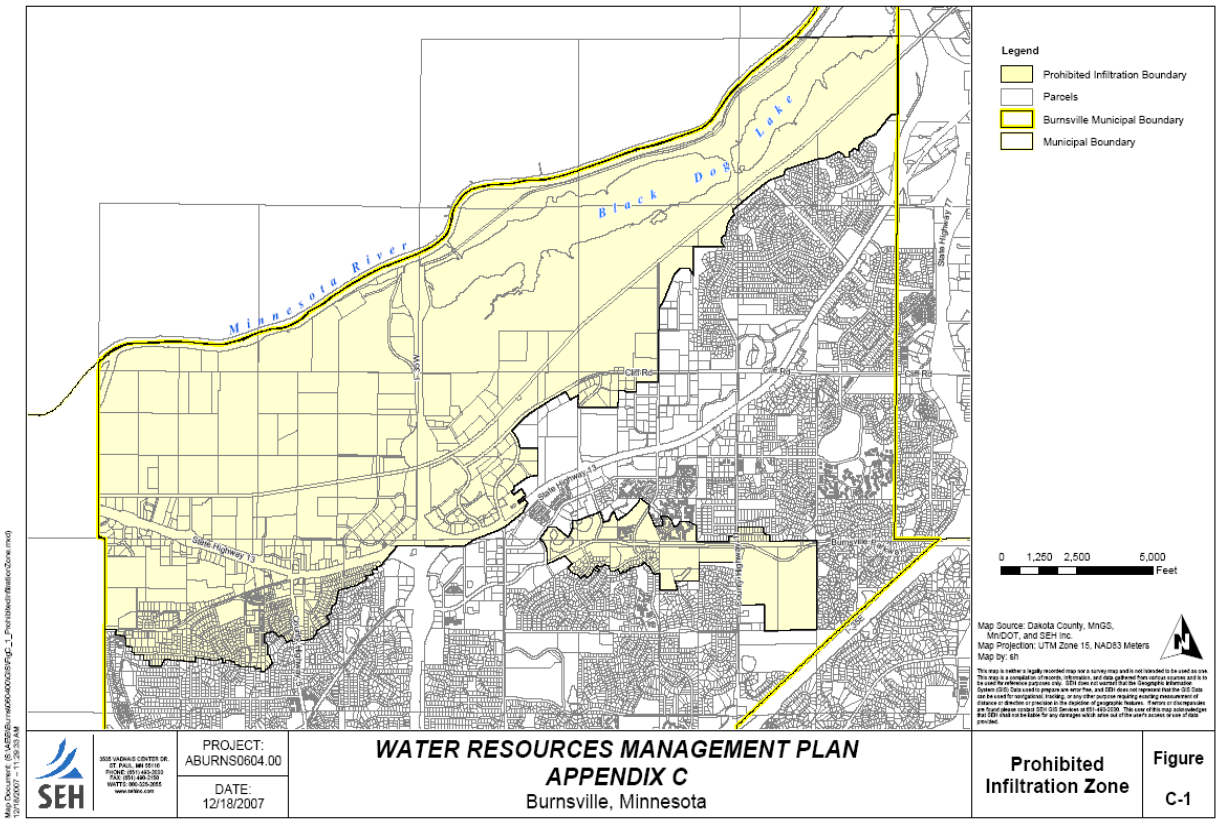
New Development: Development of a property or portion thereof that is currently not developed.

Redevelopment: Any development including but not limited to rebuilding, renovation, revision, remodel, reconstruction or redesign of or at an existing development.

Shoreland: Land located within the following distances from public waters: one thousand feet (1,000') from the ordinary high water level of a lake, pond, or flowage; and three hundred feet (300') from a river or stream, or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater. The limits of shoreland may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the Commissioner of the DNR.

Undeveloped Property: Any property within the City on which no development (as defined in City Code 10-4-2) has occurred.

Figure C-1. Prohibited Infiltration Zone. Projects located in this zone can use wet ponds or filtration BMPs to meet the water quality treatment requirements specified in the Plan standards.



Applicant:
Case File No.:

APPLICATION CHECKLIST

REQUIRED SUBMISSIONS	SUBMITTED	N/A
Preliminary Plat ☒ Provide items listed on Preliminary Plat handout. Development fees will be calculated based on the information shown on the preliminary plat.		
Final Plat ☒ Provide items listed on Final Plat handout when requested by Engineering Department		
Site Survey ☒ Provide all existing conditions on-site and surrounding the property including delineated wetlands		
Site Plan – Existing and Proposed ☒ Provide legal boundaries of the property, easements, buildings, parking lot layout, size of parking stalls, driveway widths, parking lot lighting, curbing detail, setback lines, north arrow, Ordinary High Watermark of lakes, floodplains		
Area Calculations – Existing and Proposed ☒ Provide SF of property and building, total impervious surface area, total % and SF of greenspace, % and SF of landscaping within the parking lot, and % of landscaping 4 feet in width around the perimeter of the building, number of parking stalls		
Grading/Erosion Control Plan - Existing & Proposed ☒ Provide existing and proposed contours with building footprint and spot elevations, contours must extend at least 20 feet beyond lot line, location and details of erosion control fence		
Utility Plan – Existing and Proposed ☒ Provide locations of all utilities, fire hydrants and storm sewer calculations, detail of proposed utilities		
Lighting Plan and Light Fixture Detail ☒ Provide photometry plan and cut sheets of fixtures, location of fixtures on grounds & building exterior		
Signage Plan – Existing and Proposed ☒ Provide SF of all signs including height of freestanding signs, location, colored sign drawings, and sign criteria for multi-tenant buildings		
Landscape Plan – Existing and Proposed ☒ Provide existing vegetation, sodded areas, notation on irrigation, and a planting schedule that includes: size, type, root type		
Building Elevations/Floor Plan – Existing and Proposed ☒ Provide front, sides and rear elevations with all building dimensions, materials and colors clearly labeled on all sides. Include rooftop screen measures, details of trash enclosure, sprinkler notation		
Tree Survey ☒ Provide location of existing trees, list of trees to be saved and removed, woodland evaluation worksheet with the value, # and %'s to be removed and saved, reforestation plan if exceeding threshold		
Noise/Traffic Study ☒ Contact Planning Department to determine if a noise or traffic study is needed prior to making application. A noise or traffic study may be required after you make application		
Environmental Review (EAW / EIS / AUAR) ☒ Provide all documentation required per the MN Environmental Quality Board & State of MN Environmental Rules		
Completed Application Form (SF = Square Footage) (% = Percent) ☒ Provide **15** complete **FOLDED** sets of all plans, filing fee, property owner's signature, signed Professional Fees Agreement, list of property owners within 350 feet from all property lines, and two typed sets of mailing labels		
CD →Submit the following with Revised Plans, including Final Plat, if applicable. ☒ **Provide all plans, drawings, narratives, attachments, etc. 11 X 17 size on a CD (in PDF format).**		

OFFICE USE ONLY

No. of P.H. Signs: _____ **Complete Application:** ☐ Yes ☐ No **Date:** _____

Mail Plans to:

MnDot	☐ Yes (3)	☐ No
DNR	☐ Yes (1)	☐ No
County	☐ Yes (1)	☐ No
LMWD	☐ Yes (1)	☐ No

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APPENDIX L – PARKS MASTER PLAN

2000

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

CITY OF BURNSVILLE

PARKS MASTER PLAN

SEPTEMBER, 2000

Introduction

Parks are an integral part of a city's civic infrastructure. The City of Burnsville has an extensive park system, one which it has planned and built in conjunction with the growth of its residential neighborhoods and commercial and employment centers since its incorporation in 1964. In 2000, the City is over 95 percent developed, and its focus has shifted to redevelopment and neighborhood maintenance. The park system, through this plan, is addressing similar issues of **maintenance, renovation and enhancement**.

The existing park system is sufficient in acreage – with over 1,800 acres of parkland, or approximately 29 acres per 1,000 residents. The number of parks – 75 at present – also ensures that a park lies within walking or biking distance of most households. One of the City's most pressing needs, for a youth ballfield complex, is currently being addressed through development of the Sue Fischer Memorial Park athletic field complex. A few additional parks are anticipated, as certain areas such as the Heart of the City, the Gateway area and the Northwest Quadrant are redeveloped. With these anticipated additions, **the park system is essentially complete**.

Park system needs, then, are related to **quality, not quantity** of parks. Maintenance and renewal are concerns, as facilities age or become obsolete. Furthermore, the park system plan should assess demographic and lifestyle changes in the City's population, and determine how the parks system can best respond to these changes to serve this population in the future. The following issues were identified at the beginning of the planning process:

- How can Burnsville's parks evolve in step with changing demographics and community needs? What changes may be needed in park facilities? In park programming?
- Are there recreational activities for which there is an unmet demand (for example, dog exercise areas)? Can or should the park system meet these demands?
- Are there other emerging activities that haven't been considered in the past, or other uses for the parks?

Background

Park planning efforts go back to the 1950s, when the Burnsville Athletic Club was formed. Throughout the 1960s and 70s, as the City grew, parks and park programs were developed, and public monies were set aside for parkland acquisition. In 1975 an ordinance was adopted requiring park dedication or fees in lieu of dedication from

developers. A series of park studies were completed during the late 1960s and 70s, including a Park and Recreation Facilities Analysis in 1978-79. A Parks Master Plan was adopted in 1981. That plan established goals and objectives for the system, created a classification of parks, and set priorities for park acquisition and improvements in each of ten planning sectors of the City. The majority of those acquisitions and improvements have been accomplished, with the assistance of a park bond approved in 1982. The bond provided the last major growth impetus for the park system. Since then, while the City has developed some small neighborhood parks, its primary focus has been on maintaining what was already in place.

The City's philosophy has been to provide sufficient numbers of parks to meet all community needs throughout the system, at a fairly uniform level. Because of the size of the park system, this "democratic" approach proved the most cost-effective. However, as the City shifts attention from build-out to redevelopment, there is an increasing interest in creating a number of distinctive "Gemstone Parks" in central and highly visible locations (see page 28).

The level of park maintenance was probably at its highest in the late 1980s and early 1990s. Since that time, the system's size and usage, and therefore its maintenance demands have grown significantly, placing pressure on a static budget. In 1999 additional funding was provided to improve the appearance of boulevards and parks, raising the standard of maintenance back to previous levels.

Related Planning Efforts

Many recent or simultaneous planning efforts are related to the park system plan. These include:

- **Comprehensive Plan Update (2000):** The comprehensive plan, approved in 2000 by the Metropolitan Council, includes the elements of community background and policies, land use (including housing and redevelopment), public facilities and implementation. The transportation plan, also updated in 1998, is part of this document.
- **Stormwater Management Plan (1996):** This plan, currently being updated, focuses on integration of stormwater facilities with parks and on wetland restoration to improve stormwater quality.
- **Community Appearance Initiatives:** The City has made a concerted effort, beginning in the late 1990s, to improve its appearance as viewed from its major roads. Streetscape improvement projects have been completed on Burnsville Parkway and Nicollet Avenue, and are being implemented for the I-35W corridor and the Heart of the City area.
- **Natural Resources Master Plan (1999):** This plan defined the City's natural resources through an ecological approach, defining terrestrial, aquatic and wildlife resources and grouping them into resource management units – high

concentrations of natural resource sites. These resource management units are then assigned priorities for management. The recommendations of this plan are integrated into the Parks Master Plan (see page 19).

- **Gateway and Northwest Quadrant Area Planning:** The Gateway Area is located at the City's northern entrance, on either side of I-35W. The area north of Highway 13 and west of I-35W is termed the Northwest Quadrant. Special redevelopment and enhancement plans are being prepared for both areas. Some improvements have already been made in the Gateway area where Burnsville Parkway crosses over I-35W. Major land uses in the Northwest Quadrant include the Freeway Landfill and a portion of the 767-acre Kraemer Quarry. Issues in this area include a current proposal for an amphitheater on the former landfill site and the eventual redevelopment of the quarry into a lake and redevelopment sites. The Parks Master Plan includes goals and concepts for the parks planned for these areas (see page 41).
- **Heart of the City Master Plan (1999):** The Heart of the City district is a redevelopment area centered on Nicollet Avenue and Burnsville Parkway. It is envisioned as a distinctive, compact, mixed-use center of activity that will become a city-wide focal point and gathering place. A Design Framework Plan and zoning ordinance have been adopted for the district, specifying land uses, street types, streetscape improvements and design standards for buildings. The plan includes two parks: a central "town square" and a neighborhood park. General goals for these parks have been integrated into the Parks Master Plan (see page 42).
- **Trails Master Plan:** The trails plan is being developed concurrently with the Parks Master Plan, and the recommendations of each plan are intended to be consistent with the other. The Parks Master Plan shows proposed trail links between parks.

Paved trail in Wood Park

ANALYSIS OF CONDITIONS

The Park System

In 1999 the park system contained approximately 1,800 acres spread throughout 75 parks, comprising over 10 percent of the City's land area. When the two regional facilities in the City are included, the total amount of public open space increases to approximately 2,850 acres.

Parks have been classified into three categories: community park, neighborhood park and mini park, based primarily upon size and extent of facilities. This system is based on national park and recreation standards. However, it is of limited usefulness as a management tool within the Burnsville park system, because the facilities and level of development at many parks do not match their size-based classifications. A new classification system is presented under Park System Organization (page 16).

The sixteen **community parks** generally are 20 acres or more in size and include intensive recreational facilities (playing fields and courts) and/or natural areas for more individualized recreation. They also include the majority of the park system's special uses and facilities: ice center, boat landings, fishing docks, etc. Other special facilities include the 9-hole Birnamwood Golf Course, the Lake Alimagnet Center for the Arts in Alimagnet Park, and "The Garage," a newly opened youth center in Civic Center Park. Community parks draw users from more than one neighborhood, and are generally located along collector or arterial streets for ease of access. They are distributed fairly evenly within the City, so that most households are located within a mile of a community park.

The 35 **neighborhood parks** range from 4 to 40 acres in size, and generally share a common set of facilities, including play structures and one or more playing fields. A few neighborhood parks, such as Tennisioux and Knob Hill, include natural areas or special use facilities such as a sledding hill or fishing dock. Neighborhood parks are intended to be located within ½ to ¾ mile of all households, and to be accessible on foot.

The 23 **mini parks** are generally 1 to 3 acres in size, although a few range up to 8 acres. About half of them function as play lots, with play equipment and an informal playfield; others are largely natural. Special use facilities include the City's two archery sites. Mini parks have traditionally been designed to serve neighbors within a convenient walking distance, and to serve persons with limited mobility, such as small children and the elderly.

The city also has two major **regional facilities.** Part of the Black Dog Unit of the Minnesota Valley National Wildlife Refuge, approximately 1,300 acres in size, is located within the City. Part of Murphy Hanrehan Park Reserve, a 2,400 acre regional park in

Dakota and Scott Counties, is located in the City's southwest corner.

School facilities also help to meet recreational needs. The three school districts that serve Burnsville cooperate with the City and the area's athletic associations to schedule the use of their playing fields.

Conditions in the System

Conditions of park facilities and natural areas in the parks were analyzed during development of this plan. The following issues were raised and discussed:

- Many parks emphasize active recreation, specifically organized sports; although some parks, such as Terrace Oaks West and Sunset Pond, are focused on natural areas and trail use.

Facilities in Oak Leaf West Park

Colonial Park

Lake Park

- Active use areas in parks are well-maintained, but many parks could benefit from enhancement of their natural areas.
- Mowed turf predominates in many parks.
- Trees and shrubs are often ornamental species, with few native plants.

West Buck Hill Park

- Naturalized areas tend to have low plant diversity.
- Trail connections within parks and to parks could be improved. Trails linking active use areas and natural areas are needed in some locations.

Vista View Park

- Some pond and wetland areas could benefit from addition of native plants as buffers along shorelines.
- There is potential for scenic vistas in the parks – toward lakes or toward the Minneapolis skyline, for example – but many are obscured by vegetation.

In general, there are many opportunities to make the park system more responsive to natural resources and to enhance its aesthetic qualities, in keeping with streetscape enhancement initiatives on Nicollet Avenue and Burnsville Parkway. These issues are addressed under Park Management Policies (page 23) and Site-Specific Park Improvements (page 29).

Park Programs and Park Use

The City's Recreation Department offers a wide array of recreational programs such as nature programs, day camps, teen programs, adaptive programs and the very popular Kids of Summer playground program.

The majority of organized youth athletics are provided by the Burnsville Athletic Club (BAC), a non-profit volunteer organization. BAC programs include baseball, basketball, football, golf, hockey, soccer, softball and volleyball. The BAC serves about 8,500 children, about 75 percent of whom are Burnsville residents. The remainder are from Savage and Eagan; the BAC also uses parks in these communities.

Affiliated clubs include the Burnsville Hockey Club and the Burnsville Soccer Club. Both offer recreational and traveling programs for boys and girls. The Burnsville Minnesota Valley Figure Skating Club offers instruction and practice in that sport to about 125 members.

The Valley Athletic Association and the Lakeville Athletic Association are youth athletic associations similar to the BAC that serve Burnsville residents in school districts 196 (southeast) and 194 (southwest), respectively. The Valley Athletic Association is headquartered in Apple Valley. About 20 percent of Burnsville's school-age children live in District 196 and are covered by this association. The Lakeville Athletic Association, in that City, serves about 5 percent of Burnsville's school-age population.

Most adult athletic programs are run by the City's Recreation Department, although some are run by independent leagues that rent city facilities. Facility rentals are not restricted to city residents, but are open to the general public, depending on availability.

While it is obvious that the park system is well-used, statistics regarding park use are generally program-based, since it is easier to collect data on numbers of program participants than on general park users. The following numbers indicate the range of participation in park programs in 1998-1999.

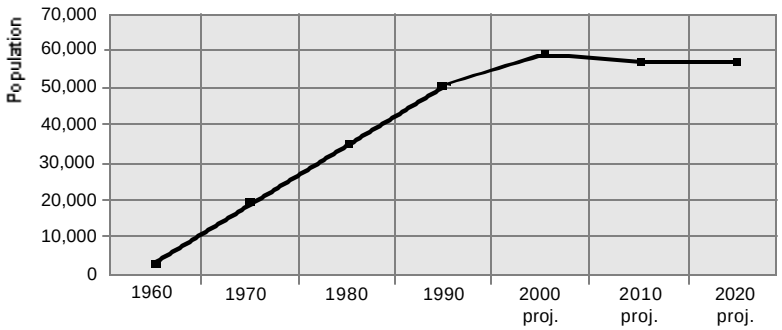
- The seven-week Kids of Summer playground program serves about 750 children in nine parks.
- The Birnamwood Golf Course receives use totalling about 32,500 rounds of golf per year. An eight-week youth golf league serves about 164 participants.
- The city-run summer softball program fields 196 teams in 25 leagues, using 12 fields at three different parks.
- Summer softball programs are also run by independent leagues, with 83 teams.
- Fall softball programs (city-run and independent) served 174 teams
- Other programs include:
    - Summer sand volleyball: 8 teams
    - Fall sand volleyball: 6 - 8 teams
    - Winter broomball: 10 - 12 teams
    - Winter boothockey: 6 - 8 teams
    - Adult hockey: 12 - 20 teams year-round

Demographic Trends Affecting the Park System

In order to assess and anticipate the City's current and future recreational needs, one must understand its current and future population. The age composition of the population, the number of multi-family residents, changes in the economic, racial and ethnic makeup of the population, and the extent of housing turnover in the City's neighborhoods are all likely to impact park use.

Population and Household Growth

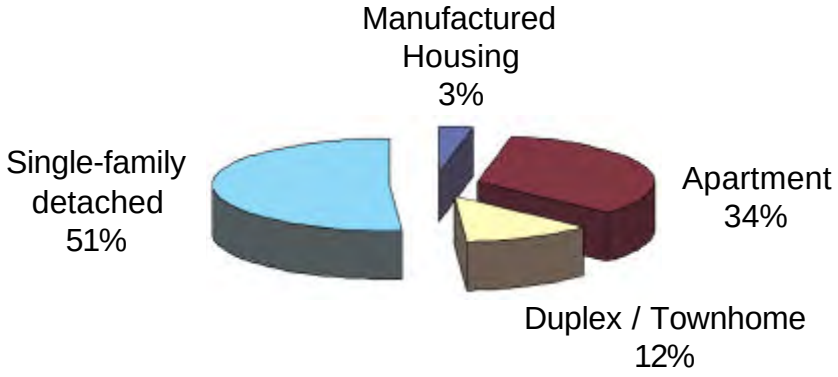
Burnsville's population has almost tripled since 1970, increasing from just under 20,000 people to an estimated 58,670 in 1998. The City's population has already exceeded the Metropolitan Council's projection of 58,500 for 2000. In the future, however, the City's population is expected to decline, to 57,523 in 2010 and 57,002 in 2020.



At the same time, the number of households in the City is expected to grow, from its 1998 estimated level of 22,661 to 23,000 in 2010 and 24,000 in 2020. The reason for this increase is a continuing drop in the number of persons per household. This drop is due to trends such as fewer children per family, an aging population (many of whom live alone), divorce, and the currently strong economy, which has resulted in a trend toward homeownership for young singles or renting one's own apartment rather than sharing one with roommates. In Burnsville, the number of persons per household has dropped from 4.09 in 1970 to 2.58 in 1998.

Housing

Since the 1970s, Burnsville has been notable among metro-area cities for its diversity of housing. Even in 1980, single-family housing represented only 53% of the total occupied housing units. That percentage dropped to 47% in 1990, and is currently estimated at about 51%. Duplexes and townhomes, about 90% of which are owner-occupied, make up about 12% of all occupied housing units, while multi-family apartments constitute about 34%.



About 35% of Burnsville's housing units are rental units, and the City supplies 30% of Dakota County's rental market. The City's rents are higher than the County average, indicating a demand for apartments in Burnsville.

Burnsville continues to enjoy a healthy housing market due to its relatively close-in and convenient location and its many amenities, including good schools, parks, shopping and numerous recreational lakes. The City's housing stock is relatively new, with 46% built between 1980 and 1997 and about 50% between 1960 and 1980. However, the detached housing built in the 70s and 80s has become somewhat dated. Housing more than 20 years old begins to require major repairs. The City has emphasized improvement of housing conditions through code enforcement and maintenance assistance.

Household Composition

In general, the population of the Twin Cities region, like the nation as a whole, is aging. Within this larger trend, however, there may be smaller ebbs and flows occurring at a local level. Burnsville's age makeup is affected by the period of its greatest growth – the 1970s and 80s – when young people purchased homes in the City. In 1980 and 1990, the City's median age was younger than that of Dakota County and the state as a whole. Burnsville has continued to attract first-time homebuyers. Householders in the 25 - 34 age group made up the largest percentage of Burnsville's population in 1980 and 1990 – about 31% in each decade. At the same time, the population of persons over 55 is also increasing; their numbers more than doubled between 1980 and 1990. The over-55 population, generally classified as empty-nesters and seniors, are likely to demand smaller housing, much of it rental, and various types of senior housing, including assisted living. They may also begin to seek housing in close proximity to transit and commercial services.

One relevant trend in the Twin Cities region is the dramatic increase in immigration from outside the U.S., much of it from southeast Asia, Africa, Mexico and eastern Europe. The Office of Refugee Services estimates that well over 90,000 Southeast Asians, 17,000 Africans and about 7,500 Eastern Europeans have arrived in the Twin Cities over the past two decades. Other estimates indicate that there are now over 30,000 recent Spanish-speaking arrivals in the region.

These families have very different demographic characteristics than the local native-born population or even the immigrants from other parts of the United States. For example, they are younger and tend to have more children per family than do the native Minnesotans.

While data from the 2000 U.S. Census are not yet available, anecdotal information from a survey of apartment managers indicates that the renter population in Burnsville

includes substantial numbers of Hispanic, Russian, Hmong, Somali and Chinese immigrants. Organizations that work with immigrant groups indicate that Spanish speakers make up the largest non-English-speaking group in the south and west metro area. As these new arrivals establish themselves it is anticipated that some will purchase homes in the City.

School-Age Children

Much of the use of Burnsville's parks is through the many youth athletic associations which sponsor school-age teams in baseball, softball, soccer, hockey and other sports. Therefore, the existing and projected numbers of school-age children are of concern to park planners and managers.

About 80% of Burnsville children attend school in Burnsville Independent School District 191, where they make up about 70% of the district's population; the remainder of the students are from Eagan and Savage. The City's southwestern corner is served by ISD 194 (Lakeville) and its southeastern quadrant by ISD 196 (Rosemount).

Enrollment in District 191 initially peaked in 1976-77, with just under 11,000 students, driven largely by new housing development in Burnsville. Enrollment reached its low point in 1986-86, with just under 9,000 students. Since that time, enrollment has grown by about 200-300 students per year, mainly due to new housing development in Savage and Eagan. The district's projections through 2002 show enrollment at most elementary schools remaining stable and then slowly declining by about 100 students over four years. Middle and high school enrollments are expected to remain relatively stable.

Participation in the free or reduced price school lunch program serves as a useful indicator of the low income population in the school districts. In District 191, the number of children participating in the free or reduced price lunch program has remained stable at about 1,800 over the past several years, or about 16% of the student population.

There has been a substantial increase in numbers of children from ethnic and racial minorities within the past 15 years. In District 191, the number of minority children has increased from 5.62% in 1983 to 14.6% in 1998. Asians make up the largest group, with over 6%, followed by African-Americans at about 5%; the remainder are of Hispanic and American Indian origin. In 1998, about 4% of District 191's students came from non-English speaking homes.

Housing Turnover

One of the concerns of both the City and the school district is the rate at which single-family homes are "turning over" from empty-nesters to younger families with children, especially school-age children. Theoretically, based on the age of the City's housing and the aging of its householder, there should be a substantial amount of turnover.

However, the reality is that with a mobile population, there is a good deal of "turnover" occurring all the time. Some houses may have been sold a number of times over the past several decades. This pattern is especially true in communities that attract corporate transferees, the majority of whom typically have school-age children.

Another factor in turnover seems to relate to the value of the house. The lower the value of the house, the fewer times it appears to turn over during its lifetime. Occupants tend to stay until retirement age, since neither the equity in the house nor the residents' income represent enough buying power to purchase a newer townhome or other life-cycle housing in the area. Based on discussions with area Realtors, housing turnover in Burnsville is currently slow.

Summary of Demographic Trends

The following trends and projections are based on the demographic data discussed above.

- The City's population has likely reached its peak, and will decline slightly in the coming decades;
- The number of households will continue to grow while household size will continue to decline;
- The number of children increased through the 1980s and 90s but appears to have leveled off and is likely to decline slightly in the coming decade; school districts project slight declines in next 5 years;
- Increased immigration of young families balances the general aging of the City's population;
- Housing turnover is slow;
- The number of low-income children remains fairly constant at about 15%.

Short-Term Projections

The following projections represent a "best guess" scenario for likely changes in the next 10 years – through 2010 – based upon our evaluation of the demographic trends discussed above and current development initiatives in the City. Clearly, any projections are by their nature speculative. The availability of data from the 2000 Census should provide an opportunity to reevaluate and revise these conclusions.

- Turnover of owner-occupied housing will be slow; most residents will remain in their current homes;
- Heavy use of athletic fields will continue;
- Multifamily apartment complexes will continue to attract diverse populations;
- The need for adult recreational facilities – trails, community gardens, gathering places – will continue to grow;

- The Heart of the City, as Burnsville's first major redevelopment area, will add life-cycle housing, pedestrian-scaled commercial development and community gathering places, including parks.

Long-Term Projections

The following projections deal with the 2010-2020 period. Because they are "farther out" from the present, they are somewhat more speculative, and will need to be reexamined and adjusted over the next decade.

- Housing turnover will increase, as seniors find new housing;
- There will be a growing need for senior facilities;
- Housing turnover means that numbers of families with young children will again increase;
- The City's investments in infrastructure will spark private redevelopment;
- The Gateway area will redevelop;
- Use of athletic fields may begin to taper off;
- Continuing need for adult recreational facilities.

PARK-RELATED ISSUES

Beginning in the spring of 1999, a series of neighborhood meetings were held to discuss issues related to park use, facilities and maintenance, specifically the 1999 community appearance initiative, under which funds were added to the park budget for improved maintenance of parks and boulevards. A survey was sent out with meeting notices. Attendees commented on the improved level of park maintenance, and indicated that they had noticed a significant difference from past years. Other comments and concerns shared at meetings and through the survey fall into the following areas:

- Requests for additional landscaping, including trees and flowers;
- Requests for tree pruning and dead tree removal in natural areas;
- Requests for the mowing of specific natural areas;
- Requests for basic amenities such as drinking fountains, picnic tables, horseshoe pits and barbecue grills;
- Requests for security lights, especially in parking areas;
- A few requests for tennis courts and picnic shelters;
- Complaints about after-hours use of parks by teenagers and related noise;
- Complaints about dog owners not cleaning up after their pets.

In October and November of 1999 two community meetings were held by the Parks and Natural Resources Commission to discuss park and trail-related issues, problems

and opportunities. The following qualities were identified as strengths of the park system:

- The high ratio of parkland to people;
- Diversity of park facilities;
- Physical distribution, accessibility;
- Well-maintained;
- Heavily used;
- Ample number of fields; accommodates youth sports needs well;
- Variety of natural areas, varied terrain and topography;
- Presence of water bodies ponds, lakes, etc.

Participants also identified the following areas for improvement:

- Landscaping of trails and paths;
- More multi-use fields, fields of different sizes;
- Enhanced pavement treatment;
- More winter use opportunities – cross-country trail links between parks;
- Better "wayfinding" – direction signs to parks;
- Security, vandalism – better lighting of parking lots, certain trails;
- Lack of "vistas" over the Minnesota River valley;
- Reduce dominance of mowed turf;
- Improvements to wetlands;
- New facilities – community gardens, better seating (shade) for field observation, etc.;
- Better integration of facilities – connections between fields, playgrounds, etc.

Meeting summaries are included in the Appendix.

Park System Vision

The following recommendations were developed based upon input at the neighborhood and community meetings, to define a vision for the evolution of the park system:

- A more visually appealing system, with enhanced landscaping, naturalized areas, and native plant materials;
- Physical and visual connections to the Minnesota River; vistas or viewpoints over the river valley and other water bodies;
- A more integrated system, with trail connections between and within parks, and more opportunities for walking and biking;
- A flexible system that can respond to the changing needs of the City's population;
- An increased emphasis on "destination" parks that have a specific theme or focus.

This vision is consistent with the broad vision defined by the City Council, as expressed under the theme of "Reinvesting in Our Community":

- **Parks are an essential part of our community.**
- **We should reinvest in our parks as part of the community reinvestment process.**

Reinvestment in parks should occur in the following ways:

Maintenance

Renovation and replacement

Basic park elements

Park enhancements

Natural resources and landscape maintenance

Trail system

Each of these types of reinvestment is discussed under Park Management Policies in the following section.

PARKS FRAMEWORK PLAN

The parks framework plan consists of a series of maps, policies and recommendations organized into the following topics:

Park System Organization

Natural Resources and Management Priorities in the Parks

Park-Trail Connections

Park Management Policies

Gemstones in the Park System: A Framework for Park Enhancements

Site-Specific Park Improvements

Future Parks: A Conceptual Framework

Potential New Facilities

Park System Organization

Figure 1, Park System Organization, shows the entire park system, including existing and planned parks, organized in the following categories: **community parks, neighborhood parks, mini parks and preservation areas.** Although the names for the categories are largely the same as under the previous sysem, classifications are now based on function rather than size.

The category of **community parks** has been broadened to encompass **all specialized facilities** that are intended to attract users from the City as a whole. For example, the planned "Town Square" park in the Heart of the City redevelopment area, while small in size, is intended as a place for public gatherings for the entire community. Day Park, formerly classified as a mini park, is combined with the Earley Lake Trail to create a community-level facility. Likewise, the Minnesota Riverfront Park is considered to have a broad appeal.

Neighborhood parks and **mini parks** largely retain their traditional functions: serving neighborhoods or smaller areas with active recreation facilities.

A new category, **preservation area**, applies to areas that are intended to remain as undeveloped neighborhood open space. By contrast, all neighborhood and mini parks contain, or should contain, a similar set of recreational facilities and equipment (although there will continue to be variations among parks based on neighborhood needs and natural amenities).

Community Parks

1. Alimagnet
2. Birnamwood Golf Course
3. Black Dog
4. Cam Ram
5. Civic Center
6. Cliff Fen
7. Crosstown West
8. Crystal Beach
9. Crystal Lake West
10. Day Park & The Earley Lake Trail
11. Sue Fischer Memorial Park
* 12. Heart of the City - Town Square
13. Kraemer Nature Preserve
* 14. Kraemer Quarry Park
15. Lac Lavon
16. Minnesota Riverfront
17. Neill
18. North River Hills
19. Pik Nik Island
20. Red Oak
21. Rose
22. Sunset Pond
23. Terrace Oaks West
24. Tennisioux
25. Vista View
* 26. West Riverfront
27. Wolk

Neighborhood Parks

28. Burnhaven
29. Burnsville Heights
30. Cedarbridge
31. Chateaulin
32. Colonial
33. Coventry Court
34. Crosstown East
35. Echo
36. Greenhaven
37. Highland Forest
38. Highland View
39. Hollows
40. Interlachen
41. Keller Lake
42. Knob Hill
43. Krestwood
44. Northview
45. Oak Leaf West
46. Paha Sapa
47. Parkwood
48. Skyline
49. South River Hills
50. Terrace Oaks East
51. Timberland
52. Tyacke
53. West Buck Hill
54. Wood

Mini Parks

55. Acorn
56. Arbor
*57. Heart of the City - Mini Park
58. Heritage
59. Howell
60. Leisure
61. Nicollet
62. Nordic
63. Oak Leaf East
64. Orchard Gardens
65. Rolling Meadows
66. Sunset
67. Utech Pond
68. Valley Highlands
69. Westview
70. Archery Site

Preservation Areas

71. Brookview
72. Country Club
73. Forest Heights
74. Judicial
75. Lake Park
76. Loop
77. Twin Lakes
78. Wellington Crescent
79. Woods Lane

* Planned Parks

City of Burnsville Park System Master Plan

PARK SYSTEM ORGANIZATION

Data Sources: Land use from City of Burnsville

BRW®33916. May, 2000

Natural Resources and Management Priorities in the Parks

The Natural Resources Management Plan classifies the City's natural resources into terrestrial, aquatic and wildlife resources. A database was developed to integrate and evaluate resource information. Aquatic resources include wetlands, rivers, lakes and ponds, and trout streams. Terrestrial resources include woodland, prairie and meadows. Locations of rare plant species and habitat of rare wildlife species were also included.

These natural resources were evaluated and grouped into resource management units (RMUs): defined areas with high concentrations of natural resource sites and lakes and rivers. Sites within and outside of these RMUs were then assigned priorities for management.

1. High priority sites are identified for protection and management activities, whether or not they are part of a Resource Management Unit. All lakes in RMUs are considered high priority natural resources.
2. Medium priority areas are identified for improvement when they are part of a Resource Management Unit.
3. Low priority areas are identified for maintenance, rather than active improvement efforts.

Nine RMUs were defined, including all or portions of the following parks; management goals are summarized below:

Alimagnet RMU:	Alimagnet	Maintain and improve lake, woodland and wetland communities.
Bluff Valley RMU:	Archery Site Black Dog Cedarbridge Cliff Fen Woods Lane Tennisioux	Protect and enhance forest cover for bird habitat. Woodland management, buckthorn removal, bird monitoring, prairie/oak vegetation improvement.
City Center RMU:	Civic Center Krestwood Nicollet Rolling Meadow Acres Forest Heights Parkwood Wolk	Fen monitoring and protection, manage surface water runoff; limit impervious cover in trout stream watersheds; monitor well pumping impacts on hydrology.

Crystal Keller RMU:	Crystal Lake West Crystal Beach Pik Nik Island Lac Lavon Keller Lake	Lakeshore and lake management; establish water level goals; work with neighborhood groups and adjoining cities.
Kraemer RMU:	Rudy L. Kraemer Nature Preserve Sue Fischer Memorial Park	Intensive restoration of prairies, wetland; bluff slope and woodland regeneration; parkland expansion in southwest corner.
Quarry Complex RMU:	West Riverfront and Kraemer Quarry Parks (planning stages)	Natural heritage restoration plans; integrate wetlands with uplands; protect recreational use of future quarry lake.
Southwest RMU	Cam Ram Judicial Loop Orchard Gardens	Landscape management in Cam Ram and Murphy-Hanrehan parks; buckthorn management, bird survey, rare species monitoring.
Sunset RMU:	Sunset Pond	Prairie restoration, land management to protect lake resource.
Terrace Oaks RMU:	Terrace Oaks West Terrace Oaks East Utech Pond	Ecosystem based management for high priority sites; buckthorn management, deer exclosure, wetland improvements.

Figure 2 identifies the RMUs and all high or medium priority natural resource sites that are located within the parks. Protection and improvement projects in these areas are managed by the City's Natural Resources Department, with a focus on high priority sites. Current efforts include:

- Pursuit of conservation easement in Bluff Valley RMU;
- Restoration of prairies at Sunset Pond, Alimagnet Park, Kraemer Preserve;
- Oak savannah restoration at Terrace Oaks West;
- Buckthorn removal at Kraemer Preserve and Terrace Oaks West;
- Bank stabilization at Crystal Lake;
- Wetland monitoring at high priority sites throughout City.

Community Parks

1. Alimagnet
2. Birnamwood Golf Course
3. Black Dog
4. Cam Ram
5. Civic Center
6. Cliff Fen
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* 12. Heart of the City - Town Square
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* 14. Kraemer Quarry Park
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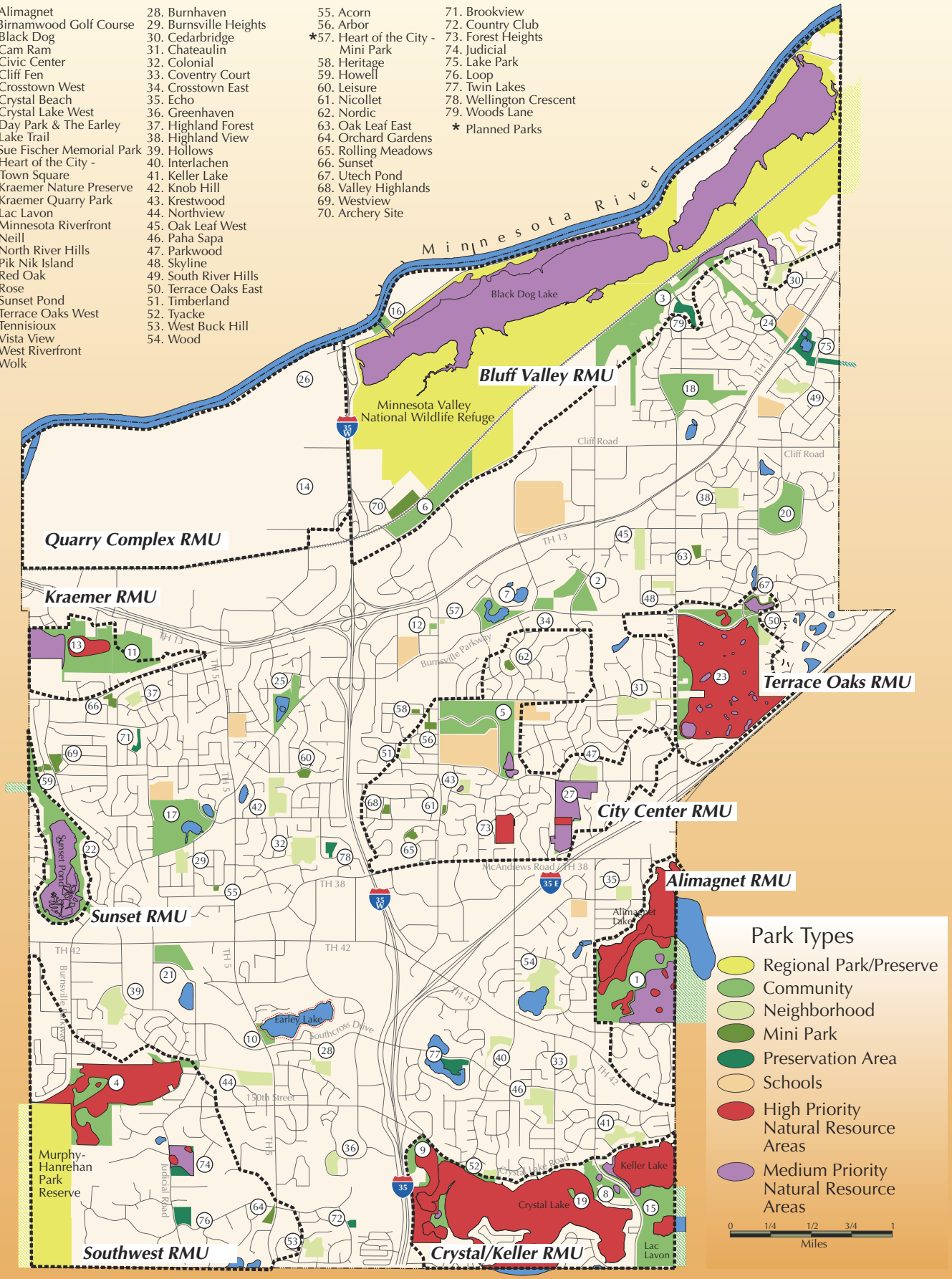
* Planned Parks



City of Burnsville Park System Master Plan

NATURAL RESOURCE AREAS IN PARKS

Data Sources: Land use from City of Burnsville

BRW®33916. May, 2000

Of course, there are many natural areas within parks that do not fall within an RMU or were not identified in the natural resources plan as significant. Management of these areas is discussed below under Policies.

Park – Trail Connections

The Trails Master Plan identifies trail systems that serve multiple user groups (walkers, bicyclists, in-line skaters, families, etc.) and needs that include commuting and recreation. Connections to parks and trails within parks are key elements of a recreational trail system. Many trail users will visit a single park as a destination or visit one or more parks as part of a longer trip by trail. Existing paved trails within parks are shown on Figure 1. The "core" trail system proposed in the Trails Master Plan is shown on Figure 3.

Park Management Policies

This section of the Parks Master Plan includes policies for management, maintenance and improvements to the park system as a whole. The policies below are organized into six topic areas:

Maintenance

Renovation and Replacement

Basic Park Elements

Park Enhancements

Natural Resources and Landscape Maintenance

Trail System

All policies fall under a broad theme: **We need to reinvest in our parks in the following ways:**

Maintenance

Citizens are pleased with the enhanced level of maintenance initiated in 1999. Continue to implement this level of maintenance for parks and boulevards. The feedback from residents indicated that this was an extremely high priority for them, probably more so than any individual park improvement or enhancement. Maintaining what we have should be a high priority.

- Improve maintenance of natural areas that are visible from adjoining active use areas by removing dead trees and debris as appropriate. (See below under Natural Resources and Landscape Maintenance for more detail on establishing a vision for natural areas and adjusting maintenance practices.)

- Address dog problems by continuing to expand public education and enforcement efforts and through creation of dog exercise areas in selected park(s).

Renovation and Replacement

- Move toward a 10-year replacement cycle for play equipment;
- Identify facilities that need complete renovation or replacement (see Improvements to Existing Parks);
- Review renovation needs on a five-year basis.

Basic Park Elements

Where practical and justified by level of use, all parks in active use should include the following elements, if these are consistent with the wishes of surrounding neighborhoods:

- Security lighting in parking areas and, where needed, on trails;
- Drinking fountains;
- Basic amenities such as portable toilets, seating, bike racks and picnic tables;
- Visible and safe pedestrian access via public streets or well-marked trails;
- Internal trails between activity areas;
- Overstory trees to provide shade.

Park Enhancements

Gemstone Parks: Make strategic investments in the appearance of key parks: along roads receiving streetscape improvements, other main roads, and in heavily-used parks (see Gemstone Parks discussion below).

General Park Enhancements

- Replace play equipment with an eye toward aesthetics as well as function;
- Identify a site for development of a lighted soccer facility with amenities;
- Identify sites suitable for new facilities such as community gardens and dog exercise areas (see discussion below under New Facilities).

Special Requests for Enhancements: Occasionally, residents request facilities in their neighborhood parks that go beyond basic neighborhood park amenities and which are not needed system-wide. The primary example is a tennis court. Based upon usage, there appears to be a sufficient number of tennis courts in the park system. Tennis courts are community facilities in the sense that users may be expected to travel a distance to access them. In such cases, the City will work with residents in partnership to raise funds for this type of facility.

Community Parks

1. Alimagnet
2. Amphitheater Park
3. Birnamwood Golf Course
4. Black Dog
5. Cam Ram
6. Civic Center
7. Cliff Fen
8. Crosstown West
9. Crystal Beach
10. Crystal Lake West
11. Day Park & The Earley Lake Trail
* 12. Sue Fischer Memorial Park
13. Rudy Kraemer Nature Preserve
* 14. Kraemer Quarry Park
15. Lac Lavon
16. Minnesota Riverfront
17. Neill
18. Nicollet Commons
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* Planned Parks

City of Burnsville Park System Master Plan

PARK AND TRAIL SYSTEM PLAN

Data Sources: Land use from City of Burnsville

BRW®33916. Sept, 2000

Natural Resources and Landscape Maintenance

Establish natural area management plans for open spaces within individual parks. There are natural areas in many City parks that are not sufficient in size or quality to be addressed in the Natural Resources Master Plan. A simple plan for each of these natural areas should be developed that identifies the long term vision for the natural area. Maintenance practices should then be established to help the area evolve in that manner. One option would be to allow the area to turn into a wooded area through natural progression, in which case no extraordinary maintenance would be required. Another option would be to assist this process by planting desirable overstory trees rather than letting the volunteer trees (e.g. cottonwoods, box elders, silver maples) become the dominant species. If the desire is to have an area remain a meadow, then the area should be mowed occasionally, volunteer trees removed and possibly planted with prairie plants. In all of these cases, it would be appropriate to meet with area residents to help determine the desired vision for the area and solicit their help with planting and maintaining the trees or native prairie plants. Other natural area improvements might include:

- Maintaining or improving views to ponds and vistas;
- Establishing criteria for conversion of mowed turf to natural areas (i.e., meadows, prairie, wetland);
- Managing pond and wetland edges with native buffer vegetation;
- Managing exotic and invasive species; providing weed control in natural areas;
- Use of native plants to improve park appearance and enhance individual park character.

Other natural resource management policies include:

- Coordinating park improvements with the Stormwater Management Plan – i.e., identify areas within parks that may be used for stormwater management;
- Coordinating park improvements with the priorities and projects of the Natural Resources Management Plan;
- Conduct environmental education and demonstration projects within parks.

Trail System

- Provide safe pedestrian access to all parks via local streets or hard surface trails;
- Connect external community trails to internal trails in parks;
- External community trails should be hard surface and separated from roadways, to serve multiple uses;

- Community trails should connect all neighborhoods, employment centers and destinations;
- Maintain trail system with sweeping, snow plowing and surface care.

Gemstones in the Park System: A Framework for Park Enhancements

While all active-use parks (in contrast to preservation areas) are likely to have a similar set of facilities, a key element of this plan is enhancement of selected parks. The "Gemstone Concept" would provide **focused revitalization** of a small number of highly visible and important parks.

A Gemstone is a special park or part of a park in which the City has invested extra resources to make it a special place. Gemstones will be highly visible, attractive places with an appealing ambiance created by amenities such as fountains, lighting, landscaping, decorative tables, benches and public art as well as activities to encourage people to gather and enjoy their leisure time. These Gemstones will demonstrate in a concrete and visible way the City's commitment to reinvesting in itself, and will support Burnsville's reputation as a "preferred community" in which to live.

Gemstone Parks can contribute to the attractiveness of the community. They can enhance the quality of neighborhoods while playing a significant revitalization role in the redevelopment of older residential areas. They can also help create a special "feel" in targeted development areas such as the Heart of the City.

The City already has some unique natural parks in its system such as Terrace Oaks West, Sunset Pond, Cam Ram and Crystal Lake West. It also has some special active use parks such as Lac Lavon, North River Hills and Alimagnet. Gemstones will, however, be different. They will be oriented toward walking, gathering and quiet contemplation of broad vistas or intimate views of nature. They will add a new and important dimension to the City's park system, a dimension essential to meeting the needs of our changing population.

A park could be selected as a Gemstones based on criteria such as:

- Visiblity and accessibility from a major community roadway such as Nicollet Avenue, Burnsville Parkway, Southcross Drive or County Road 11;
- Meeting an important recreational or leisure need of the community;
- Having the natural character that can be enhanced to provide a special leisure experience;
- Having or providing space for recreational facilities that meet the need for a place to be alone, to gather with friends or family, or play together;

- Being distributed broadly throughout the City.

Some amenities which could be used to create Gemstones include:

- Spray fountains in ponds;
- Formal fountains for visual appeal;
- Interactive water amenities such as play equipment or dancing water;
- Decorative lighting, outdoor furniture and landscaping, potentially utilizing the themes established in the Streetscapes and the Heart of the City;
- Special seating and gathering places for individuals and small groups;
- Public art;
- Special plantings to enhance the existing natural vegetation.

Since the city has already begun substantial reinvestments in the Nicollet Avenue and Burnsville Parkway streetscapes, and will be facilitating redevelopment of the Heart of the City area, this area is a logical place to begin investing in Gemstone Parks. Improvements to Crosstown West Park, for instance, would extend the Heart of the City reinvestment into an adjacent neighborhood and provide an important amenity for residents of nearby high density housing.

Seven parks are currently proposed as Gemstones:

Crosstown West Park: A Quiet Place to Stroll and Sit by the Water

Neill Park: A Place for Water Play

Day Park and the Earley Lake Trail: Another Great Place to Walk Around a Lake

Vista View Park: A Place to Gather

Terrace Oaks Park: A Minnesota Valley Overlook

North River Hills Park: An Enhanced Play Environment

Civic Center Park: A Lighted Park for Evening Use

The improvements proposed for these parks are discussed below under Site-Specific Park Improvements.

Site-Specific Park Improvements

This section identifies parks that are recommended for major improvements, beginning with the proposed new Gemstone Parks, and including community, neighborhood and mini parks. The functions of the various preservation areas are also discussed.

Crosstown West Park – A Quiet Place to Stroll and Sit by the Water: Crosstown West Park is located on the north side of the Burnsville Parkway just one block east of the Heart of the City; it is thus very visible and within easy walking distance from the HOC. It would be a perfect place to eat lunch on a nice summer day, especially for those who live, work or shop in the HOC. The park surrounds a pond, and a small peninsula juts into the pond with a hill covered in oak trees. It is rather picturesque and has the potential to be much more so. There is currently a trail loop around the pond, a medium size picnic shelter and play equipment. Selective clearing along trails will increase the sense of openness and security. The park could become a special place to walk, sit and gather during the daylight hours and in the evening. The following actions would achieve this goal:

- Provide trail lighting compatible with the nearby streetscape lighting;
- Provide a boardwalk across a narrow area in the pond over to the natural peninsula;
- Build a large deck with a partial roof over the water at the point of the peninsula, using the oak tree-covered hill as a visual backdrop;
- Provide seating and gathering areas along the trail and on the deck;
- Provide lighting on the deck and boardwalk;
- Provide hanging baskets similar to the streetscape baskets on the deck and irrigate them with water from the pond;
- Provide a couple of lighted spray fountains in the lake,
- Provide a place for public art;
- Prune back the vegetation along the trails and around the picnic shelter and play equipment to provide a more open feel and sense of security for park users;
- Encourage a partnership with the neighboring seniors complex(es) to introduce woodland wildflowers into the park;
- Construct a narrow, natural (soft surface) trail on the peninsula that does not interfere with its natural charm;
- Remove invasive species and deadfall in the wooded area and reforest with appropriate overstory trees, understory trees and shrubs;.
- Clear and maintain overlooks to the pond from the Parkway and Eagle Ridge Drive;
- Replace the play equipment with equipment designed for grandparent and young grandchild;
- Install smaller, permanent picnic and game tables in the existing shelter;

Crosstown West Park *Proposed "Gemstone" Improvements*

Vista View Park *Proposed "Gemstone" Improvements*

- Connect this park with the Heart of the City and the small HOC neighborhood park on the east side of Nicollet Avenue by means of a special trail, signage, hanging baskets, and other visually similar amenities.

Neill Park – A Place for Water Play: Neill Park is a large community park located on the south side of the Burnsville Parkway a few blocks west of County Road 5. There is an open, undeveloped area in the very southeast corner of the park, which is at a curve in the Parkway, and at a slightly higher elevation. This would an ideal place to locate wet playground equipment with supporting amenities such as restrooms, gazebo, concrete patio with picnic tables and benches, lighted trail system around the pond, and parking lot. Water from the wet play equipment could flow into the lake by means of an artificial stream, which could go under a small bridge serving the trail. The site could also include a fountain of some type, which might be combined with the wet play equipment. The wet play equipment and fountain could be placed to be very visible from the Burnsville Parkway, to provide the desirable Gemstone visual impact and attract users to the site. The whole area could be designed to serve families with young children. We could achieve this by doing the following:

- Provide wet playground equipment;
- Provide a gazebo with restrooms;
- Provide a large concrete patio and picnic area;
- Include an interactive fountain or dancing water;
- Incorporate art into the water elements of the park;
- Provide a looped trail around the lake with decorative lighting compatible with the parkway streetscape;
- Provide decorative tables and benches compatible with the parkway streetscape;
- Remove invasive species and deadfall and reforest the woods which serve as a backdrop to the water play area and the looped trail around the pond.

Day Park and the Earley Lake Trail – Another Great Place To Walk Around A Lake: The park system already has a Gemstone in Sunset Pond Park, which is a place to take a walk around a lake in a naturally beautiful setting with prairie plants and waterfowl. This is already a heavily used and highly appreciated Gemstone. We have the opportunity to create another one – Day Park and the Earley Lake Trail. The City is currently working on completion of the trail around Earley Lake, which includes a boardwalk across a small bay. This trail is currently supported by a picnic shelter, play equipment and small parking lot. This park and trail could be enhanced further to provide the Gemstone experience, and thereby provide a great place for a stroll in a natural and scenic setting. We could achieve this by doing the following:

- Establish a native prairie under and around the oak trees in Day Park immediately adjacent to the corner of Southcross Drive and County Road 5, thereby reestablishing an oak savanna in an extremely visible location with Earley Lake as the backdrop;
- Provide a special park sign right at the corner, possibly with running water as a highlight;
- Provide interpretive signing regarding the community's original oak savanna character;
- Enhance the new stormwater pond that will be constructed in the new development on the east end of the lake, so that its outflow into the lake is a stream, potentially including a cascade or small waterfall down the embankment;
- Provide an auxiliary pump to keep water flowing during the warm season, which would both improve the water quality in the lake and enhance the stream aesthetically;
- Provide an additional boardwalk on the west end of the lake to keep the trail closer to the lake rather than to County Road 5;
- Provide deck(s) on or overhanging the lake at appropriate places around the lake;
- Work with the neighbors to introduce wetland flowering plants along the lake edge and woodland wildflowers next to the trail;
- Provide interpretive signing describing the specific plants being established;
- Work with the neighborhood to enhance the landscaping along the trail;
- Provide decorate tables and benches in character with the natural setting of the park;
- Provide small and personal seating areas or overlooks to stop and enjoy the setting.

Vista View Park – A Place To Gather: Vista View Park is located on the north side of the Burnsville Parkway a few blocks west of I-35W, and just a short distance beyond the current end of the parkway streetscape. It contains a pond with an island in the middle and numerous trees, giving it a natural feel. It also has a trail loop around the pond, a recreation building with restrooms and an attached picnic shelter, a large play equipment area, two youth ballfields, basketball court and hockey rink. It also has a special pleasure rink with its own landscaped "island" in the middle with special lighting and a sound system. With the addition of a few facilities, the park would provide an excellent place for adults, families and multi-generational groups to gather or to meet. It would be an ideal place to hold a family reunion, a graduation party, an informal wedding or an end-of-season picnic. With the addition of some visual amenities it

could become an extension of the Burnsville Parkway and Nicollet Avenue streetscapes and the Heart of the City. Given that the park is in the Weed & Seed (crime prevention) area, it could provide a huge, visible symbol of reinvestment in an older part of our community. The following actions would achieve this goal:

- Provide decorative lighting compatible with the streetscapes/HOC;
- Provide decorative tables and benches compatible with streetscapes/HOC;
- Provide a seating area and bonfire circle adjacent to the picnic shelter;
- Upgrade the play equipment;
- Provide a spray fountain in the pond;
- Add recreational amenities for group activities: e.g., volleyball court, horseshoe court;
- Provide additional landscape screening from adjacent homes;
- Provide lights for the basketball court.

Terrace Oaks West Park – A Minnesota Valley Overlook: The northwest corner of Terrace Oaks West Park is one of the highest spots in Burnsville. It provides an excellent overlook over a large portion of Burnsville, the Minnesota River Valley, and Minneapolis, and would be a great place to watch a sunset. There is currently no way to reach this spot without bushwhacking through the underbrush. This portion of the park is being restored as an oak savanna and a native prairie. The City could provide an overlook via an ag-lime (gravel) trail through these restored natural areas. A seating area would allow one to enjoy the view in comfort. The ag-lime trail would also provide handicap accessibility to the park. The following improvements would be needed:

- Construct an overlook structure and seating area compatible with the natural character of the park. Locate the overlook to be visible from below (County Road 11 and Burnsville Parkway) to draw people to it.
- Construct an ag-lime trail from the chalet near the Terrace Oaks West parking lot to the overlook. This would also provide improved access for controlled burns.
- Provide interpretive signing regarding the history and geology of the Minnesota River Valley, of the park itself, of oak savannas and native prairies.

North River Hills Park – An Enhanced Play Environment: Neill Park has been proposed as a Gemstone site for wet play equipment. Based on the use that facility receives, North River Hills Park should be considered for such an amenity in the future. A natural area in the southwest corner of the park and a mowed area along River Hills Drive could both be nicely landscaped using a combination of native plant materials, specimen trees and landscaping beds. This would enhance the appearance of the park and provide an excellent backdrop for the wet play equipment. A gazebo and seating

areas could be blended into the landscaping. Additional water features such as fountains, small ponds and a small artificial stream could further enhance the area's appearance. Additional trail connections to the east and north would make the water play equipment and landscaping area accessible by trail to a large number of residents. The following improvements would be needed:

- Provide wet playground equipment;
- Reshape and landscape the west part of the park along River Hills Drive;
- Provide a gazebo and seating areas;
- Include water features as part of the landscaping;
- Provide additional trails in the park.

Civic Center Park – A Lighted Park For Evening Use: Civic Center Park has many public facilities, many of which are used predominantly in the late afternoon and evenings: the Garage, the Ice Center, the community rooms in City Hall, and the Council Chambers. Civic Center Park could be enhanced as a place to go in the evenings by providing lighted trails and activities, using the lighting style of the Nicollet Streetscape. This theme could be supported by providing places for people to gather along the trails and additional youth-oriented, outdoor recreation activities. We could achieve this by doing the following:

- Provide lighted, hard surface trails in the wooded area in the northeast and east parts of the park; these could also be used for cross-country skiing in winter;
- Provide a lighted spray fountain in the pond immediately south of the City Hall;
- Provide lighted basketball courts for use by "The Garage" youth center and the community in general;
- Provide improved lighting and evening sitting areas in the Bicentennial Garden, and some sites for public art;
- Provide lighted trails up to and including Nicollet Junior High, Sky Oaks Elementary and Gideon Pond Elementary;
- Evaluate the concept of providing a lighted athletic field at Nicollet Junior High for informal use by youth;
- Provide decorative tables and benches compatible with the themes established in the streetscapes/HOC.

If the City were to make the trail lighting improvements in Crosstown West, Vista View and Civic Center Parks, the community would have a system of lighted trails for evening walking to the east, west and south of the Heart of the City. This trail network would build upon and support the Heart of the City as a place for a pleasant

stroll in the evening, for a cup of special coffee or an ice cream cone. All are close enough to the HOC to make them a practical walking destination. They each could become a visual beginning of the HOC as one enters it from Nicollet Avenue and Burnsville Parkway.

Community Parks

Only the parks listed below are scheduled for improvements or have major issues that should be addressed. Parks not listed here will retain their current facilities and receive ongoing maintenance. Natural area management plans will be developed for all parks that have significant natural areas. Parks may also be considered for additional improvements based on community interest (see "Special Requests for Enhancements" under Policies, page 24).

Alimagnet Park: This is a large community park which connects with the City of Apple Valley's Alimagnet Park. No major changes are envisioned for this park. Park needs include:

- Hard surface trail from County Road 11 into the park.
- Renovate and upgrade baseball fields. The City is currently exploring a partnership with the local young adult baseball association to enhance the park's baseball facilities, including improved lighting on Field #1, a concession stand and restroom, protective netting above the backstops, nine inning scoreboards and irrigation.
- Develop a dog exercise area immediately east across parking lot from four existing softball fields.
- Provide lakeshore access via a wood chip trail or other means.

Birnamwood Golf Course: This facility is managed by Burnsville's Recreation Department. No major changes in design or amenities are planned.

Blackdog Park: A hard surface trail is planned, starting at River Hills Drive near Sioux Trail Elementary, continuing through Tennisioux Park and Blackdog Park and ending at 12th Avenue. The City will be enhancing the existing football field in 2001, to include regrading the field, irrigation, improved lighting and bleachers.

Cam Ram Park: This is a large natural park with only the northwest corner developed for active use. The vision for the park includes a trail link between the active use area in the northwest corner to Northview Park to the east.

Civic Center Park: See above under Gemstone Parks.

Cliff Fen Park: This park is a destination because of the Skyland playground; it also offers trail connections to the Minnesota Valley National Wildlife Refuge. No major changes are envisioned. Planned improvements include hard-surfacing of the parking lot expansion area and addition of a third picnic shelter.

Crosstown West Park: See above under Gemstone Parks.

Crystal Beach: The park includes the City's only guarded public beach. No major changes are envisioned in this park; the park building will be renovated in 2000-2001.

Crystal West Park: A hard surface trail is planned between the boat launch area and the fishing dock located below Tyacke Park.

Day Park: See above under Gemstone Parks.

Sue Fischer Memorial Park: Currently under development; future improvements will include maintenance building, concession stand with restrooms and scoreboards. This park is connected to the Rudy L. Kraemer Nature Preserve by the trail system.

Rudy L. Kraemer Nature Preserve: This park is guided by a 1996 Master Plan and is managed by the City's Natural Resources Department. It is currently connected to Sue Fischer Memorial Park by adjoining trail systems. The plan is to connect both parks to the neighborhood to the north by trail connections through the Nature Preserve.

Minnesota Riverfront Park: This is a small piece of land leased from NSP for park purposed. Improvements will include a hard surface parking lot. This should be done in conjunction with improvements to Blackdog Road. Landscape improvements should be made to this park to improve its appearance, and an internal trail to the bluff top along the river should be developed. A riverfront trail linking this park and the planned West Riverfront Park should also be considered as that park is developed.

Neill Park: In addition to the Gemstone Park concept discussed above, major renovations of the adult softball fields are needed.

North River Hills Park: See above under Gemstone Parks.

Pik Nik Island: No major changes are envisioned. A permanent picnic table on slab should be provided.

Rose Park: This is leased land. Once the lease is up in another 15 years (or earlier if the landowner chooses to terminate the lease) the City will need to decide if these fields are needed on a permanent basis. If so, the City will need to find funds to purchase the land.

Sunset Pond: The internal loop trail system should be extended to the north beyond the dam to connect with the Savage trail system. There is an off-street parking shortage, however there appears to be sufficient on-street parking on Preserve Boulevard. The City will evaluate whether the present parking situation is acceptable.

Terrace Oaks West Park: The vision for the park is already well-established through the Terrace Oaks Master Plan; current projects include oak savanna and prairie restoration. See the proposed overlook and trail improvements above under Gemstone Parks. Stormwater from outside of the park is currently being directed into the park from the

south. In wet years this has flooded a low area, killing some trees and making certain trail sections inaccessible. The City is preparing a Stormwater Management Plan that will identify solutions to this problem. At minimum some of the stormwater will be redirected to a storage area outside of Terrace Oaks Park. When this area dries up sufficiently, the City should touch up the area, remove dead trees and vegetation debris as appropriate and replant with appropriate native vegetation.

Tennisioux Park: A hard surface trail is planned through Tennisioux Park to Blackdog Park (see above under Blackdog Park).

Vista View Park: See above under Gemstone Parks.

Wolk Park: No major changes are envisioned. A proposal to construct a hard surface and/or natural trail system in the natural part of the park has been dropped due to neighborhood opposition.

Neighborhood Parks

Changes are not anticipated for the majority of neighborhood parks. Only the parks listed below are scheduled for improvements or have issues that should be addressed.

Cedarbridge Park: Some hard surface trail/sidewalk improvements should be made on the street side of the park, connecting to the play equipment and basketball court.

Chateaulin Park: The southwest corner of the park (on top of the hill) needs to be cleaned up, final graded, and landscaped. A picnic shelter could potentially be added in this area. This concept should be discussed with the adjacent neighborhood.

Hollows Park: Residents have requested a tennis court in this park. Although there appear to be sufficient tennis courts in the park system to meet the community's needs, this park is located in far western Burnsville and area residents do not have good access to an existing tennis court. In addition, there are a large number of businesses in the area, whose employees would benefit from access to a tennis court. Based on these factors, a tennis court should be provided in this park.

Keller Lake Park: Add swings to play equipment.

Krestwood Park: Ballfield and turf need renovation, and encroaching woods should be pushed back.

Northview Park: A hard surface trail connection to Cam Ram Park is planned.

Skyline Park: Residents have requested a trail through the park connecting the entrance drive to Chippewa Lane (the street on the other side of the park).

South River Hills Park: The natural area needs to be upgraded and its appearance improved.

Timberland Park: A hard surface parking lot should be developed.

Tyacke Park: Security lighting along trail through the park has been requested.

West Buck Hill Park: A tennis court has been requested. Although there appear to be sufficient tennis courts in the park system to meet the community's needs, this park is located in far south Burnsville and area residents do not have good access to an existing tennis court. Based on this, a tennis court should be provided in this park.

Wood Park: A picnic shelter should be added on the lake side of the play equipment. Residents have requested parking lot and trail lights. Neighborhood input should be sought before proceeding with the trail lighting in particular, as there has not been sufficient opportunity to discuss this potentially controversial amenity.

Mini Parks

As with neighborhood parks, few changes are anticipated for the majority of mini parks. Only the parks listed below are scheduled for improvements or have issues that should be addressed.

Rolling Meadows Park: Residents have requested addition of a half court basketball area, if space permits. This request should be evaluated, along with the potential for adding swings and play equipment.

Sunset Park: Need to establish vision and plan for the park. Is a trail through the park appropriate?

Westview Park: Evaluate potential for trail through the park, although the hill may be too steep.

Archery Park: Evaluate as potential community garden site.

Preservation Areas

Brookview Park: Cannot be developed due to topography. No development anticipated.

Country Club Park: Cannot be developed due to topography. No development anticipated.

Forest Heights Park: The park's value is primarily as open space. The only facility that could potentially be developed in this park without destroying its natural resources value would be a wood chip trail system. An informal trail system already exists, and is probably all that is justified considering the park's location and lack of good access and parking. There are no plans to develop this park.

Judicial Park: Cannot be developed for active use due to topography. The park's value is primarily as open space. The only facilities that could potentially be developed in

this park without destroying its natural resources value would be a wood chip trail system and very small parking lot. An informal trail system already exists, and is probably all that is justified considering the park's location. There are no plans to develop this park.

Lake Park: Due to topography, powerlines and the proximity of backyards adjacent to steep hill next to ponds, it is impractical to develop the west portion of the park. The east portion is flat and is mowed and currently used for football practices. There is an existing half-size basketball court that could be upgraded and expanded if desired. There are no plans for further development of this park.

Loop Park: Residents have opposed active use facilities being developed in this park. If residents wish to have it developed in the future this designation could be changed. As the years go by and the volunteer trees mature, the environmental cost of developing active uses will increase.

Twin Lakes Park: Residents have opposed active use facilities being developed in this park. If residents wish to have it developed in the future this designation could be changed.

Wellington Crescent Park: This park has very poor access from the street and is in reality just a backyard natural area for the surrounding homes. No development is anticipated.

Woods Lane Park: Cannot be developed due to topography. No development is anticipated.

Future Parks: A Conceptual Framework

The following parks are envisioned as being developed within the time period covered by this plan – roughly through 2020. Some parks are likely to be developed within the next decade (i.e., the Heart of the City parks). Others, such as the Kraemer Quarry park, may not be developed for many years. The purpose of this plan is to establish a conceptual framework for these parks that specifies their function within the community, environmental considerations that should be addressed, and the recreational facilities that they may contain. Obviously, more detailed site planning will be needed as these parks are developed. The park names given below are provisional, and will be changed in most cases as park plans evolve.

West Riverfront Park: Several studies have explored the use of a large riverfront parcel (the McGowan property) in the City's northwest quadrant that has most recently been used for a landfill. A 1992 PUD application included plans for an amphitheater, marina, riverfront park and trash transfer station. A recent proposal for an amphitheater is currently under consideration. The City has a permanent use easement on approximately 5 acres along the northern edge of the property. The eastern portion of

the property extends to the Minnesota River, but the western portion does not.

More detailed site analysis will be conducted as the plans for the site progress. Amenities for this park should include a trail along the river, picnic tables and potentially picnic shelters along the river. Other possible facilities might include play equipment and a turf area for informal play. Constraints include the frequent flooding of the riverbank area.

If the adjacent U.S. Salt business ever becomes available for purchase, the City may consider buying that land to add to the park site (although the city has no intention of buying out the business or condemning the land).

Heart of the City "Town Square" Park: A principle of the Heart of the City Design Framework Plan is to "provide parks and plazas for a variety of uses and community gatherings." The town square park, called "Nicollet Commons," is intended to be bounded on three sides by a concentration of three-story, mixed-use and institutional buildings, with Nicollet Avenue on the eastern edge. "This central gathering space will become the focus of civic and cultural activities, providing an area for programmed events such as a farmers' market, art fairs, sidewalk sales and concerts, as well as passive recreation space." This park will consist primarily of lawn areas divided by paved paths, with a central paved plaza, plentiful shade trees, pedestrian-scale lighting, ornamental flowerbeds, seating areas, and probably a water feature such as a fountain and other public art. There may also be a bandshell or gazebo for concerts. It may be desirable to include an active play area with play equipment or an interactive sculpture.

Heart of the City Mini Park: This park, on the east side of Nicollet Avenue, is intended primarily as a "pocket park" – a small landscaped area with shade trees and terraced seating – that will serve surrounding housing, to be developed by the Dakota County HRA. The actual facilities in the park will largely depend on the type of housing to be developed adjacent to it (i.e., senior housing, townhouses, housing for families). The plans for both Heart of the City parks will take shape as detailed site and landcape designs are developed, beginning in summer of 2000.

Kraemer Quarry Park: This park will be part of the redevelopment of the Edward Kraemer & Sons (EKS) mining operation and former landfill site. An Implementation Scoping Study was prepared in 1998 for the entire Gateway Area, and was extended to cover the 767-acre EKS property, which is also covered by an approved Planned Unit Development (PUD) plan. The long term end use plan calls for the property to be used for various purposes, including office and industrial redevelopment, wetland restoration, stormwater management, and open space and recreation. The PUD plan for the EKS property is reviewed every five years and will be updated periodically as nearby properties redevelop.

The future park is envisioned to include a lakefront swimming beach and boat launch and a trailhead for a lakefront trail. The lake that will be created when the quarry is closed will need to be configured to provide shallow water for aquatic recreation and natural habitat for wildlife.

Potential New Facilities

One of the major issues that confronts every city parks department is how to accommodate new recreational activities within its existing (or new) parks. Burnsville has already responded to these issues, by developing mountain bike trails, in-line skating rinks, and a new youth center at Civic Center Park. Two activities that are currently under consideration are off-leash dog exercise areas and community gardens. Each activity has certain criteria that should be met in selecting appropriate sites.

Dog exercise areas are becoming increasingly popular with urban and suburban residents who want to provide exercise for their pets in a natural setting. These sites should meet the following criteria:

- Adequate size to accommodate heavy use without damage to natural resources – probably a minimum of three to five acres;.
- Preferably, some diversity of terrain and habitat. A site that includes some wooded areas would be preferable to one that is entirely open field..
- Adequate parking for users – not a problem in most parks, except at busy athletic field areas during peak hours.
- Access from an arterial or collector street, rather than a local residential street.
- Sufficient buffering from neighboring residential areas. Ideally, the site should be wooded or separated by vegetation and by a distance of at least 100 feet from adjacent properties. The site should also be fenced.

Based on these criteria, it is likely that most dog exercise areas would be located in community parks. One such area is currently proposed in Alimagnet Park. The City will monitor and evaluate the use of the area, in order to determine if additional areas should be developed.

Community gardens can increase neighborhood cohesion and sense of community, beautify vacant or under-utilized land, and provide outdoor recreation for residents of multi-family apartments or other higher-density housing. Gardens can also serve a variety of special populations: seniors, youth, people with disabilities, etc. Well-established in many cities, community gardening is now becoming popular in suburban locations. It has been identified at neighborhood and community meetings as a need that should be addressed within the park system.

The Parks Department will work with groups that wish to start community gardens to make sites available at appropriate locations. There may also be city-owned sites outside the parks that are suitable. Criteria for selecting garden sites include:

- Availability of public water (hydrant converters can be used, although a spigot would be preferable);
- Adequate sunlight;
- Relatively level topography;
- Suitable soils (avoid poorly drained soils or soils with the possibility of contamination);
- Proximity and accessibility from a public street, since many gardeners will bring tools and supplies by car. Availability of parking (5 to 10 spaces should be adequate).
- Sufficient buffering from neighborhood residential areas. The location should be acceptable to any adjacent neighborhood(s).
- Compatibility with other park activities.

For their part, garden groups should be willing to maintain their sites neatly, to ensure that all plots are cleaned at the end of the season, and to plant ornamental flower beds or shrubs around the visible perimeter, in order to make the site aesthetically pleasing to neighbors and passers-by.

IMPLEMENTATION PLAN

This section discusses funding sources, cost estimates and general phasing for the projects proposed in this plan.

Parks Funding

Funding for park improvements, renovation and development comes from a variety of sources, some already determined as part of the City budgeting process and some (such as grants) to be determined.

Renovation Funding: The City of Burnsville allocates funds on an annual basis in the City's Capital Improvements Program for park renovation. In 2000, this amount was $410,000. It will go up by $10,000 a year until 2003 at which time it increase by $15,000 a year. These funds are for the replacement and renovation of existing facilities and amenities such as bituminous surfaces, fencing, athletic field and area lighting, play equipment, amenities and buildings. These funds are not used for improvements to parks or the addition of new facilities.

Development and Improvement Funding: Funding for improvement and development of parks and facilities is addressed as part of the annual budgeting process. Project requests are included in the City's Capital Improvements Program, and are evaluated on a project-by-project basis. This would be the primary funding source for the projects listed in this section.

The funding for both park renovation and for park improvement and development is drawn primarily from ad valorem (property) taxes. The City does receive some park dedication money each year. It is expected that this will taper off to virtually zero as the City becomes fully developed. This is the source of the $25,000 a year general park improvement funding from 2002 to 2004. The funds projected for 2000 and 2001 are already committed to the youth ballfield complex in Sue Fischer Memorial Park.

A sum of $20,660 a year in ad valorem taxes is also being allocated to pay land acquisition costs for Sue Fischer Memorial Park each year from 2000 to 2004.

The City will try to identify and utilize other funding sources to minimize the impact on property taxes.

Certain projects are a combination of park renovation and park improvement. Two examples are the football facility improvements in Blackdog Park (scheduled in 2001) and the baseball improvements in Alimagnet Park (presently being evaluated). The portion of these projects that are replacement of existing facilities, such as athletic field lighting and fencing will be taken out of the annual allocation for park renovation. The funds for improvements, such as irrigation, parking lot addition, concession stand/rest-

room building, will need to be placed in the Capital Improvements Program on a project by project basis.

Currently the City's Capital Improvements Program contains funds for the following development and improvement projects:

2000	- Cam Ram - Northview Park Trail Connection*	- $ 58,000
	- Blackdog - Tennisoux Park Trail Connection*	- $ 69,000
	- Early Lake Trail - East End	- $ 65,000
	- Fencing and Backstops for Sue Fischer Memorial Park	- $150,000
2001	- Blackdog Park Football Field	- $ 80,000
2002	- General Park Improvements (no project designated)	- $ 25,000
2003	- General Park Improvements (no project designated)	- $ 25,000
2004	- General Park Improvements (no project designated)	- $ 25,000

* *These improvements scheduled for 2000 were identified in an earlier Parks Master Plan revision. They will not be implemented in 2000, but instead will be re-prioritized along with the new projects identified in this plan.*

Cost Estimates and Phasing

The table on the following pages lists preliminary cost estimates for the proposed improvements in each of the City's parks. Unit costs (i.e., linear foot of trail; costs per light fixture) are multiplied by the estimated total distance, area or number of items. Other costs are listed on a lump-sum basis.

Gemstone Park improvements are listed in priority order; other park improvements are listed alphabetically.

The second table, "Phasing of General Park Improvements," is a preliminary phasing plan that divides the major park improvement projects *not* listed in the Capital Improvements Program (or re-prioritized as part of this plan) into short-term, medium-term and future long-term projects.

Appendix: Summaries of Public Meetings on the Parks Master Plan

A series of neighborhood meetings were held in the spring and summer of 1999 to discuss park use and park facilities in neighborhood parks. A survey was also distributed with meeting notices and the results were summarized. The Parks and Natural Resources Commission held two community meetings in October and November of 1999. At both meetings, the consultants presented a summary of demographic trends and their assessment of issues and conditions in the park system. Attendees then divided into small groups for a "brainstorming session" to discuss issues relating to the system in general and to individual parks. Comments from these meetings are summarized below. All comments have been evaluated and incorporated into the Parks Master Plan as appropriate.

Summary of General Themes Raised at Neighborhood Park Meetings

- Provide security lighting in parks: in parking lots, along trails, around play equipment.
- Improve forestry maintenance in natural areas:

  - Remove dead trees;

  - Reforest areas which lose many trees due to storms (north end of Knob Hill);

  - Remove cottonwood trees and willow trees around ponds and lakes which block views and make the area look unkempt (Paha Sapa, Crosstown West, Vista View);

  - Remove trees and undergrowth that enclose play equipment areas and make them feel unsafe (Knob Hill, Crosstown West).
- Provide drinking water at parks.
- Provide foul line and three-point line markings on basketball courts.
- Provide practice boards at tennis courts.
- Provide swings in all play equipment areas.
- Replace elements in the park system as needed: e.g., play equipment, basketball backboards, etc.
- Provide benches near basketball courts.
- Provide grills with picnic tables in appropriate areas.
- Provide bollards to prevent vehicle access to internal trails in parks, e.g., Knob Hill and Keller Lake.

- Provide more small picnic shelters in neighborhood parks: e.g., West Buck Hill, Hollows.
- Owners not picking up after their dogs (brought up numerous times). This is a City-wide issue of major significance to residents.
- Provide internal access trails in parks; e.g., Alimagnet, South River Hills.
- Provide wildflowers in natural areas and more landscaping at park entrances and key points within parks, i.e., around park entrance signs.

Summary of October 5th Community Meeting

Strengths of the Burnsville Park System

- The high ratio of parkland to people;
- Diversity of park facilities;
- Physical distribution, accessibility;
- Well-maintained;
- Heavily used;
- Ample number of fields; accommodates youth sports needs well;
- Variety of natural areas, varied terrain and topography;
- Presence of water bodies – ponds, lakes, etc.

Opportunities for Improvement

- Landscaping of trails and paths;
- More multi-use fields, fields of different sizes;
- Enhanced pavement treatments;
- More winter use opportunities – cross-country trail links between parks;
- Better "wayfinding" – direction signs to parks;
- Security, vandalism – better lighting of parking lots, certain trails;
- Lack of vistas over the Minnesota River valley;
- Dominance of mowed turf;
- Improvements to wetlands;
- New facilities – community gardens, better seating (shade) for field observation, etc.;
- Better integration of facilities (fields, playgrounds, etc.)

Issues the Master Plan should address

- Strategies for renovation and replacement of equipment;

- Guidelines for system-wide elements such as entry and directional signs, lighting, restroom enclosures, structures;
- Reduction in turf cover; strategies for "release" of lawn areas;
- Policies for trail plowing, access for disabled, etc.

Summary of November 16th Community Meeting

Suggestions for System-wide Improvements

- Athletic fields locked in off-hours – youth discouraged from informal use;
- Fields unlighted in off-hours – more informal use of lighted fields;
  example: Black Dog Park
- Extend Centennial Park level of landscaping to other parks;
- Summer use of hockey rink surfaces (street hockey?);
- Full-court basketball;
- More swings, hand pump swings;
- Tennis court improvements – more lighting, new court surfaces;
- More tennis practice boards;
- Wider trails;
- Better access into parks;
  example: Kraemer Preserve
- Better ice maintenance – grading system of "A, B, C" ice rinks;
  example: Carnelian
- Add lockers to warming houses;
- More (and safer) sledding hills;
- Management of geese and deer populations;
- Seek corporate sponsorship of park improvements;
- Community gardens;
- More plowing of paths and trails for winter walking;
  examples: Red Oak and Alimagnet
- More connecting bike trails, longer routes;
- "Pet parks" – off-leash exercise areas;
- Increase community awareness of landscape management issues, i.e. buckthorn;
  example: Terrace Oaks
- Add lawn bowling as a park activity;

- Add houses or shelters for birdwatching to one or more parks;
- Consider creating a botanical garden in a park.

Suggestions for Specific Park Improvements

- Make a trail connection along the lake between Crystal Lake West and Tyacke Parks, between boat ramp and fishing dock.
  - potential for picnic area
  - elevation change provides privacy
- Consider installing a labyrinth (of landscape materials, rock, etc.) as a central landscape feature in a park (i.e. Heart of the City square).
- Plow path in Red Oak Park in winter.
- Pave trail at north end of Red Oak Park.
- Paha Sapa Park – provide a stairway down the hill.
- Hollows Park – develop a formal path.

APPENDIX M – TRAILS MASTER PLAN

2000

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

Trail Master Plan

Burnsville, Minnesota

SEH No. A-BURNS9813.00

September 7, 2000

Trail Master Plan
Burnsville, Minnesota

SEH No. A-BURNS9813.00

September 7, 2000

I hereby certify that this report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Glen Van Wormer

Glen Van Wormer, P.E.

Date: September 7, 2000 Reg. No.: 9089

Reviewed by: Pamela Maki 9/7/00
Date

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architecture • engineering • environmental • transportation

September 7, 2000

RE: Burnsville, Minnesota
Trail Master Plan
SEH No. A-BURNS9813.00

Mr. Randy Oppelt
Park and Public Works Director
City of Burnsville
Central Maintenance Facility
13713 Frontier Court
Burnsville, MN 55337

Dear Mr. Oppelt:

Short Elliott Hendrickson Inc.® (SEH) is pleased to provide you with this final report and layout of the Trail Master Plan for the City of Burnsville. The plan is a result of a careful analysis of the needs of trail users within the City of Burnsville and coordination with adjacent communities' plans and those of the region. It reflects on the potential desires for trail usage and incorporates the existing system.

The process that developed the plan provided for public input through neighborhood meetings, special meetings, and a Council workshop. The plan has been reviewed on a number of occasions and should provide the City with a systematic method of determining the needs of trails in the City for the next several decades.

The next step is the implementation of the plan, and some suggestions are provided in the report. While some refinement of the trail system through implementation is desirable, we believe that the overall Trail Master Plan will provide the network of routes that will best meet the needs of the City.

We enjoyed working with the City and others in putting the plan system together, and appreciate the significant input that you have had into it. If you have questions regarding the background information, the process, or the results, please contact us.

Sincerely,

Glen Van Wormer

Glen Van Wormer, P.E.
Manager, Transportation Engineering Group

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Appendix

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Trail Master Plan

Prepared for Burnsville, Minnesota

1.0 Introduction

1.1 Background

Some of the community visioning and planning efforts in the City of Burnsville have identified the need for a Comprehensive Trail System within the City. These efforts included Partnerships for Tomorrow, Heart of the City, and different streetscape projects. The City has recognized some trail needs and has provided several improvements to the system such as a trail link to the Minnesota River and a trail joint project along Highway 13, Nicollet Avenue, and McAndrews Road. However, many of these efforts have been somewhat independent of an overall Comprehensive Trail Master Plan.

Many communities have found an ever increasing use of trails that have been installed either by the City or by another agency. The Gateway Trail from St. Paul into rural Washington County has seen tremendous ridership gains and is now at a point of needing to be widened. Recreational trails, such as the Luce Line, Root River, and others, are notoriously busy at certain times. The DNR has a significant program providing for recreational trail use. Trails throughout Minnesota, Wisconsin, and other midwestern states are busy from spring through fall.

Often neighborhoods or neighbors initially opposed to a potential nearby trail are among the regular users. Trails (and sidewalks) built along roads where few pedestrians or bicyclists were present previously, are now quite busy.

The fitness and wellness concerns have led to significant amounts of trail based exercise, from leisurely lengthy walks, often by seniors, to strenuous workouts by all age groups. These types of users are frequently mixed on the same trail.

Trails are also used more frequently for different types of trips and by all types of different users. Inline skaters, sometimes in groups or teams, use trails for workouts. Families, including children still with training wheels on bikes, share trails with those riders looking for a multi-mile workout. This has led to a trail system needing to provide for a myriad of users and purposes.

As a result, it is necessary to develop a system to bring together all of the elements of the users, the destinations, the modes, and the traffic conflicts and concerns.

1.2 Vision

Burnsville transportation end statement is "People find Burnsville a community with an effective, multi-modal transportation system connecting people and goods with destination points." The trail system has been deemed a critical element of the Burnsville community. It can be more than a transportation element, serving also as a mode of drawing neighborhoods together, connecting diverse land uses in a friendly environment, and providing additional recreation capabilities within the community.

2.0 Trail Master Plan Development

2.1 Basic Elements of a Trail Plan

Development of a trail plan is more than just connecting dots and drawing lines on a map. It is understanding who will be using the trail, for what purpose, what the origins and destinations are, and determining how the plan can provide a complete trail system connecting destinations and other trail systems. The additional elements of a plan are the analysis of traffic impacts and conflicts and the determination of maintenance capabilities. Finally, the plan needs public input to be successfully developed.

Too often, a trail plan is developed for a single mode of user. However, it is not practical to try to accommodate all users simultaneously. It is necessary to understand who might be using specific elements of a trail, for what purpose, and, to some degree, in what volume.

2.1.1 Users

Trails are often designed for bicycle use and frequently they are one of the main users. Bicycle riders generally either have a specific destination in mind or are looking for a relatively long route on a system. Bikes may be used for a specific purpose such as a trip to a park or a school. They are also used for commuting or for trips to and from commercial establishments. However, one of the main functions of a bicycle trail system is to provide for recreational use. Some users are content with a simple four to six mile ride, starting and ending at an origin, such as a home. Other riders are looking for more strenuous activity and may plan a 10 to 20 mile route. Obviously, this would include trips into adjacent communities or rides on the regional trail system. The mobility of the metropolitan area residents and the availability of numerous trails, both within and outside the metropolitan area, frequently will take these trail users to different portions of the area. However, there are a number of users who will use the Burnsville trail system as part of their trip. Finally, there are the long trail riders who are using it as either a method of fitness or who are into the longer trail rides, frequently upwards of 40 to 50 miles. These riders quite frequently will look for semi-rural or rural areas where they will be unimpeded by conflicts for long distances.

Pedestrians frequently use the same trail system although their trips are usually quite a bit shorter. Residents frequently will use a sidewalk or trail system as a method of activity. Trails can connect origins and destinations, but there is a limitation on distances most people will walk.

More recently, the rollerblades or short skis (blades) are used for training or fitness purposes. These users will frequently take trips of several miles, and require a smoother surface and less interaction with streets and other conflicts. In addition, they frequently will require a wider trail due to the use of either poles or a skating technique.

Obviously, one would not plan for inline skaters in areas where there are frequent driveways for commercial establishments or where there is heavy use by pedestrians or family bike riders.

2.1.2 Destinations

The second basic element of a trail plan is to determine the destinations that may be used by some of the various modes of users. Obvious destinations include parks with some type of activity that could either be related to the same mode of transportation or might merely be for passive or active uses. A similar destination would be a school for either a school activity or school ground function.

A lesser thought of destination is a commercial facility. Frequently, bicycles are found around convenience stores and fast-food restaurants. Trips to these types of establishments are generally shorter in length and can sometimes can be accommodated on an existing sidewalk system or on lower volume streets.

An infrequently used destination is employment. Although winter time bike use is extremely limited in Minnesota, there are some individuals who will attempt to use bicycles for trips to work year around. The use in the summer is generally confined to warmer days and often by temporary school age employees. It is frequently difficult to provide for an employment route through a trail system, since frequently these will be the "diehard" riders who will use the lane of traffic or the shoulder of a road as opposed to a trail system unless the trail is rather uninterrupted by any other type of user or conflict.

2.1.3 Systems

It is important to develop a system of trails. The trail system should connect destinations with the user's origin and may also be used to connect various destinations. Connections between parks with trails is one example.

It is also desirable to connect the Burnsville system to other systems in Bloomington, Eagan, Apple Valley, Lakeville, and Savage. The Burnsville system must be compatible with those developed by Dakota County, as well as Hennepin and Scott Counties. Continuity with the regional system, such as the proposal to develop a trail along the Minnesota River, is desirable. Finally, it is desirable to provide systems for different users. Longer bicycle trips might be well served by connecting the 35W trail to the Cedar Avenue river crossing via a Black Dog Road trail. While this would serve the commuter and recreational biker, it might see very few pedestrians other than those who drive to it to walk along the river. Conversely, a sidewalk system through an area serving senior citizen housing might be more adequate than a lengthy loop of a trail system.

Also important in destination of a trail plan is the potential impacts of traffic. Running a trail system through an industrial park where there are frequent trucks backing up or heavy peak hour use of the road

system by employees is undesirable. Similarly, running a trail through a heavy commercial area, such as some of the commercial area adjacent to the Burnsville Center, would result in numerous conflicts. Thus, the system must recognize the potential conflicts with various types of traffic in attempt to provide a system that is relatively free of these potential hazards.

An often overlooked consideration in developing a trail plan is maintenance. The determination needs to be made of the importance of sweeping and plowing the trail system. This again is an offset of the analysis of the users and destinations, and some type of priority system could be setup. It is also necessary to recognize that trails will need periodic surface restoration and a growing trail system will require greater funding for maintenance.

2.1.4 Public Involvement

A final element of a trail plan is the necessity of getting public involvement in the development of the trail, but also in providing information to the users of the system itself. Maps, which can either be publicly or privately provided, are essential so that Burnsville residents and others have access to the system. Signing along the trails is also necessary so that users do not have to frequently consult a map to determine where they are and where they should be turning. Good examples exist in the established trail systems, such as along the Root or Cannon Rivers.

Finally, a trail plan must fit into an existing system. Wherever expenditures have been made to develop a trail system, it needs to be incorporated into the proposed system. It needs to be coordinated with the Park System Plan and connect to the trails within the park system. This has a benefit of utilizing established systems within the park, but also reducing the necessity of traveling on City streets next to a park or providing parking for vehicles carrying bicycles to use a park system.

It should also be recognized that parks can be a part of the larger trail system and diverting trail users from a system running along a street to go through a park may be desirable.

2.2 Analysis of Users

As indicated in the development of the trail system, the users must be clearly understood so that the type of trail can be properly established. Surface smoothness, lack of conflicts, width, grades, and other elements are all a reflection on who will be using the trail and for what purpose.

If the purpose is to get to a specific destination, then the trail system must reflect not only a connection between the origin and destination, but also the elements at the destination. For example, if the destination is a park, the trail should connect to the park trail system. Or if the destination is Burnsville Center, the trail should connect to a pedestrian entrance and bike racks should be provided. There must be coordination with school, commercial establishments, or employment areas. Thus, a trail for a destination purpose must be designed to complete that purpose.

Much of the use of trails today is by individuals interested in wellness and fitness. Walking has become a preferred method of fitness for many, especially those who are advanced in age. While a walking trail through a park on a gravel surface might suit an individual using walking as a fitness mode, seniors using a short walking route are looking for a smooth surface, lack of conflicts with bicycles and inline skaters, limited grades, and especially a short loop route. Thus, the trail near a senior development would be different than that established in a neighborhood likely to have a number of younger families.

As stated earlier, trails are used for recreation and frequently for longer distance bike rides or blade use. Certain portions of the system will reflect primarily on recreational use, such as a trail along the Minnesota River or a connection to Murphy-Hanrehan Park Reserve.

The trail system must also reflect on the potential for other types of modes other than the normal three that are considered; pedestrians, bicycles, and inline skaters. In some areas, wheelchairs will be mixed in with the users. The trails may be utilized for therapy by mobility challenged individuals who will require perhaps the same surface as inline skaters, but who will react to other traffic slowly. Skateboards, strollers, and other methods may frequently be mixed. Recognizing the significant difference between a wheelchair user and a fitness minded inline skater, it may be desirable to consider some alternate routes for the two uses.

There are also users or potential users who are excluded or who will not use the system. Motorized vehicles, including snowmobiles, are prohibited by City Ordinance from operating within the City.

It should be recognized that not all sections of the trail system will accommodate all types of users. It may be that the users will self select the proper trail system just by the type of trail that is provided. Where there is a conflict, an alternate method to provide for one of the modes may be desirable. As an example, high speed bikers who used to use the Mahtomedi-Stillwater trail along County Road 12 are now accommodated on a paved shoulder. This has removed some serious conflicts between pedestrians and family bikers with the high speed fitness oriented biker.

3.0 Trail System

3.1 Existing System

The City of Burnsville has an extensive City sidewalk system. Sidewalks are inplace on each side of most of the streets in the City's arterial system. There are also a number of sidewalks along collector streets and those streets serving several of the schools and parks. However, most of the sidewalks are 5 feet in width and designed primarily for pedestrian activities.

The City also has a number of trail sections inplace. These include an extensive system along County Road 11, the specific trail along I-35W south from Black Dog Road, and the connection from Highway 13 and Nicollet Avenue towards McAndrews Road. There are also extensive trails in some of the parks, and in combination with the sidewalk system, will provide an opportunity for off-road travel by pedestrians and to some degree bicycles.

Most segments of the trail system can be incorporated into the Trail Master Plan since they have been aligned with destinations of various types. Some existing sidewalk sections can be incorporated into the trail system where volumes are low. Sections of sidewalk can be temporarily used as part of the trail system until funding and priorities permit full development of the trail system. Other sections of existing sidewalks will not be a part of the trail system, but still serve desirable purpose of providing a route for pedestrians out of traffic.

Some trail plans have been in existence as parts of Transportation Plans or other Facility Plans. They may have been thoughtfully developed as part of another planning component. They need to be updated to reflect the significant change in users and to reflect the changes in systems throughout the metropolitan area.

3.2 Trails in Adjacent Communities

As part of their Comprehensive Plan updates, surrounding communities have been developing trail systems.

3.2.1 Savage

The City of Savage has a plan for parks, greenway corridors, and natural resources prepared in April 1998. Some trails are already inplace, such as the trail along Glendale Avenue and parts of County Road 42, and a second trail meandering through a residential neighborhood south of County Road 42. A major proposal is for a trail following the Credit River between County Road 42 and the Minnesota River.

Direct connections affecting Burnsville include an existing trail from Canterbury Park to the north edge of Sunset Pond. Savage also intends to develop a trail along Murphy-Hanrehan Park's north border connecting to Burnsville Parkway. A connection is proposed along County Road 16 and an additional trail connecting to the Kraemer Nature Reserve in Burnsville. This particular trail would provide continuity through the park system to Butler Park and ultimately the proposed Credit River Trail.

All five connections provide critical connections to Burnsville. The Murphy-Hanrehan Park and the Credit River Trail can be destinations for area residents. The County Road 42, existing Sunset Pond connection, and even the County Road 16 connection can provide continuity of systems throughout the Dakota-Scott area.

3.2.2 Lakeville

The City of Lakeville has similarly developed a trail and park map and system. In conjunction with Dakota County, they have established a trail system along some of the major county roads including County Road 5 and County Road 46. Their plans call for continuation of a multi-purpose trail on either side of County Road 46 from County Road 5 east. This would provide connections via County Road 5 into Burnsville and connection at Lac Lavon Drive. The final connection is a sidewalk on Maple Island Road to the Burnsville City limits. This could connect to the trail already provided in the Burnsville park system. This would also provide a connection to a trail and sidewalk system in a Lakeville park northeast of I-35W and County Road 46.

3.2.3 Apple Valley

The City of Apple Valley has a number of trails in existence along east-west roadways connecting to Burnsville. The primary connection is via the County Road 11 trail in Burnsville and Apple Valley near 140th Street and McAndrews Road. Apple Valley has a trail along Palomino Drive east from County Road 11 and along McAndrews Road leading past the zoo. There is also a trail system along all of 140th Street connecting to a number of other potential destinations in Apple Valley. Final connections impacting Burnsville are along County Road 42, although the system is incomplete, and along County Road 46.

From a Burnsville system standpoint, the inplace County Road 11 trail provides existing connections into the Apple Valley system. County Road 42 trail connecting the Southcross Drive may be an important link in the future system in Burnsville.

3.2.4 Eagan

The City of Eagan also has a number of trail segments, although most are either sidewalks or proposed. The City has an existing sidewalk along Diffley Road connecting County Road 13 and the Metcalf School. They are also proposing roadway corridor trails along Slater Road, which would connect to Burnsville Parkway and along either side of Cliff Road connecting into Burnsville.

Many of the City's existing trails are adjacent to roadways in the central area of the community, although they do connect a number of parks and other destinations. The most logical connection is via Cliff Road, which will provide access to off-road trails at Galaxie Avenue, Johnny Cake Ridge Road, and other north-south streets connecting to other trails.

3.2.5 Region

There are also some trail systems of regional significance. A proposal has been put forth to provide a trail along the Minnesota River from Fort Snelling into Scott County. The trail as proposed would be on either side of the river and the Dakota County segment would coincide with Black Dog Road through much of Burnsville. It would also provide an opportunity to coordinate development

of trails and the amphitheater and Quarry Park areas between Burnsville and regional trails.

A second connection is between the Minnesota Zoo and Murphy-Hanrehan Park. Three alternates have been identified and all three would coincide with potential trails to be developed in Burnsville.

In addition to trails being proposed by other communities and agencies, there are a number of publications that have looked at trails and streets and tried to design them into a series of tours or trail rides throughout the metropolitan area and Minnesota. One such route indicates a 25-mile route throughout Burnsville that incorporates the County Road 11 trail, River Hills Drive, Burnsville Parkway, and Southcross Drive. Trails put together in text like this will have some indication of their appropriateness for inclusion in the Burnsville Trail System.

3.3 System Development

While it is possible to use observations, knowledge of existing uses, or other methods to develop a "connect the dots" type of development for a trail plan, it is more desirable to systematically identify origins, destinations, desire lines, and restraints, and develop a system based on this theoretical concept. This can then be modified to reflect existing trails, potential constraints, and system connections to develop a trail system. This method was used in development of the Burnsville Trail Master System.

Destinations were developed using comprehensive land use designations. Four specific types of land uses were utilized as destinations. These included schools, parks, employment areas generally coming from industrial uses, and commercial developments that could either be a commercial or an employment attraction. Each of these was developed by layering out the specific land use onto a specific map. Thus, each school, each park, and each concentration of commercial or employment areas was easily identifiable on separate maps.

The residential developments within the City were then divided into 52 separate "neighborhoods". These neighborhoods were designated primarily by using portions of the street system to cordon off each area. Each area or neighborhood would then have a centroid from which most trips could be based.

The park plan was then further defined to identify those parks that would be of City-wide interest. Neighborhood parks that have services duplicated in other parks were disregarded in the trail plan development. The parks of City-wide interest were then connected by a line on the map from the center of the park to the center of each

neighborhood centroid. This resulted in a map with a significant number of lines fanning out from each park. Using the various major parks, a series of lines were combined and bent to conform to the street or trail system that is inplace. As an example, a number of neighborhoods from the southeast area of Burnsville can be connected to Terrace Oaks Park by bending the desire lines to conform to the alignment of County Road 11. By forcing the lines along the existing trail, many of the desires can be met by the inplace system. Similarly, desire lines from the west central portion of Burnsville to Terrace Oaks Park are somewhat restricted by access across the freeway. Once they are connected to either a crossing at Burnsville Parkway or McAndrews Road, they can be assigned to alternate routes to reach the park. By reversing the process and using either Sunset Pond, CamRam and Murphy-Hanrehan Parks, similar, but reversed desire lines from the east central neighborhoods can follow along some of the same routes. Finally, these routes can be combined into a single map with designated routes to connect neighborhoods to parks. By further bending these to provide convenient access to neighborhood parks, multi-purpose residential park connections can be met with a minimum number of trails.

Similarly, individual schools can be aligned with adjacent neighborhoods. Schools, however, have shorter distances of attraction and would require less "cross-city" trail use. Again, they were primarily aligned with the immediate adjacent neighborhoods likely to be origins of school trips.

Employment centers were similarly designated, but routes leading into the centers were carefully determined. These routes were then connected back to a system of trails that would lead back to the neighborhoods. Recognizing that many of the employment trips will be by bicyclists preferring to use the road system rather than a trail system, modifications were minimal to provide these connections.

Finally, the commercial areas were designated by access from the immediate neighborhoods for small convenience-type centers and

along a longer system leading to major centers, such as the Burnsville Center, Sioux Trails Center, or the Heart of the City area.

Once these trail systems were refined based on desires, they were then modified one additional time to reflect inplace trails, restraints to construction, and a better spacing of the trail system. As an example, desire lines will follow along 130th Street east of Nicollet Avenue for many of the connections. However, continuity with the Heart of the City system and with some existing trails and desire lines using Burnsville Parkway and Kennelly Road would make Burnsville Parkway a better connection between I-35W area and County Road 11. In addition, the Civic Center Drive trail connection at the south to 134th Street affords an additional connection to County Road 11. Thus, the 130th Street connection through a residential neighborhood was dropped in favor of easier to build and more uniformly spaced connections along Burnsville Parkway and 134th Street. A few similar adjustments were made in other areas.

The result is a basic trail system that is comprised primarily of off-street trails adjacent to major roads, but taking advantage of those existing components in the park system. Connections are shown for future extensions to the quarry area and in the amphitheater area.

Some lower volume on-street or even sidewalk trails connections can be made where it would be difficult to provide a 10-foot trail or the demand and priority may be lower. These include an on-street system south of Crystal Lake, some connections along 134th Street and a few other areas.

Finally, the trail system was bent or changed as necessary to make connections with other communities. The specific trails were added to the Kraemer Nature Preserve to provide a connection into Savage. Because the only active connection into Eagan is along Cliff Road, a trail segment was added in the Burnsville portion of Cliff Road.

The trail system plan map is attached to this report. This map includes the trail system developed as part of this Trail Master Plan study and shows many of the existing trails in parks that can be incorporated in to recreational riding and walking. Neighborhood connection trails (existing) are also shown on the map.

The trail system plan map also shows a potential future trail following the Dan Patch rail line from Savage to Lakeville. Currently, the track is used very infrequently, but is being considered as a commuter rail route. If the commuter rail route does not materialize and the normal rail use ceases, use of right-of-way for a trail is possible.

The City has a number of paved trails within the park system ranging from a short segment in Neill Park to the Sunset Pond loop. These are

used primarily for recreation, although some can be incorporated into the base system. The in-park trails or loops are shown separate from the base system.

The trail system map shows on-street trail connections. There are sidewalks along some of the connections, primarily in the areas north of McAndrews Road. Along others, there are no sidewalks, and all users must use the street. None of these connections currently has designated use lanes on the street. There may be wide edge lines painted on the street, but these have no official designation for bicycle or pedestrian use.

While on-street bike trails can be marked, they are not practical for medium to high volume streets or for multipurpose uses. Bicyclists are required to follow driving rules and ride to the right. Thus, a marked trail on both sides of the street is required. Pedestrians must walk facing opposing traffic, including bicycles. Thus, they also will be on both sides of the street, sharing the area with bicycles. Parked cars, delivery vehicles, service vehicles, and right turning vehicles compete for the same space. This may work if the volume of use is low for all types of use, and therefore, the conflicts are few. Once the number of conflicts become higher, an off-street, multipurpose trail is generally the best solution. Even where the conflicts and uses are low, there is still a concern with parked or turning vehicles interfering with bikes and pedestrians.

A marked "bike lane" should have restricted parking as bicyclists will assume it is exclusively for their use. This creates problems at intersections for right turning vehicles and in residential areas where on-street parking is expected. A standard bike lane is almost 5 feet in width and with lanes on both sides, 10 feet of pavement is devoted to bikes. The marked bike lane must also be outside areas of the street where parking is allowed and should be separated from right turn lanes. Observations of marked bike lanes (painted symbols and lines) in downtown Minneapolis show considerable motorist and bicycle rider confusion at intersections with right turn lanes or with a designated parking lane, but no parked vehicle.

One option is to create a shared lane thereby having bicyclists share it with parked vehicles, turning vehicles, etc. With low volumes, conflicts are low and confusion over use is less. For shared lanes, no bike markings are appropriate. Bicycle route signs can be used that only provide directional guidance to the bicyclists.

The City currently does many locations with a white edge line painted on the street. If this is at least 4 feet from the curb, it can help by providing a sense of separation between vehicles and bicyclists/pedestrians, but it does not constitute a bike lane. It does not

have official designation, special signing, or marking, but it is of benefit. With limited parking use and low volumes of traffic, bicyclists, pedestrians, and others can use the street with reasonable safety.

There are many existing sidewalks in the City that provide a safe walking area for pedestrians and can accept some of the alternate mode uses. However, they may not fit into the base trail system that reflects multipurposes and multimodes. They are still important in that they provide pedestrians with a walking area out of traffic, connect with some specific destinations, such as schools, and provide for local recreational walking. They are not shown on the Trail Master Plan map unless they fit in to the citywide trail plan development defined in this study. The complete existing sidewalk system is shown on a separate map.

3.4 Public Involvement

A considerable effort was put forth to provide opportunities for the public to become involved in the development of the system. Open houses were held specifically for the Trail Master Plan on July 6, 1999 and November 16, 1999. These were in conjunction with a Park and Natural Resource Committee meeting which also provided input. A meeting was held at a joint City Council workshop and a Park and Natural Resource Committee on January 25, 2000. The trail system concepts, primarily in terms of goals and overall objectives, were also discussed at other Park and Natural Resource Committee meetings, at open house meetings relative to the parks plan, and at a Park and Natural Resource Committee meeting in April 1999.

The City also held a series of neighborhood meetings in the summer of 1999. Parks and trails were discussed at these meetings and comments were brought back to the staff and consultants working development of the Trail Master Plan.

The comments received throughout these open houses and the discussions at the committees could be condensed into several common themes. These themes included the following:

- Trails are an important element of our community.
- Our current trail system is inadequate.

- The trail system should access parks.
- It should also access other important destinations in the City.
- Our system should connect with neighboring systems.
- Separate trails for walkers and bikers should be provided, or if that is not possible, the trail should be wide enough to permit multiple uses.
- Off-road trails are preferable for most uses.
- Maintenance of trails is important including sweeping in the warm season months, snowplowing in the winter, and maintaining the surface in good condition.
- Need to provide public information on trails including a map.

Most of these common theme comments from citizens were incorporated into the Trail Plan through the systematic approach that was utilized. Some, such as the separate trails for walkers and bikers, are desirable, but not practical given the restraints of right-of-way along much of the trail system.

4.0 Design Considerations

4.1 Design Requirements

As indicated earlier, specific portions of the trail should be designed to meet the needs of the expected users. However, the amount of variation or additional width that can be incorporated is often a function of available right-of-way and construction funding.

Recognizing the diversity of modes using a trail system, the standards and guidelines for bikeway design issued by the Minnesota Department of Transportation (Mn/DOT) and other groups recognize the need for some additional width and for some design speed considerations. Attached is a summary of guidelines for off-road bikeways published by Mn/DOT that shows a typical off-road design section. The section is approximately 10 feet in width and provides a basic clear zone and shoulder on either side. An 8-foot wide trail has been used in areas of restricted right-of-way. Maximum grade is approximately 8% with a “landing area” near

intersections. Recognizing that inline skaters may also be using the trail, grades and curves are a special consideration.

Mn/DOT's booklet on planning and design guidelines, published in 1996, is 57 pages in length. By contrast, their guidelines several years ago consisted of less than 10 pages. The process of planning and designing trails is constantly changing, and designs for trails to be built should reflect the standards in effect.

It has almost universally been reflected that off-street bike trails are preferred to on-road bike systems. The off-road trail will provide for two-way traffic for pedestrians, bicycles, and the other users where the on-street trail has to have a component on either side to reflect the needs of both. Pedestrians and bicycles would also be opposing each other continuously to comply with the rules of the road. In addition, on-road systems are often confronted with parked vehicles, and there is constant friction with motorized traffic, especially at intersections.

To safely develop an off-road trail does require careful design considerations and the standards and guidelines of Mn/DOT need to be adhered to unless there is a specific exemption for which there are extenuating circumstances. For practical purposes, a 10-foot wide section should be used throughout the Burnsville trail system.

Because of increased use by inline skates, a smooth surface, generally bituminous, is desired.

4.2 Maintenance

As indicated earlier, maintenance is critical in the usability of a trail system. Sand from adjacent streets or dirt and debris blown onto the trail will occur. Inline skaters require a smooth surface for safe travel and especially for braking. Thin wheeled bicycles should not utilize trails that have loose material on top of hard surface. For these reasons, periodic sweeping of those longer sections of trails must be part of the system.

Snow removal is a requirement wherever year-round trails are to be used. This means the standards for design must have some area adjacent for snow storage. In addition, careful design of intersections must be done to provide for snow storage to eliminate snow bank sight distance restrictions. A policy decision should be made as to what types of trails need to be plowed and maintained for year-round travel. Snow removal may also be necessary where distances between street and trail are minimal.

In addition, there is a requirement of surface maintenance. This means methods of patching, creating joints, and other surface restoration must be carefully considered. Patching can create a break in the smooth

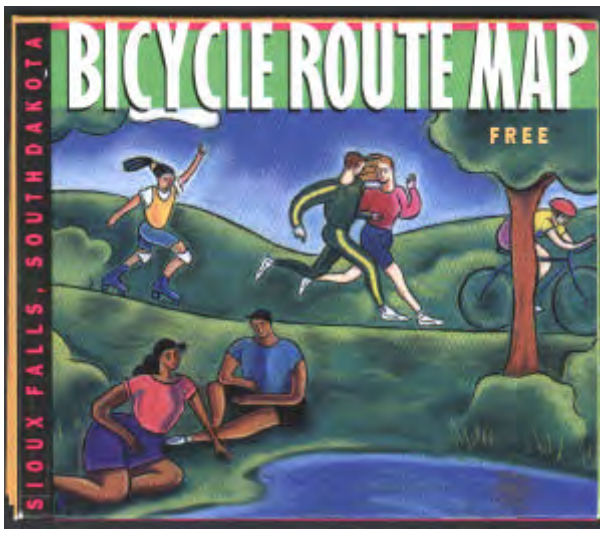
surface for inline skaters and some bumps for bicycle riders. Patches installed on trails need to be smoother than those installed on streets.

The City of Burnsville has developed some snowplowing and maintenance guidelines for sidewalks. A similar system for trail systems should be developed as the system is expanded.

Alternate winter time uses of the trail should also be considered. There has been demand for use of trails by cross country skiers which is in conflict with snowplowing to provide for pedestrians and other types of activity.

An often unthought of requirement along trails is the need to mow or otherwise control of vegetation that may encroach on the trail system. Low hanging branches have been known to strike bicycle riders, creating hazards, and even accidents. Although litter is seldom left behind by bicycle riders on trails, local systems have accumulated some debris from a few bicycle riders or from motorists on the adjacent street or pedestrians using the same system. A continual effort to pickup trash along the trails and especially to remove animal waste is essential in maintenance efforts. Because of these additional costs, it may be desirable to establish a specific trail maintenance portion in the City's budget.

4.3 Public Information



Several types of information need to be provided to users of this system. The most frequently requested device is a map to assist in providing recreational users with an idea of routes to choose. This can be issued strictly for the City of Burnsville or can be done in conjunction with other Dakota County and Scott County communities. Recreational bikers will frequently cross City lines, and the availability of system maps for inter-city travel should be considered.

The map can be generated from an GIS system, but needs to be of the type that can be taken with a rider.

A second major element of information is the signing system. Along many of the trails, such as the Root River, there are a series of signs providing destination information. It would not be possible to provide comprehensive signing for the complete Burnsville system as proposed. However, some recreational routes, such as the Black Dog route, the County Road 11 trail, or even a "circle of Burnsville" could be signed. The remainder of the routes could be followed by use of a map.

Public information will also require warning and traffic control signs and pavement markings. This should be done based on a separate engineering study, to provide both continuity of warning signs, and specific signs as trails are installed.

A major problem or concern with some off-system trails is the number of locations where they cross public streets. Where stop signs have been installed, they are frequently ignored and yet are necessary to properly control traffic. The City needs to establish a policy relative to the installation of stop signs. It will also be necessary to provide periodic enforcement of the stop signs, especially at hazardous locations. Efforts of the Department of Natural Resources and several local police departments along the Gateway Trail have led to a higher rate of compliance, although the compliance rate continued to be less than desirable.

5.0 Implementation

Implementation should be based on funding, priorities, and system connections. The base trail system is 60 miles in length, and includes 57 miles of off-street bituminous trails and 3 miles where existing streets and/or sidewalks will be utilized. The City currently has 20.5 miles of existing bituminous trails, some of which may need upgrading to wider widths to meet current design desires. Twenty-four miles of the routes shown on the base trail system currently have sidewalk that could be utilized in the interim for some modes. Other portions of the trail plan will require complete development of a trail where none exist. There will be approximately 36.5 miles of new trail constructed. The chart in the Appendix shows more details on both the work needed and the costs. It also shows the cost of potential overpasses for the trail system at Highway 13.

The priority of the system needs to be determined through some future detailed studies. However, it appears that the missing connections, where there is no existing trail or sidewalk and where the trail is a critical element in a loop for recreation or a major desire line, need to be highest priority. The volume of traffic anticipated to use an existing sidewalk can be used to help prioritize those conversion segments and also to establish priorities between updating sidewalks to trails and adding trails where none exist. It is possible that some sidewalk

segments may be adequate for a considerable period of time and would receive a low priority rating. In addition, priorities will be affected by the available funding sources.

The City has used a number of financing methods. Trail segments have been funded through the Capital Improvement Program (CIP) and some have been matched with grants, such as Highway 13, Nicollet Avenue, and McAndrews Road trail segment. Funding trails through the CIP does provide an ongoing trail improvement program. Other trail improvements have been constructed as part of street improvements. The existing construction of a trail along Kennelly Road actually permitted a change in the initial base trail system and also provided an opportunity to use an alternative funding source. Developments or redevelopments, such as the Heart of the City or Streetscape, also provide opportunities to incorporate trails into the funding and planning systems. Specific developments, such as the proposals for the Northwest Quadrant of the City, will also provide funding sources since the trails can be incorporated into the development.

Future funding will see the continued use of those sources currently used and potentially the addition of specific trail funds from the DNR or from various transportation funding sources. Having the base trail system well defined will provide an opportunity for more favorable grant and funding submittals.

Although there was a considerable amount of public input opportunities throughout the development of the plan, it would also be necessary to utilize public involvement in the implementation processes. This can be done through continued open houses or public meetings, or developing a special advisory committee to work with the funding sources and implementation of the master plan. A special committee given goals, guidelines, parameters, and restrictions could provide priorities consistent with recommendations of the report and with standards. The Trail Master Plan in this report shows the system in general terms. The committee would need to refine the system

looking at intersections, which side of the road the trail should be on, specific trail widths, and details of coordination within and through parks. Obviously, the work of the group or committee should be coordinated with existing committees, such as Parks and Natural Resources. In addition, the committee can review financing alternatives and provide a financial plan back to the City.

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Appendix

SUMMARY OF MINIMUM DESIGN STANDARDS & GUIDELINES FOR OFF-ROAD BIKEWAYS

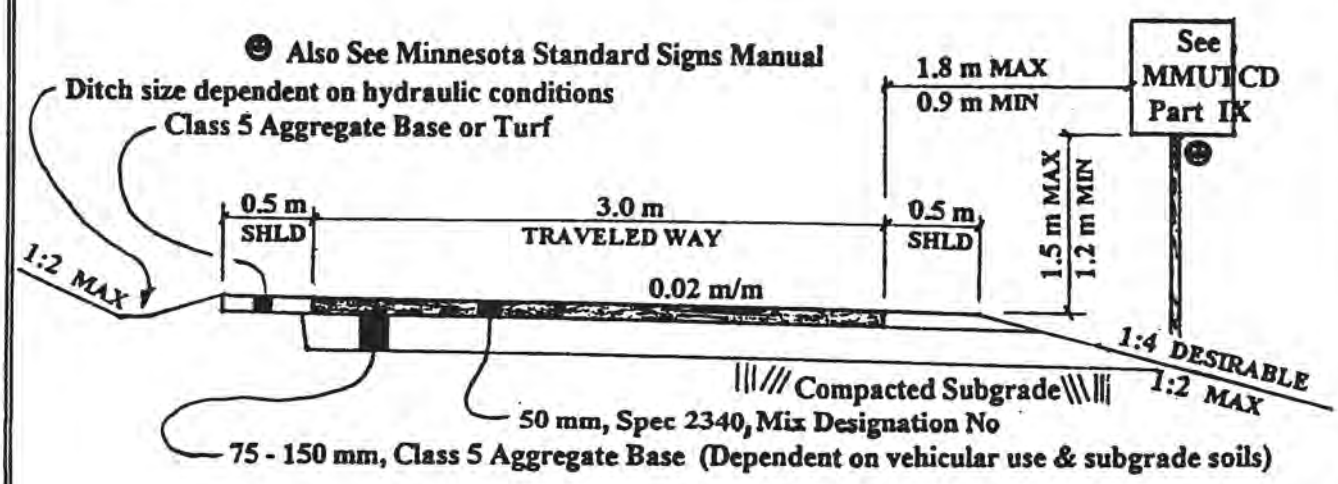
11/26/96

DESIGN SPEED: **30 km/h** Use **50 km/h** for: grades longer than **150 m AND > 4%**, from the uphill point where the **grade=4%** to **150 m** past the downhill point where the **grade becomes <4%**.	WIDTH: **3.0 m** combined bike/ped path **2.5 m** two-way bike only **1.5 m** one-way bike only **3.0 m** bridge/ underpass ✔ widen if on sharp curve or steep grade
VERTICAL CLEARANCE: **3.0 m**	SHOULDER: **0.5 m** ✔ provide edgeline if shoulder paved the same
GRADES: **8.3%** max. ✔ provide at least a 3 m landing with max. 2% grade at intersections	CLEAR ZONE: **0.5 m** from edge of traveled way ✔ separation distance to road see MBM Fig. 5-3.0A & B
DRAINAGE: **Use bicycle safe inlet grates** ✔ see St Pl M4152 & M4154 ✔ use 2% cross-slope ✔ intercept drainage on high side with ditch ✔ minimum culvert dia. = 450 mm (18")	INSLOPE: **1:2** (rise:run) ✔ 1:4 desirable ✔ if 1:3 or steeper, see MBM Fig. 5-9.0B for use of safety rail (min. 1.4 m high)

Traffic Control Devices (ie: signs & pavement markings) shall be installed in accordance with the Minnesota Manual on Uniform Traffic Control Devices (MMUTCD)
A traffic control layout should be in the plan or submitted with the plan.

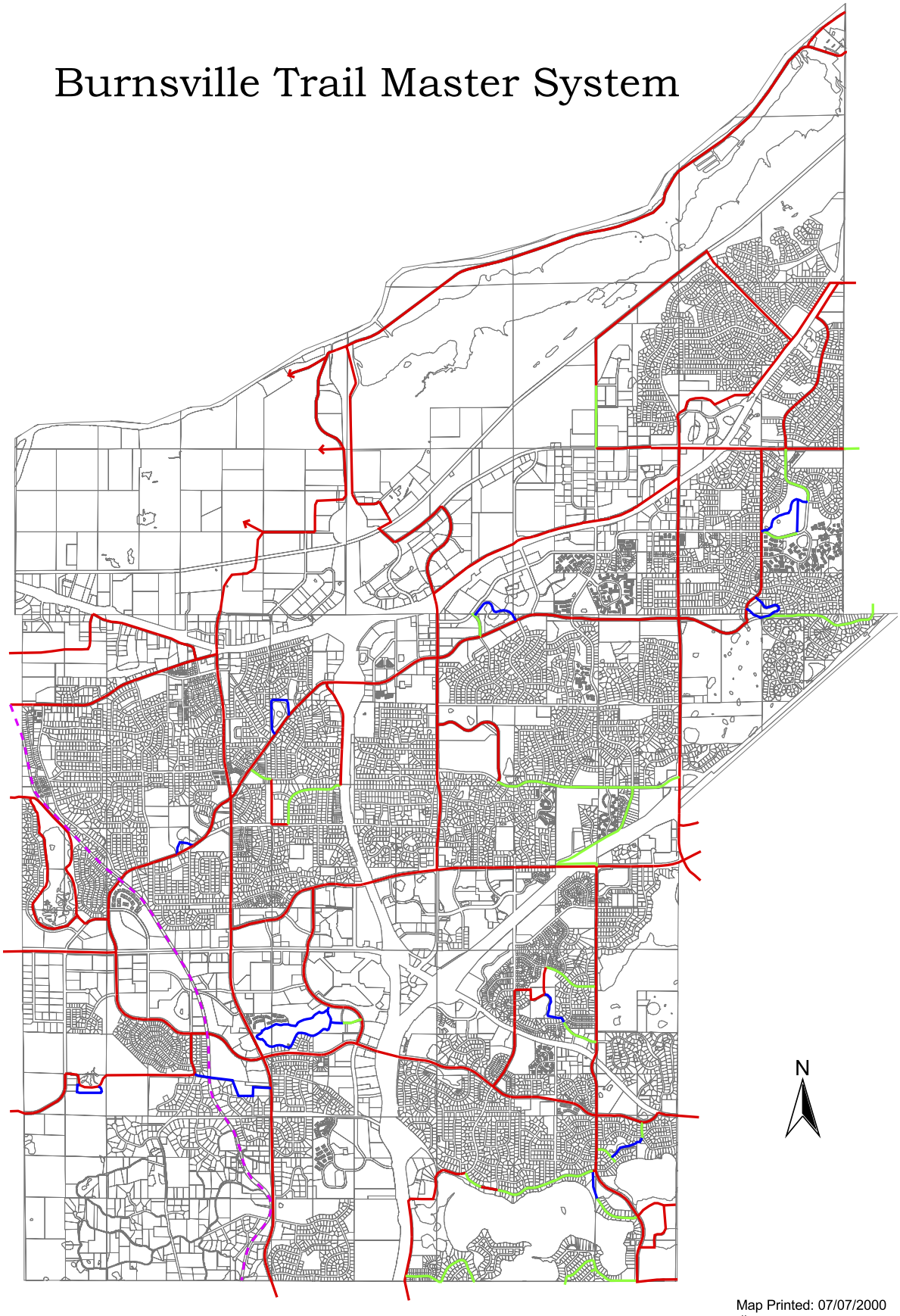
Minimum Standards are in **BOLD & UNDERLINED** text: If standards are not met and using...
...State Aid funds ➡ request a variance in accordance with State Aid Rules 8820.3300
...Federal Aid funds ➡ request design exception in accordance with State Aid Project Development Manual

MBM=Minnesota Bikeway Manual dated June 1996 Metric conversion=3.2808 feet per meter



TYPICAL OFF - ROAD DESIGN SECTION

Burnsville Trail Master System



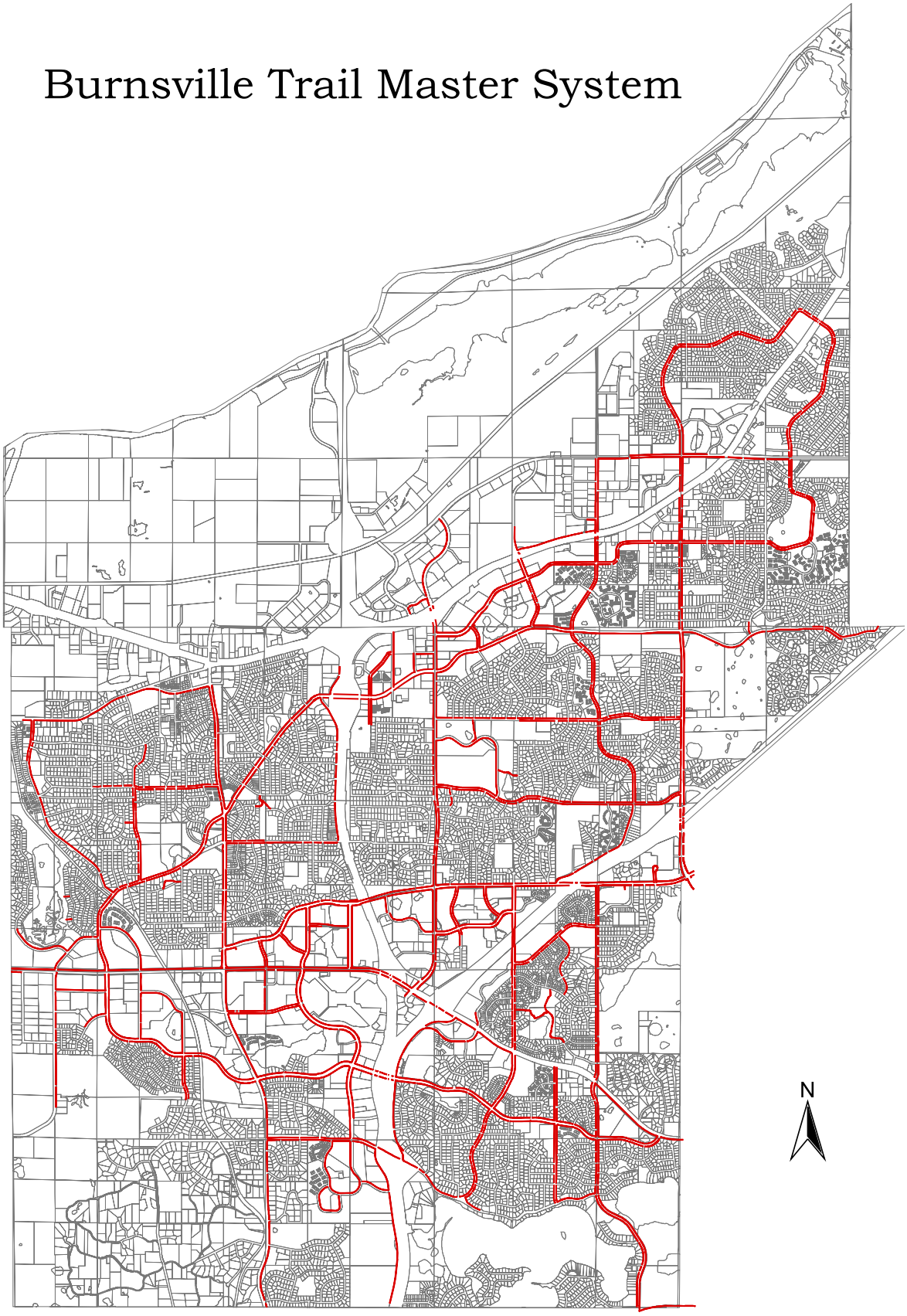
Map Printed: 07/07/2000
rlb

3000 0 3000 6000 Feet

- Base Trail System
- On Street Trail Connections
- Future Trail on Railroad R/W
- In Park Trail or Connection

SEH

Burnsville Trail Master System



Map Printed: 07/07/2000
rlb

3000 0 3000 6000 Feet

Sidewalk

SEH

COST ESTIMATES FOR BASE TRAIL SYSTEM

COST PROJECTIONS	
- Cost Per Mile - Difficult Areas (14 mi.)	$ 211,000
- Estimated Cost for Difficult Areas	$2.95 Million
- Cost per Mile - Easy Areas (22.5 mi.)	$ 148,000
- Estimated Cost for Easy Areas	$3.3 Million
- Cost Per Mile for Sidewalk Removal (24 mi.)	$ 27,000
- Estimated Cost for Sidewalk Removal	$ 650,000
- Total Estimated Cost for System	$6.9 Million

COST FOR HIGHWAY 13 OVERPASSES / UNDERPASSES	
- Diffley Road	$ 760,000
- Nicollet Avenue	$ 767,500
- County Road 11	$ 886,500
- County Road 5 - Construct with Interchange	Part of Project

APPENDIX N – MVTA RESOLUTION

JANUARY 22, 2008

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

RESOLUTION NO. 08-5634

CITY OF BURNSVILLE, MINNESOTA

RESOLUTION SUPPORTING THE MINNESOTA VALLEY TRANSIT AUTHORITY AS THE PRIMARY TRANSIT PROVIDER SOUTH OF THE MINNESOTA RIVER

WHEREAS, the Minnesota Valley Transit Authority (MVTA) currently provides transit service for the cities of Apple Valley, Burnsville, Eagan, Rosemount and Savage; and

WHEREAS, the MVTA is one of several agencies participating in the Urban Partnership Agreement (UPA) recently granted to help ease congestion in the Twin Cities area by the US Department of Transportation; and

WHEREAS, the MVTA adopted its Strategic Plan in May 2007, with one of its goals to be the transit service provider south of the Minnesota River; and

WHEREAS, the MVTA offers express service to downtown Minneapolis, downtown St. Paul, and local service to the Mall of America where riders can make connections to the light rail line, in addition to local service between communities and reverse commute service from the core cities to the suburbs;

WHEREAS, the MVTA is already working in two of the corridors identified as part of the UPA's (I-35W and Trunk Highway 77 - Cedar Avenue) effort to utilize new initiatives to reduce congestion;

NOW, THEREFORE, BE IT RESOLVED, that the City of Burnsville supports the Minnesota Valley Transit Authority's goal of serving as the primary transit provider South of the Minnesota River.

Passed and duly adopted by the City Council of the City of Burnsville this 22nd day of January, 2008.

Elizabeth B. Kautz, Mayor

ATTEST:

Macheal Brooks, Deputy City Clerk

APPENDIX O – MCES POLICY B-1B

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

Appendix B-1: Wastewater Treatment Facilities

b. Wastewater Flow Projections

The following wastewater flow projections are based on the projected sewered population, household and employment projections as shown for each community in Appendix B1-b using 75 gpd per person and 25 gpd per employee from new development to project future flows. Communities may use the flow projection method that is most appropriate to them, and indicate methodology and assumptions used as part of their comprehensive plans. Metropolitan Council Environmental Services will use the projected sewered population, household and employment information to estimate system flows and schedule needed improvements to the Metropolitan Disposal System.

Community Flow Projections

	2010 (MGD)	2020 (MGD)	2030 (MGD)
Andover	1.63	2.17	2.32
Anoka	2.04	2.07	2.11
Apple Valley	4.87	5.37	5.44
Arden Hills	1.25	1.51	2.26
Bayport	0.67	0.72	0.78
Birchwood	0.08	0.08	0.08
Blaine	4.70	5.31	5.70
Bloomington	10.26	10.42	10.63
Brooklyn Center	2.97	2.97	2.82
Brooklyn Park	5.80	6.16	6.37
Burnsville	5.82	5.89	5.84
Carver	0.21	0.26	0.27
Centerville	0.28	0.30	0.34
Champlin	1.70	1.73	1.78
Chanhassen	2.92	3.49	3.71
Chaska	2.90	3.32	3.49
Circle Pines	0.45	0.43	0.43
Columbia Heights	1.53	1.58	1.56
Columbus Township	0.01	0.10	0.13
Coon Rapids	6.19	6.00	5.86
Corcoran	0.27	0.58	1.47
Cottage Grove	2.34	3.00	3.78
Crystal	2.26	2.21	2.22
DahlgrenTownship	0.00	0.30	0.77
Dayton (pt.)	0.29	1.43	2.23
Deephaven	0.45	0.44	0.43
Eagan	6.90	6.87	6.82
Eden Prairie	5.53	5.65	5.60
Edina	6.45	6.46	6.49
Elko/New Market	0.43	1.00	1.53
Empire Township	0.08	0.29	0.32
Excelsior	0.29	0.31	0.31
Falcon Heights	0.91	0.89	0.88

	2010 (MGD)	2020 (MGD)	2030 (MGD)
Farmington	1.92	2.42	2.79
Forest Lake	1.92	2.25	2.66
Fridley	5.07	5.05	5.07
Gem Lake	0.03	0.05	0.06
Golden Valley	3.20	3.19	3.24
Greenfield	0.01	0.02	0.03
Greenwood	0.06	0.06	0.06
Hassan Township	0.06	0.27	0.31
Hastings	2.04	2.33	2.48
Hilltop	0.10	0.10	0.09
Hopkins	1.85	1.88	1.90
Hugo	0.62	1.20	1.72
Independence	0.02	0.03	0.05
Inver Grove Heights	2.39	2.77	2.92
Lake Elmo	TBD	TBD	1.81
Laketown Township	0.07	0.07	0.06
Lakeville	5.15	6.68	7.38
Landfall	0.06	0.06	0.06
Lauderdale	0.29	0.30	0.30
Lexington	0.13	0.13	0.13
Lilydale	0.09	0.09	0.09
Lino Lakes	1.20	1.93	2.20
Little Canada	1.30	1.36	1.41
Long Lake	0.28	0.29	0.30
Mahtomedi	0.61	0.65	0.65
Maple Grove	6.02	7.03	7.60
Maple Plain	0.32	0.33	0.34
Maplewood	4.57	4.62	4.69
Medicine Lake	0.05	0.05	0.05
Medina	0.54	0.95	1.15
Mendota	0.02	0.02	0.02
Mendota Heights	1.64	1.63	1.61
Minneapolis	57.54	57.82	58.52
Minnetonka	6.70	6.60	6.66
Minnetonka Beach	0.07	0.07	0.06
Minnetrista	0.24	0.53	0.72
Mound	1.03	1.05	1.05
Mounds View	1.42	1.42	1.42
New Brighton	2.29	2.25	2.23
New Hope	2.20	2.19	2.18
Newport	0.37	0.44	0.50
North Oaks	0.09	0.12	0.18
North St. Paul	1.38	1.40	1.44
Oak Park Heights	0.69	0.69	0.71

	2010 (MGD)	2020 (MGD)	2030 (MGD)
Oakdale	2.81	2.79	2.86
Orono	0.63	0.70	0.71
Osseo	0.23	0.25	0.28
Plymouth	8.20	8.31	8.33
Prior Lake	2.58	2.90	3.52
Ramsey	0.96	2.98	3.30
Richfield	3.99	4.17	4.35
Robbinsdale	1.45	1.53	1.50
Rogers	0.74	0.86	1.62
Rosemount	1.92	2.15	2.59
Roseville	4.47	4.50	4.54
Savage	2.55	3.11	3.38
Shakopee	4.13	4.83	5.07
Shoreview	2.96	2.96	2.91
Shorewood	0.78	0.76	0.78
South St. Paul	3.55	3.51	3.50
Spring Lake Park	0.68	0.67	0.67
Spring Park	0.32	0.34	0.34
St. Anthony	1.01	1.02	1.06
St. Bonifacius	0.23	0.22	0.23
St. Louis Park	6.47	6.62	6.70
St. Paul	30.63	31.23	31.46
St. Paul Park	0.61	0.65	0.69
Stillwater	2.53	2.68	2.57
Tonka Bay	0.23	0.23	0.23
Vadnais Heights	1.35	1.36	1.52
Victoria	0.83	1.55	2.25
Waconia	1.01	1.16	1.89
Wayzata	0.63	0.64	0.65
West St. Paul	2.43	2.48	2.49
White Bear Lake	2.91	2.91	2.86
White Bear Township	1.11	1.16	1.15
Willernie	0.05	0.05	0.05
Woodbury	5.16	6.34	7.16

APPENDIX P – HISTORIC SITES IN BURNSVILLE

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

Office of the State Archaeologist

Fort Snelling History Center
St. Paul, MN 55111-4061
Mark J. Dudzik, State Archaeologist (612) 725-2411; FAX (612) 725-2427

Minnesota Statutes 138.31-138.42 and 307.08

Established in 1963, the Office of the State Archaeologist (OSA) is charged with sponsoring, conducting and directing research into the prehistoric and historic archaeology of Minnesota; protecting and preserving archaeological sites and objects; disseminating archaeological information through the publication of reports and articles; identifying, authenticating and protecting human burial sites; reviewing and licensing archaeological fieldwork conducted within the state; and enforcing provisions of MN Statutes 138.31-138.42. The State Archaeologist is a professional archaeologist appointed by the Minnesota Historical Society.

Under MN Statutes 138.31-138.42, licensure through the OSA is required for field archaeology undertaken on all lands or waters owned, leased by or subject to the paramount right of the state or its subdivisions, as well as on lands impacted by publicly-funded development projects. Proposed projects are reviewed to assess the appropriateness of research methodology and to assist in identifying strategies for mitigating potential adverse effects to known cultural resources. Only professional archaeologists meeting the *Secretary of the Interior's Standards for Archaeology* (36 CFR Part 61) may be licensed to conduct such investigations in the state of Minnesota. A copy of the application form, including terms and conditions for licensure, can be obtained by contacting the above address.

Minnesota's "Private Cemeteries Act" (307.08) affords all human remains and burials older than 50 years, and located outside of platted, recorded or identified cemeteries, protection from unauthorized disturbance; this statute applies to burials on either public *or* private lands or waters. Authentication of burial sites is conducted under the sole auspices of the OSA per this statute. In the event that a burial is either known or suspected to be associated with American Indian peoples, the OSA works in concert with the Minnesota Indian Affairs Council (MIAC) to ensure the integrity of such burial sites. Guidelines for the protection of burials covered under this act have been developed jointly by the OSA and MIAC. The OSA maintains a database of identified burial sites in the state.

The OSA also maintains a database of the state's identified archaeological sites in collaboration with the Minnesota State Historic Preservation Office (SHPO). For further information on this database, please contact either the above number or the SHPO (see separate listing under "Minnesota Historical Society").

Post-it® Fax Note 7671	Date 03.25.97	# of pages ▶ 1
To DEB PETERSON	From M. DUDZIK	
Co./Dept. BURNSVILLE	Co. OSA	
Phone #	Phone #	
Fax # 895-4404	Fax #	

Architecture/History Inventory

Property Name	Address	Twp.	Range	Sec.	Quarters	USGS Map	Date Built	NHRP	CEF	DOE	Inventory Number
County: Dakota											
City/Township: Burnsville											
Connelly Farmhouse (razed)	1570 E. Mn. Hwy. 13	27	24	26	SE	Bloomington	1868				DK-BVC-001
Kennelly Farmstead	off Mn. Hwy. 13	27	24	25	NE-SE-SW	St. Paul SW					DK-BVC-002
Billy Goat Bridge (razed)	Burnsville Pkwy. & Judicial Rd. over RR	115	21	23	NW-NW-SW	Bloomington	1909				DK-BVC-003
Minneapolis St. Paul Rochester & Dubuque Depot	Co. Hwy. 5 at 155th St.	115	21	35	NE-NE-SE	Orchard Lake	1910	Y			DK-BVC-004
Mortenson House	15612 Crystal Lake Rd. E.	115	20	32	NE-SW-SW	Orchard Lake					DK-BVC-005
house	12013 Co. Rd. 11	27	24	36	NW-SW-NW	St. Paul SW	1860s-70s				DK-BVC-006
Buck Hill	off Interstate Hwy. 35	115	21	36	NW-NW-SE	Orchard Lake					DK-BVC-007

Archaeological Sites by Site Location

Site No.	Site Name	Field Number	Twp	Range	Sec.	Quarter Sections	Acres	Phase	Site Description	Tradition	Context	Reports
County: Dakota												
City/Twp.: Burnsville												
21DK0041	Pemtom/River Hills (1/2)	FS5, 21DK9005	27	24	24	SE-SW	0.0	3	CEM	A-1		
21DK0041	Pemtom/River Hills (2/2)	FS5, 21DK9005	27	24	25	NE-NW		3	CEM	A-1		
21DKx	Penichon's Village/Good Road's Village/Nine Mile Creek Village		27	24	28	SE, S-SW, NE-SW, SE-NE, SE-SW-NE		7	HD		ED-1	MULT-67-01, MULT-79-06, MULT-93-01
21DKah	Crystal Lake Mounds II		115	20	31	E-SE-NW, W-SW-NE		1	EW	W-1		
21DK0042	Crystal Lake Island Findspot	FS6, 21DK9006	115	20	31	SE-SW, NW-SW-SE, SW-NE-SW	0.1	1	SA	A-2, W-2		
21DKag	Butler Mounds/Crystal Lake Mounds I		115	20	32	SW-NW		1	EW	W-1		
21DKaa	Early Lake/Earley Lake/Farley Lake/Lake Early		115	21	25	NW-SE		2	EW	W-1		
21DK0039	Renner Findspot	FS2, 21DK9002	115	21	36	E-SE-NW, W-SW-NE	0.1	1	SA	PL-1		

City of
BURNSVILLE
100 Civic Center Parkway • Burnsville, Minnesota 55337-3817 (612) 895-4400

Memo To: Terry Schultz
From: Steve O'Malley
Date: March 25, 1997

Re: Indian Mounds around Earley Lake

I talked with Mark Dudzik this morning. Good news, the Indian Mounds around Earley Lake are not at the site of the current Rieland Home development. So no problem with our trail or their development.

I did not call the resident back, because the <u>bad news</u> is that the Indian Mounds seem to be at the site of another development that is currently in the application process (Rottland Homes on the Southeast shore of the lake). Deb Peterson & Mark Dudzik talked, and the developer will be notified. I expect that you'll call the resident and deal with her, since you were the first contact. Also, perhaps by the time you return from you vacation, we have more information for you to share with her.

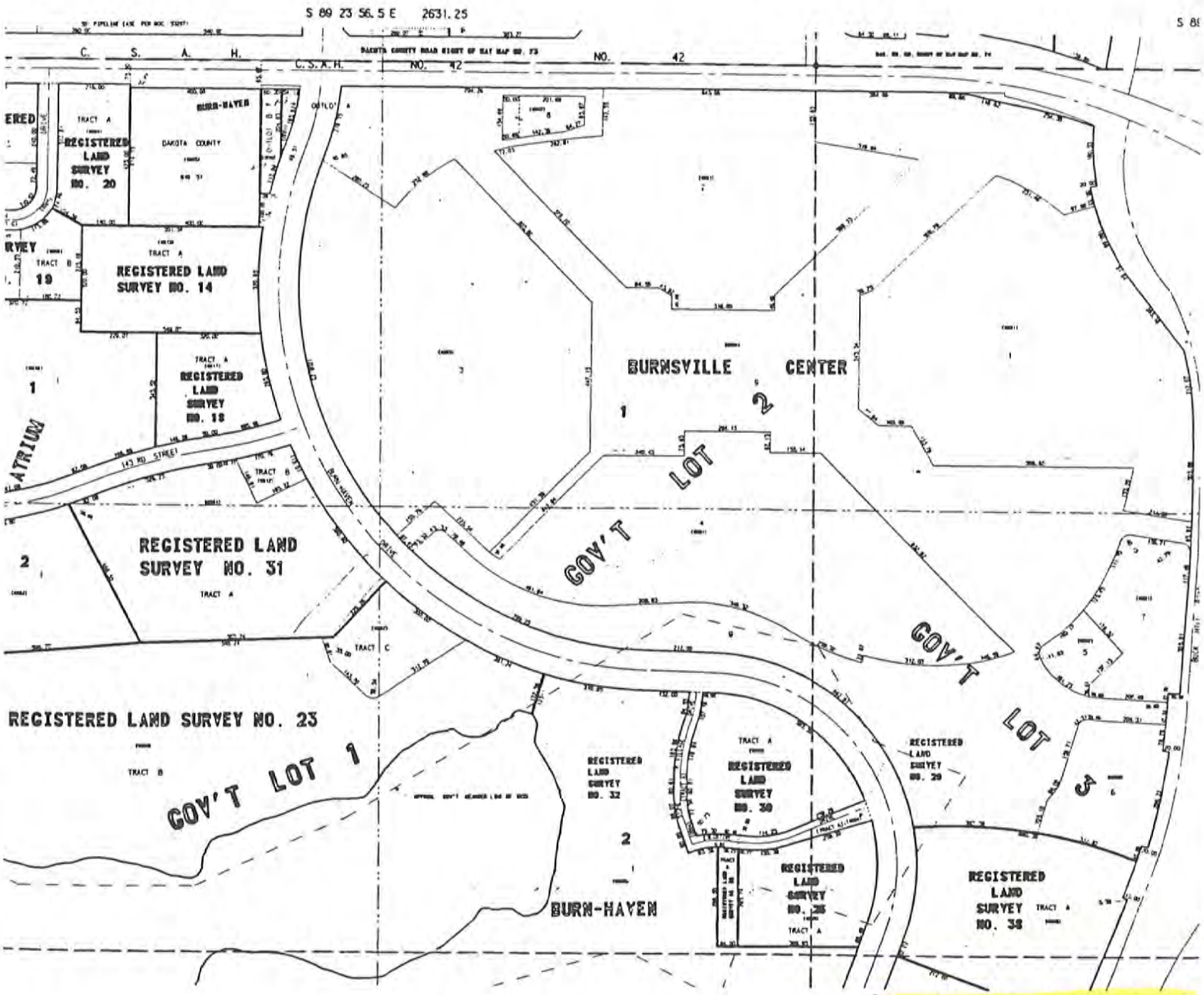
I've returned the attached information for your use.

I also let Roger Knudson know that this was a false alarm.

N1/2 SEC. 25, T. 115 N., R

CITY OF BURNSVILLE

614S



Per State Archeologist Indian burial grounds east of Burnhaven and West of 35 W.

615S

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ARE REFERENCED TO THE DAKOTA COUNTY SURVEY AND LAND INFORMATION OFFICE

© U S WEST Direct 19

Area Communities and Attractions

The Mdewakanton band of Dakota Sioux once lived in the Burnsville area. The village of Chief Black Dog was located on the isthmus between Black Dog Lake and the Minnesota River. Pioneers arrived in 1850 and began farming the land. Today Burnsville is the southern gateway to the Twin Cities of Minneapolis and Saint Paul. Burnsville and the southern communities offer the dual attraction of a suburban lifestyle and the amenities of a major metropolitan area.

A restored WW II Navy R4D plane at Flying Cloud Airport in Eden Prairie, northwest of Burnsville
Photo © Mike Whye

Area Communities

Apple Valley

Apple Valley was first settled in 1858 as Lebanon Township. On January 1, 1969, the area officially became known as the Village of Apple Valley. It was incorporated in 1974. Today Apple Valley has a population of more than 30,000.

The **Apple Valley Parks and Recreation Department** manages a year-round recreation program. Its various activities include swimming lessons, puppet shows, tours, and a summer playground program. The department also sponsors organized sports competitions.

Autumn leaves
Photo courtesy of the Minnesota Office of Tourism

The **Valley Athletic Association** sponsors a sports program for children, and the Apple Valley Hockey Association offers recreational leagues for children ages 6 to 16.

The **Apple Valley Outdoor Pool** is open from early June to late August. **Valleywood Municipal Golf Course**, an 18-hole public course, maintains cross-country ski trails during the winter.

Burnsville

Burnsville was founded near the site of Dakota Chief Black Dog's village, which was located on the isthmus between Black Dog Lake and the Minnesota River. The community was established during the mid-1800s on a ridge overlooking the Credit River. Today Burnsville has a population of more than 52,000.

Indian mounds are located near the Credit River, between Savage and the Minnesota River, and near Crystal and Early lakes. Burial grounds are located at River Hills North, Teepee Hill, and on the Tom Kennelly Farm.

The **Burnsville Parks Department** maintains acres of parkland with facilities for softball, baseball, soccer, football, tennis, canoeing, and picnicking.

Lac Lavon and **Crystal Beach** are popular for swimming, boating, and fishing. **Fisher Fields**, at Lac Lavon, hosts softball games. **Burnsville Ice Center**, in **Civic Center Park**, offers open skating, organized hockey games, and special events. **Birnamwood** and **Orchard Gardens** are public nine-hole golf courses.

Eagan

The land that Eagan now occupies once was inhabited by the Mdewakanton tribe of the Dakota, who established several villages near the Minnesota and Mississippi rivers. The first European settlers arrived in 1812.

When Minnesota achieved statehood in 1858, Eagan was part of Mendota Township. Two years later, the community was incorporated and named after Patrick Eagan, a member of the board of supervisors.

In 1860 the population of the community was 567. Today Eagan has 47,000 residents and is an industrial and commercial trade center for the Twin Cities.

Eagan is bordered by the Minnesota River, which provides a variety of recreation. The **Eagan Parks and Recreation Department** maintains several hundred acres of parkland with areas for bicycling, hiking, swimming, cross-country skiing, ice skating, and sledding. There are facilities for football, baseball, volleyball, tennis, and golf.

City-maintained bicycle trails include an east-west route that begins at Nichols Road (Shale Lane) and ends near Lexington Avenue. A second trail begins at Silver Bell at Hwy. 13 and connects Eagan to Bloomington.

Lebanon Hills Regional Park is popular for swimming, boating, fishing, hiking, horseback riding, and picnicking.

Farmington

Farmington is surrounded by rich Minnesota farmland. Characteristic of many of the southern-tier suburbs, Farmington combines a small-town atmosphere with the advantages of a metropolitan area.

The community was established in 1865, when the new railroad attracted farmers, lawyers, and merchants.

Chad Wohlers
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817

March 26, 1997

RE: Reported Burial Site 21-DK-aa / Proposed Village of Lake Earley Subdivision

Dear Chad,

As discussed, the above-proposed housing project lies to the west/northwest of the reported location of burial mound group 21-DK-aa (located in T115N/R21W, Section 25 NW¼/SE¼; see enclosed USGS topo map).

Note also that this area has been heavily impacted by previous construction and the mound group has, in all likelihood, been obliterated since it was first described ca. 1888 (see enclosure).

Do not hesitate to contact me if you require any additional information or clarification.

Sincerely,

Mark J. Dudzik
State Archaeologist

enc.

Fort Snelling History Center, St. Paul, MN 55111 Tel: (612) 725-2411; FAX: (612) 725-2427

1886 (C)

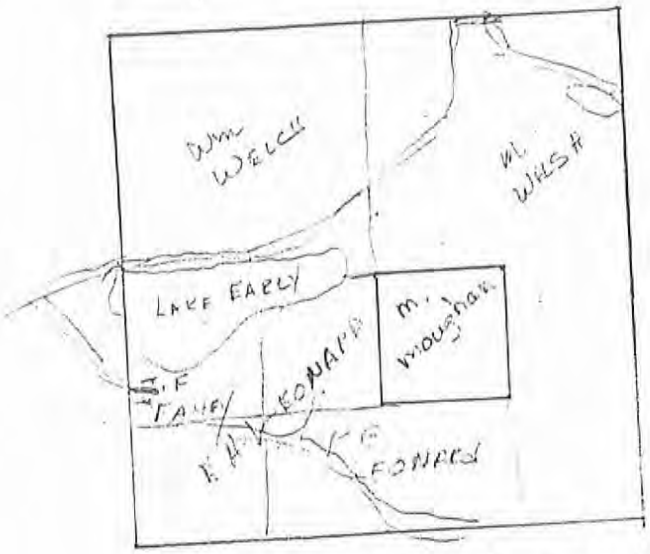
Artificial mounds.]

In sec. 35, Eureka, and sec. 2, in Greenvale, on either side of the town-line road, are seen about a dozen artificial mounds. These are about two and a half feet high, and overlook what may have been a lake, but now is a marsh. Near the south line of sec. 34, Eureka, are six other mounds, from one to two feet in hight. These are on low, moist land, while swells thirty or forty feet high rise in the vicinity.

Two mounds, rising two to four feet, are in the yard of Thomas Butler, north side of Crystal lake, N. W. ¼ of sec. 32, Burnsville. Four or five more, of about the same size, are near the centre of sec. 31, on the north bank of the lake, about fifty feet above the water.

According to Mr. Lewis Judd, there are seven mounds on Mrs. Monghan's land, N. W. ¼, S. E. ¼, sec. 25, Burnsville, overlooking the east end of lake Early. These are on a narrow strip of land between Early and Middle lakes, rather close together. He excavated one, and discovered what appeared to be four layers of ashes, and some indications of rotting bones, but nothing that could certainly be identified as such.

21. DK. AA



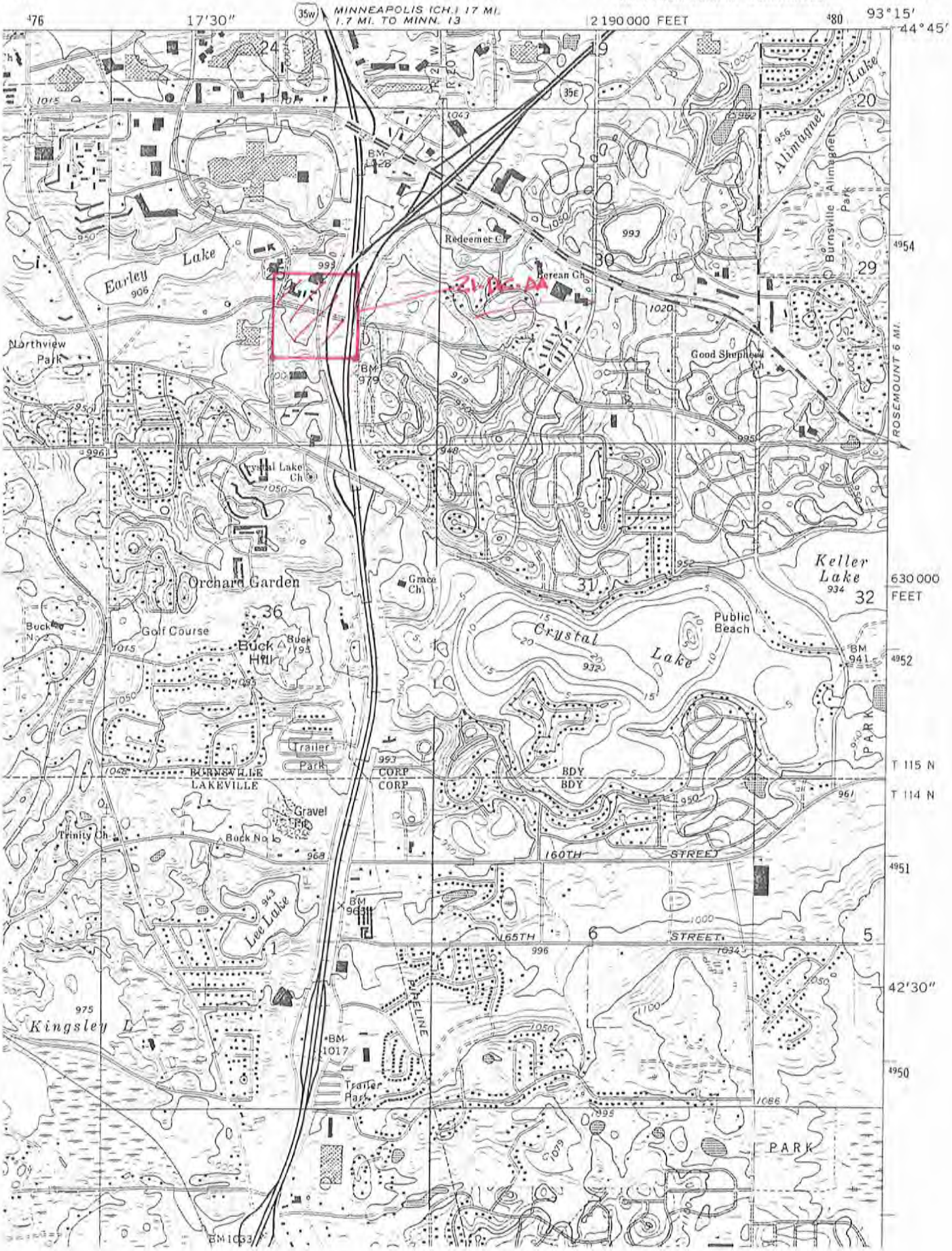
1896 PLATBOOK OF DK. Co.

By 1923 filled to LK ST. Inventory Co.

ORCHARD LAKE QUADRANGLE
MINNESOTA
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 PRIOR LAKE 15' QUADRANGLE

7373 I SW
(ST. PAUL SW)

ION



APPENDIX Q – AGENCY & PUBLIC COMMENTS

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

City of
BURNSVILLE
952-895-4400
100 Civic Center Parkway • Burnsville, Minnesota 55337-3817
www.burnsville.org

May 5, 2008

ATTN:

Thomas Lovelace, City Planner - Apple Valley
Glen Markegard, Planning & Economic Dev. Manager - Bloomington
Mike Ridley, City Planner - Eagan
Daryl Morey, Planning Director - Lakeville
Bryan Tucker, Planning Manager - Savage
Ben Kanninen, Superintendent - ISD191
Thomas E. Coughlin, Dir. Administrative Services– ISD 194
John Currie, Superintendent – ISD196
Curt Chattfield, Dakota County
Brad Davis, Planning Manager – Scott County
Chad Leqve, Metropolitan Airports Commission
Terry Schultz – C/O Black Dog Watershed Management Organization
Terry Schwalbe – Lower Mn River Watershed District
Laura Jester, Vermillion River JPO
Charlie Blair, Mn Valley National Wildlife Refuge
Del Miller – Three Rivers Park District
Beverly Miller – Minnesota Valley Transit Authority
Doug Day, Minnesota Pollution Control Agency
Janell Miersch, MnDNR
Lynn Clarkowski, MnDOT South Metro
Patrick Boylan, Senior Planner – Metropolitan Council

RE: Burnsville 2030 Comprehensive Plan Update – Agency Notification

The Metropolitan Land Planning Act requires communities in the seven county metropolitan area to submit proposed comprehensive plan updates to adjacent governments, affected special districts lying in whole or in part within the metropolitan area, and affected school districts for review and comment prior to Metropolitan Council review. Minnesota Statute § 473.858, Subd. 2, states that such notifications shall occur six months before the plan is sent to the Metropolitan Council for its review.

The Burnsville 2030 Comprehensive Plan Update is ready for distribution. Please review the proposed plan and provide any comments as soon as possible but no later than **November 6, 2008**. The draft 2030 Comprehensive Plan Update is also available on the city website at www.burnsville.org. If you have any questions or need additional information, please call me at 952-895-4446 or e-mail deb.garross@ci/burnsville.mn.us as soon as possible. If you have no comments, please check the box on the attached response form, sign, date, and return the form to me at your earliest convenience.

Thank you for your assistance.

Deb Garross
City Planner

Patrick Boylan, Senior Planner
Metropolitan Council
390 North Robert Street
St. Paul, MN 55101

Burnhaven Library
1101 W. County Road 42
Burnsville, MN 55337

MnPCA
Attn: Doug Day
520 Lafayette Road
St. Paul, MN 55155

Daryl Morey, Planning Director
City of Lakeville
20195 Holyoke Avenue
Lakeville, MN 55044

Glen Markegard, AICP
Planning and Econ. Dev. Division
City of Bloomington
1800 W. Old Shakopee Road
Bloomington, MN 55431-3027

Thomas Lovelace, City Planner
City of Apple Valley
7100 West 147th Street
Apple Valley, MN 55124

Bryan Tucker, Planning Manager
Planning Department
City of Savage
6000 McColl Drive
Savage, MN 55378

Mike Ridley, City Planner
City of Eagan
3830 Pilot Knob Road
Eagan, MN 55122

Curt Chattfield
Dakota County Office of Planning
Western Service Center
14955 Galaxie Avenue
Apple Valley, MN 55124-8579

Brad Davis, Planning Manager
Scott County Government Ctr. A101
200 Fourth Avenue West
Shakopee, MN 55379-1220

Ben Kanninen, Superintendent
School District 191
100 River Ridge Court
Burnsville, MN 55337-1613

Thomas E. Coughlin
Dir. Administrative Services
School District 194
8670 210th Street West
Lakeville, MN 55044

John Currie
Superintendent
Independent School District 196
14445 Diamond Path West
Rosemount, MN 55068-4199

Terry Schwalbe
Lower Mn. River Watershed District
1600 Bavaria Road
Chaska, MN 55318

Black Dog Water Mgmt. Org.
Terry Schultz, Administrator
100 Civic Center Parkway
Burnsville, MN 55337

Del Miller
Three Rivers Park District
3000 Xenium Lane N.
Plymouth, MN 55441

MN Valley National Wildlife Refuge
Attn: Charlie Blair
3815 American Blvd East
Bloomington, MN 55425

Beverly Miller
MVTA
100 East Highway 13
Burnsville, MN 55337

Vermillion River Watershed JPO
Laura Jester
Dakota County Soil & Water Con. Dist.
4100 220th St. W. Suite 102
Farmington , MN 55024

Janell Miersch
MnDNR – Waters Division
1200 Warner Road
St. Paul, MN 55106

MnDOT – Metro South District
Attn: Lynn Clarkowski
Watersedge Building
1500 West C.R. B2
Roseville, MN 55113-3174

Metropolitan Airports Commission
Chad Leqve, MAC Noise Manager
6040 28th Avenue South
Minneapolis, MN 55450

May 6, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the ISD 191 (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- [x] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

Name

Date 5/6/08

Business Manager
Title

May 6 , 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the Independent School District 196 has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.
(Agency Name)

(Check Applicable Box)

- [X] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary).

Name

May 6, 2008
Date

Superintendent
Title

FAXED

5-8 , 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the ISD No. 194 (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- ☐ This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- ☒ This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- ☐ This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary).

Name

Date 5-8-08

Dir. Admin Services
Title

SCOTT COUNTY COMMUNITY DEVELOPMENT
Planning Department
GOVERNMENT CENTER 114 · 200 FOURTH AVENUE WEST · SHAKOPEE, MN 55379-1220
(952) 496-8475 · Fax (952) 496-8496 · Web www.co.scott.mn.us

July 2, 2008

Deb Garross, City Planner
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817

RE: Response to Burnsville 2030 Comprehensive Plan Update

Dear Ms. Garross,

Thank you for the opportunity to review and comment on the City of Burnsville's Draft 2030 Comprehensive Plan Update. Staff members from the Scott County Community Development and Public Works Divisions have completed a review of the City's draft system plans. Our comments are based on adopted Scott County plans and policies as well as current program information.

Please note the following comments regarding trail and roadway connections between the City of Burnsville and Scott County:

- Scott County has identified a trail connection in Savage along the Minnesota River as a proposed future regional trail corridor connecting the MN Valley State Trail to the Big Rivers Regional Trail extension in Dakota County. This trail connection is identified in the County's 2030 Parks and Trails Plan as needing further study, but may warrant regional status. The City of Burnsville may want to acknowledge this trail connection in their future trail planning.

- Scott County CSAH 42 is identified as a Principal Arterial in both the Functional Classification and Future Functional Classification maps in the Scott County's 2030 Transportation Plan. The City's Functional Classification map (Figure 5, Page VIII-10) identifies Dakota County CSAH 42 as an A-Minor Arterial, but identifies CSAH 42 as a Principal Arterial throughout the rest of the document. Figure 5 needs to be corrected to acknowledge the road's true function.

If you have any questions about the County's review, please contact me at 952-496-8654 or bdavis@co.scott.mn.us.

Sincerely,

Brad Davis, AICP
Planning Manager

July 2nd, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the Scott County (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- ☐ This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- ☐ This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- ☒ This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

See attached letter

Name

Date 7/2/08

Planning Manager
Title

August 12, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the MN/DOT (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- [x] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

William Goff
Name

8/12/08
Date

Senior Planner
Title

8-26, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the Vermillion River Watershed JPO (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- [x] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

Name: Travis Thiel

Date: 8-26-08

Title: Watershed Specialist

11.6 , 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the CITY OF APPLE VALLEY has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.
(Agency Name)

(Check Applicable Box)

- [x] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

Name

Date 11.6.08

CITY PLANNER
Title

May 14, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the Dakota County (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- ☐ This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- ☑ This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- ☐ This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

Name

Date 5/14/2008

Acting Manager, Office of Planning
Title

Dakota
COUNTY

November 3, 2008

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817

Physical Development Division

Dakota County
Western Service Center
14955 Galaxie Avenue
Apple Valley, MN 55124-8579
952.891.7000
Fax 952.891.7031
www.dakotacounty.us

Environmental Mgmt. Department
Farmland & Natural Areas Program
Office of GIS
Parks Department
Office of Planning
Surveyor's Office
Transit Office
Transportation Department
Water Resources Office

Dear Ms. Garross:

Thank you for the opportunity to review the City of Burnsville's comprehensive plan.

Dakota County staff reviewed the City's plan through the lens of five guiding principles that shaped the Dakota County Comprehensive Plan:

Sustainability; Living in ways that do not place undue burdens on the environmental, economic or social systems of future generations;
Connectedness; Completeness of systems and recognition of the complexity of relationships among systems;
Collaboration; Working together with private and public entities to advance shared goals;
Economic Vitality; Having a well-trained, well-educated workforce and the infrastructure needed to compete in a global economy;
Growing and Nurturing People; Delivering services in such a manner that all residents are enabled to live healthy, fulfilling lives.

We are pleased to see the City included the spirit of these guiding principles throughout its comprehensive plan. Enclosed are our comments on the plan. Please contact Kurt Chatfield (kurt.chatfield@co.dakota.mn.us, 952.891.7022) if you have any questions or if we can supply any more information. We look forward to working with the City to achieve our shared objectives.

Sincerely,

Lynn Thompson

Lynn Thompson
Acting Physical Development Director

Enclosure

cc: Commissioner Michael E. Turner, Fifth District
Commissioner Paul J. Krause, Sixth District
Brandt Richardson, County Administrator
Patrick Boylan, Metropolitan Council Sector Representative

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AN EQUAL OPPORTUNITY EMPLOYER

Dakota County Staff Comments on Burnsville's Comprehensive Plan November 3, 2008

Burnsville and Dakota County Collaborative Visioning

In 2006, Dakota County gathered with representatives from Burnsville and other cities, townships, school districts, nonprofit agencies, state and regional agencies, businesses, the Metropolitan Council and County staff to explore the opportunities and threats Dakota County and its residents will face over the next 20 years.

This group, known as the Advisory Panel for the County's Comprehensive Plan, identified five guiding principles that shape a vision for the future and further define how City and County should address upcoming opportunities and threats. Burnsville's comprehensive plan addresses many of the issues raised in the visioning process and shares much of the vision the County developed for its plan. In particular, Burnsville's plan embraces the vision of a walkable, bikeable community. Heart of the City in this planning timeframe will bolster its role as a leading example of people-scale developments in a formerly suburban setting.

The Dakota County following staff comments on the City's plan are shaped by the visioning effort.

Road networks

- Page 4 — Item 6.b. identifies improvements to increase capacity and decrease congestion, among other goals. These improvements should also include access spacing and provisions for a local road network that provides access and complements regional roads.
- Page 7 — The 2006 daily traffic volumes map lacks a source reference. In comparing with the County's average annual daily traffic counts, the figures on the map appear reasonable.
- Page 10 —The following corrections should be made to the functional classification map:
  - TH 13, north of Cliff Road, is an "A minor" arterial, not a "principal arterial"
  - CSAH 32 (Cliff Road), east of TH 13, is a "principal arterial," not "A minor arterial"
  - CSAH 42 is a "principal arterial," not an "A minor arterial"
  - CSAH 46, bordering the City's southeast corner, is not shown. It should be classified as an "A-minor arterial."
- Page 16 —There are several differences between the existing Dakota County 2025 Transportation Plan and Burnsville's plan regarding existing congestion levels on County highways, as follows. (Please note these are based on 1999 traffic counts.)
  - CSAH 38, from Lac Lavon Drive to the east City limits, is listed as "approaching capacity" in the County plan.
  - CSAH 42, from the west City limits to CSAH 5, is listed as "over capacity" in the County plan.
  - CSAH 42, from CSAH 5 to Burnhaven Drive, is listed as "approaching capacity" in the County plan.
  - CSAH 42, from Portland Avenue to the east City limits, is listed as "approaching capacity" in the County plan.
  - CSAH 46, in southeast City corner, is listed as "approaching capacity" in the County plan.
  - These differences may be attributed to the differences in volume to capacity ratios.

	Dakota County ratio:	Burnsville ratio:
A	0.00 to 0.35	0.00 to 0.39
B	0.35 to 0.50	0.40 to 0.59
C	0.50 to 0.75	0.60 to 0.79
D	0.75 to 0.90	0.80 to 0.99
E	0.90 to 1.00	1.00 to 1.19
F	> 1.00	> 1.20

- County staff applaud the City's support of transitways along I-35W and Cedar Avenue as well as support for high speed rail to increase transit options for Burnsville residents.
- County staff would like to partner with the City on its future traffic demand management activities.
- County staff would like to discuss approaches to realize the City's plans and strategies for expanding transit services.

Land Use

- County staff encourages low-impact, transit-orientated and sustainably designed development projects that consider community, economic and environmental impacts. Through the plan's focus on the Heart of the City, Burnsville continues to lead the way in many of these fields.
- County staff look forward to continuing to work with the City of Burnsville in carrying out the plans to rebuild the Minnesota River Quadrant using sustainable (re)building practices.

Parks, Greenways and Trails

- Burnsville is reaching a fully developed state and has a nearly mature park and trail system. The Burnsville Park System and Trail System plans were prepared in 2000 and are included by reference in the 2030 Comprehensive Plan with updated language to reflect change over the past eight years. County staff referred to these past plans during review of Burnsville's Comprehensive Plan update and found them to be well-considered, providing clear direction for the maturation of Burnsville's parks and trails with an eye to remaining open space opportunities in the City.
- Burnsville's Comprehensive Plan update addresses recommendations from the Metropolitan Council System Statement related to regional parks and recreation facilities in Burnsville. County staff note:
    - Burnsville identifies an extension of the Big Rivers Regional Trail through the City's Minnesota Riverfront to the western City limits, noting that redevelopment of the quarry and landfill will include the trail and new City parks.
    - The regional trail connection between Murphy-Hanrehan and the Minnesota Riverfront is shown on City streets rather than in the rail corridor alignment shown in the Metropolitan Council System Statement. County staff welcome opportunities for future discussion and collaboration with City staff on feasible routes for this trail.
- Burnsville's plans and stewardship of its parks and trails systems exemplify the shared principles that emerged from countywide visioning: sustainability, connectedness, collaboration, economic vitality and growing and nurturing people. Connectedness within the City and into neighboring communities is a strength of Burnsville's extensive trail system.
- A new opportunity that emerged from the 2007 countywide visioning proposes greenways as an expansion of trail system planning. The south metro greenway concept is built on connecting existing parks and open space, natural areas and popular destinations through a green corridor system that predominantly is not aligned with the road network. County staff look forward to working with Burnsville on opportunities for greenways and greenway connections within the City. Although Burnsville is largely developed, there are opportunities for greenways using existing open space (school grounds, parks, ponding areas, natural areas) and with redevelopment, such as the Minnesota Riverfront.

Natural Resources and the Environment

Burnsville's embrace of sustainability as an overarching goal for the 2030 Comprehensive Plan complements the County's comprehensive planning. In addition to including sustainability as a general goal, the definition of sustainability is comprehensive and well-stated. As a local leader in environmentally minded government, Burnsville addresses climate change and the impacts of petroleum consumption in the 2030 Comprehensive Plan. In addition to identifying actions to reduce the impacts of climate change, it would be beneficial to also identify a measure of the collective actions (e.g. greenhouse gas inventory) in this section of the plan.

- The plan agrees with the Metropolitan Council's employment projections in 2010, 2020 and 2030 for Burnsville.
- The plan has a positive outlook related to sustainable development, mixed-use development and partnerships for job creation, along with opportunities in higher education, arts and culture.

Historic Preservation

Comments from the Dakota County Historical Society staff:

The draft comprehensive plan for Burnsville includes some historically interesting information and points to historic preservation standards employed elsewhere but avoids establishing any kind of commitment to historic preservation for Burnsville. Please note that local ordinances, statutes, codes, standards, etc. are necessary to ensure historic preservation because state and federal guidelines are voluntary and offer no substantive protection independent of local ordinances.

Historic preservation has a wide range of benefits for municipalities and should be encouraged by local governments whenever feasible. Some of the benefits of historic preservation include:

- Lower capital and maintenance costs for utilities due to in-fill development and reuse of existing structures for mixed housing/commercial uses
- Increased stability of property values
- Less construction waste
- Increased local construction spending
- Preservation of existing community space so large future investments to "re-create" lost spaces is not required.

Suggested Changes/Additions

- For legal/accuracy purposes the following words/phrases should be substituted:
  - Chapter II — Page 59 Replace "Sioux" with "Dakota"
  - Chapter II — Page 59 Replace "Native American" with "American Indian"
- Note that treaty language identifies tribes in Minnesota as "American Indians" and this is considered correct as opposed to "Native American," which is commonly used in some states.
- Chapter II — Page 63: Section 12.0 indicates that protection elements are addressed in Chapter VI. Dakota County Historical Society could not identify any protective language for historical or cultural heritage properties in Chapter VI. Burnsville's zoning ordinance also is referenced and again, no language that addresses historic preservation could be found.
- The comprehensive plan should include a statement of support for historic preservation of cultural heritage sites by private parties even if the City is not prepared to actively engage in preservation planning. That support could take the form of directing interested parties to existing resources at the local, state or federal level. At a minimum, the City of Burnsville is encouraged to gather sufficient information as to be a reactive resource for property owners, community members and developers interested in preservation.

Dakota County Historical Society staff suggest that Burnsville consider the following additional actions if the City wants to advance historic preservation:

- Establish a historic preservation commission
- Maintain support materials for property owners and developers, including information regarding national, state and local historical preservation agencies
- Study and develop community-appropriate policies and initiatives
- Revise the Comprehensive Plan to incorporate plans developed by the historic preservation commission (if formed)

Deb Garross

From: Peters, Scott [Scott.Peters@CO.DAKOTA.MN.US]
Sent: Friday, November 21, 2008 8:31 AM
To: Bud Osmundson
Cc: Chatfield, Kurt; Deb Garross; Jack Forslund
Subject: RE: County comments

Bud:

I don't think any of this is a big deal from our end. I was just stating what we identified in our plan. Also, we will be updating our full Transportation Plan in '09 with updated travel demand info, so our own results will be changing. I think Jack's response is fine. Thanks.

Scott Peters
Senior Planner
Dakota County Transportation Department
14955 Galaxie Avenue, Apple Valley, MN 55124
Phone: 952-891-7027

From: Bud Osmundson [mailto:bud.osmundson@ci.burnsville.mn.us]
Sent: Thursday, November 20, 2008 5:03 PM
To: Peters, Scott
Cc: Chatfield, Kurt; Deb Garross; Jack Forslund
Subject: FW: County comments

Scott: thanks for the phone call. I am out of the office on Friday. Could you please call Jack (or Jack please call Scott) with WSB regarding the comments about the capacities and get this squared away. I will be back in on Monday. Thanks!

Sincerely,

Bud Osmundson

Director of Public Works / City Engineer

952 - 895 - 4544

952 - 895 - 4404 FAX

From: Jack Forslund [mailto:jforslund@wsbeng.com]
Sent: Monday, November 17, 2008 3:22 PM
To: Bud Osmundson
Subject: RE: County comments

Bud - Below is my response to the County's concerns related to the existing levels of congestion analysis. I'll call you to discuss.

jack

Regarding the LOS on the County Roadways, I did a check to see what the discrepancies were and concluded the following for each of their bullet points (p. 16)

Because the County Report doesn't cite the capacity values they assume for the V/C calculations, it's hard to back-calculate their results. Therefore, I simply looked at the capacity values we used for determining the thresholds, i.e., for 4-lane minor arterial, an ADT up to 28,000 is Under Capacity, 28,001 to 34,000 is Approaching Capacity; 34,001 to 40,000 is At-Capacity, and anything over 40,000 is Over-Capacity. With that said, here are my reactions to their comments:

- CSAH 38 from Lac Lavon Drive to the east City limits is listed as "approaching capacity" in the County Plan

Jack's Note: The highest traffic count here is 20,000. For a 4-lane roadway the threshold that must be exceeded to be considered Approaching-Capacity is 28,000. Conclusion: No change.

- CSAH 42, from the west City limits to CSAH 5, is listed as "over capacity" in the County Plan

Jack's Note: The highest traffic count here is 39,900. For a 6-lane roadway the threshold that must be exceeded to be considered Over-Capacity is 57,000. Conclusion: No change. NOTE: They may have assumed 4-lanes, rather than 6, in which case the capacity is 38,000, which would result in Over-Capacity conditions. It should also be noted that their baseline conditions were the year 1999/2000, not 2006/2007 like the City's Plan.

- CSAH 42, from CSAH 5 to Burnhaven Drive, is listed as "approaching capacity" in the County Plan

Jack's Note: The traffic count here is 35,800. For a 6-lane roadway the threshold that must be exceeded to be considered Approaching-Capacity is 51,000. Conclusion: No change.

- CSAH 42, from Portland Avenue to the east City limits, is listed as "approaching capacity" in the County Plan

Jack's Note: We didn't list a traffic count for this specific segment. The County lists a count of 31,100. Even with this level of traffic, it would be operating under- capacity as it would need to exceed 40,000 vehicles (5-lane cross-section). Conclusion: No change.

- CSAH 46, in southeast City corner, is listed as "approaching capacity" in the County Plan

Jack's Note: The County lists a count here of 21,000. The roadway in this area is 5-lanes west of 161st Street, which has an Approaching-Capacity" threshold of 38,000. East of 161st it is a 4-lane divided roadway, which has an "Approaching-Capacity" threshold of 34,000. Conclusion: CSAH 46 in this location operates Under Capacity.

The bottom line is that congestion analysis of existing conditions as presented in the City's Comp. Plan is correct.

Jack Forslund, AICP | Senior Project Manager WSB & Associates, Inc. | ACEC 2008 Firm of the Year
701 Xenia Ave. S., Suite 300 | Minneapolis, MN 55416
Direct: 763-287-8532 | Fax: 763-541-1700 | www.wsbeng.com <http://www.wsbeng.com/>

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From: Bud Osmundson [mailto:bud.osmundson@ci.burnsville.mn.us]
Sent: Thursday, November 13, 2008 11:07 AM
To: Jack Forslund
Subject: County comments

Jack: Please read the last attachment "County comments" and the second attachment "re: comp plan" email and give me a call to discuss. Thanks! The Dakota County Comp plan draft is attached for your reference also.

Sincerely,

Bud Osmundson

Director of Public Works / City Engineer

952 - 895 - 4544

952 - 895 - 4404 FAX

ThreeRivers
PARK DISTRICT

November 4, 2008

Three Rivers Park District Board of Commissioners

Sara Wyatt
District 1

Marilynn Corcoran,
Vice Chair
District 2

Mark Haggerty
District 3

Dale Woodbeck
District 4

Rosemary Franzese
District 5

Larry Blackstad, Chair
Appointed

Joan Peters,
Appointed

Cris Gears
Superintendent

Ms. Deb Garross, City Planner
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337

RE: City of Burnsville 2008 Draft Comprehensive Plan Update

Dear Ms. Garross:

Thank you for the opportunity to comment on the 2008 Draft Comprehensive Plan Update. Three Rivers Park District (Park District) currently owns and operates Murphy-Hanrehan Park Reserve which partially resides within the City of Bursville (City).

Park District staff prepared the following comments for consideration in the City's Comprehensive Plan.

General Land Use Plan

In general, the Park District is not an advocate or opponent of the proposed land use plan; however, the Park District is an advocate for protecting natural resources especially in terms of protecting and maintaining water quality, native and intact plant communities, and unique and rare wildlife. Therefore, the Park District supports land uses which conserve, protect, and enhance the region's vital natural resources.

In addition, and in accordance with Park District policy, the Park District will oppose any proposed land use that will result in the degradation of water quality in water bodies within or continuous to its holdings below the 1989 levels. Impact to water bodies within and continuous to Park District holdings cannot be determined from the proposed land use plan; therefore, the Park District requests the right to review and comment on development plans for properties which may impact water bodies within and continuous to Park District holdings.

Natural Open Space Buffer

The Natural Resource Environment Plan includes a policy to establish buffer standards (minimum 50') for lands located adjacent to natural open space such as Murphy-Hanrehan Park Reserve (page VI-2). This policy, when implemented, will aid the City in the protection and integrity of critical natural resources for future generations.

Administrative Center, 3000 Xenium Lane North, Plymouth, MN 55441-1299
Information 763.559.9000 • TTY 763.559.6719 • Fax 763.559.3287 • www.ThreeRiversParkDistrict.org

Proposed Regional Trails
Murphy-Hanrehan Park Reserve protects one of the last large mature mesic oak forests in the metropolitan area and the second largest prairie within the Park District's regional parks and trail system. To preserve and protect this natural resource jewel, the park reserve is planned to offer a diversity of recreational opportunities appropriate to the semiprimitive nature of this park reserve. Regional trails can be accommodated without significant impact to the natural resource or semiprimitive character of the park reserve if located on the periphery.

The regional trails and parks map within and adjacent to the City illustrates a regional trail search corridor bisecting the central core of the park reserve. Although the graphic diagrams a regional trail search corridor and not a regional trail alignment, it is important to recognize that regional trails will be restricted to the periphery of Murphy-Hanrehan Park Reserve.

The location of the proposed regional trail is accurately depicted on the periphery of the park reserve as existing or proposed trails on the City of Burnsville Park System Map (page A-9). However, the City may consider depicting the proposed regional trails as a separate classification rather than combining all trails into the same classification.

In addition, the regional trail implementing agency(ies) shall consider how the proposed regional trail will provide both opportunity and challenge to the recreational amenities as well as the natural resources within the park reserve. The Park District requests the right to participate in and comment on the planning and development of the proposed regional trail within and/or adjacent to Murphy-Hanrehan Park Reserve to minimize potential impacts to property, natural resources, and recreational amenities.

Development of the regional trail within Murphy-Hanrehan Park Reserve will require approval by the Park District Board of Commissioners prior to development.

Joint Powers Agreement with Scott County
The City Services & Facilities Plan references a joint powers agreement between the Park District and Scott County (pages IX-24 and A-65). The Park District and Scott County no longer operate under a joint powers agreement and instead operate under an annual Memorandum of Understanding. Under the annual Memorandum of Understanding, the Park District owns and provides recreation services for Murphy-Hanrehan Park Reserve and Scott County is responsibility for development, operation, and maintenance of all other existing and future regional parks and trails within the County.

Please update the reference to the joint powers agreement between the Park District and Scott County to reflect the current annual Memorandum of Understanding.

Water Resources
The 2008 Draft Comprehensive Plan Update summarizes the Local Surface Water Management Plan (LSWMP) and addresses the three most important components: statement of detailed numeric water quality goals; discussion of whether the goals are currently being achieved; and discussion of the actions needed to be taken to achieve and/or maintain compliance with the water resource goals.

However, the LSWMP was completed in 2002 and thus, does not reflect recent changes in water quality regulation set fourth by the Minnesota Pollution Control Agency, specifically the Total Maximum Daily Load program and the surface water quality numeric standards.

Please include in the 2008 Draft Comprehensive Plan Update a summary of how the LSWMP will be updated to address the recent changes in water quality regulation.

Thank you for the opportunity to review and comment on the 2008 Draft Comprehensive Plan Update. Please continue to include the Park District in future comprehensive plan meetings and correspondences as they relate to the items outlined above.

Sincerely,

Kelly Grissman, Planner
Department of Planning and Development

J:\DEVELOPMENT STAFF\Kelly\Comprehensive Plan Review\Burnsville\11-04-08 Burnsville Comp Plan.doc

Nov. 6 , 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the MnDNR, Waters (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- ☐ This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- ☐ This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- ☒ This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

please see email dated 11/7/08

Janell Miersch
Name

11/6/08
Date

Area Hydrologist, DNR
Title

Deb Garross

From: Janell Miersch [Janell.Miersch@dnr.state.mn.us]
Sent: Friday, November 07, 2008 11:23 AM
To: Deb Garross
Subject: Burnsville 2030 Comp Plan
Attachments: Burnsville.pdf

Hi Deb,

First of all I would like to apologize about the timing of my comments. I fully intended to review and reply much sooner. As a DNR Waters employee, I concentrated on issues in Burnsville's draft 2030 Comprehensive Plan that related to water use and water resources. These are my comments/observations:

Chapter VI Natural Resources - I was pleased to see the reference to the update of FEMA maps that is currently underway (section 3.7). Burnsville also alluded to the shoreland ordinance revisions by the DNR. I have no other comments on this chapter of the Plan.

Chapter X City Services & Facilities Plan - I had received Burnsville's Water Emergency and Conservation Plan (called WSP or Water Supply Plan by the DNR) from Linda Mullen earlier this year, so I took the opportunity to compare that plan to sections 13 & 14 of the Comp Plan 2030. Almost every figure matched with the WSP numbers for prior use and projected demands. The exception to this was found in both Figure 8 (page 35) and Figure 21 (page 45). In the column labeled "average daily use" for the year 2006, there is a discrepancy between the WSP (listed 7.99 MGD) and the Plan (listed 8,155,424 GPD). This is a significant difference of approximately 170,000 GPD. Please double check your figures and let me know which one is correct. Thank you.
Although we have not completed the hydrogeological review of the WSP, we immediately recognized that per capita use greatly exceeds the average residential 75 GPCD used by Met Council in the Twin Cites Metropolitan Area. The City will need to take measures to conserve water before the WSP will be approved and DNR Appropriation Permit #1974-5014 can be amended. I will be addressing this issue with Linda Mullen this winter.

Attached is the official response form that was attached to the CD I had received in May.

Thank you for the opportunity to review.

Respectfully,
Janell Miersch

Janell Miersch, South Metro Area Hydrologist

Metro DNR Waters
1200 Warner Rd
St. Paul MN 55106
Direct: 651-259-5776
Main Metro Waters: 651-259-5845
Fax: 651-772-7977

Dan Callahan e-mail 4/24/08

From: Bridget Dalrymple
Sent: Tuesday, April 29, 2008 4:04 PM
To: Deb Garross
Subject: FW: Can I put in my two cents on comp plan?
Deb,
Here is the email from Dan that should be submitted as public comment. Also, let me know if you would like me to give him a more detailed response to his inquiry based on the comp plan draft thus far.

Thanks. Bridget

From: may.fly@comcast.net [mailto:may.fly@comcast.net]
Sent: Thursday, April 24, 2008 1:37 PM
To: Bridget Dalrymple
Subject: Can I put in my two cents on comp plan?

Bridget,
I'm taking lunch to do this, so I don't feel guilty. I know the comp plan meeting is tonight, but I don't feel real comfortable going to public hearings, since I'm an employee. But I would like to put my two cents in as a Burnsville resident on the comp plan.
Southwest Burnsville (where I live) was a community that sprang up in the 1910s and 1920s, and incorporated as the Village of Orchard Gardens. It was the most densely populated area outside of downtown Savage and downtown Lakeville. The village ended up going bankrupt just before the Great Depression, dissolvied the village council, and got split across the middle by the townships of Burnsville and Lakeville. I bought the house my Mom and Dad built there in 1967, that I grew up in. I've had the same neighbors for 41 years!
If you look at an aerial photo zoomed out, you see this distinctive roundish wooded landscape that encompasses Orchard Gardens, along with Murphy Hanrehan Regional Park and Cam Ram park.
Even though the area is within the MUSA line, Lakeville's comp plan says it is logical to preserve their half of Orchard Gardens as 'permanent rural', respecting its historic development pattern that serves to buffer and extend wildlife habitat beyond Murphy Hanrehan---and the economic benefits of not having to extend and install expensive utilities. Lakeville's city staff reasoning is valid and valuable in reconsidering the drive to urban development on our half of Orchard Gardens. The city of Sunfish Lake next to Eagan is also rural, and their comp plan showing it as such and staying that way, has been approved by the Met Coucil.
All I'm saying is, 'What does Lakeville and Sunfish Lake know, that Burnsville doesn't?"
Here's a link to their draft comp plan so you can see what Lakeville has been doing in their last comp plan, and going forward with their new draft: http://www.ci.lakeville.mn.us/index.php?option=com_content&task=view&id=474&Itemid=841
I know they already sent us (Burnsville) a copy for comment, so you can probably just gop grab it.
While past Burnsville comp plans contain an intellectual exercise of hypothetically splitting up Orchard Gardens lots into urban sections, it was merely a drawing on paper, hypothetically dividing the plat map into lots. It wasn't even thought serious enough analyze the actual natural impediments to development, such as steep slopes, wet areas or high quality woodlands identified as the highest ecological priority areas by the county natural resources experts.
I don't want past wishful thinking to become a foundation justifying it as inevitable urban development, simply because it's within the MUSA line. So is Lakeville. So is Sunfish Lake, up here bordering Eagan, and it too rejects the notion of urbanization justified by MUSA overlays.
Lakeville's decision reflects compelling, real word analysis of the benefits of keeping this area intact. Their reasoning deserves serious examination and consideration for our vision, so we can work in partnership instead of conflict with our adjoining city's worthy goals. They have just as many developers breathing down their necks (and in at least one case, the same one, Paul Polvony) as

Burnsville has, in developer's dreams of assembling land and getting rid of the existing homes, as they did in Foresty Park Heights.
Plus the environmental losses make me cringe. We had to cut down trees and dig a stormwater pond in Judicial Park, a preservation area, to mitigate the stormwater negative effects of development triggered by the project. All so we can ease some of the negative impact to a wetland, that is also in the same park.
OK, I'm done. I could always give you and Deb and Ryan (and Craig and Deb?) the background info on all this. I and my neighbors talked with Greg Konat back in 1995.
See ya!
Dan Callahan

Brian Gryniewski
Park/Trail connections to
Murphy Hunrehan Park Preserve

Deb Garross

From: Deb Garross
Sent: Wednesday, August 08, 2007 10:37 AM
To: Randy Oppelt
Subject: FW: Phone Call

Hi Randy,

Can you contact Brian at the number below to advise him about trails in the area of Forest Park Heights. I think you have had some meetings with the Three Rivers Park District about this.

Thanks!

Deb

From: Jenni Faulkner
Sent: Wednesday, August 08, 2007 7:25 AM
To: Deb Garross
Subject: Phone Call

Deb,

I spoke with Brian Gryniewski yesterday- he had some thoughtful comment on the Comp Plan. Can you call him about Forest Park Heights? He wants to know if there is a trail connection to Murphy Henrehan Park via that subdivision. (952) 995-0102. I will forward his Comp Plan comments to you shortly.

Thanks

Jenni Faulkner
Community Development Director
City of Burnsville
(952) 895-4467

Bill Bergen - Civic Center Campus Land Use

Deb Garross

From: Chris Slania
Sent: Monday, September 08, 2008 3:59 PM
To: Deb Garross
Cc: Jenni Faulkner
Subject: FW: Civic Center Park Zoning concern

FYI

From: Bill Bergen [mailto:billlb@usfamily.net]
Sent: Monday, September 08, 2008 2:42 PM
To: Chris Slania
Cc: Tom Grendzinski; Bruce Falkum; John Toomire; Sean Lutz; Jeff Ayers; Dave Thibos
Subject: Re: Civic Center Park Zoning concern

Thanks Chris. The problem that I have with definition of Park District (a zoning district designation for public parks that includes all the uses currently and expected to occur in the parks as well as the type of fields and amenities at the parks), is that it is so broad that the woods are not protected. A rezoning to Conservancy District would protect the woods.

----- Original Message -----
From: Chris Slania
To: Bill Bergen
Sent: Monday, September 08, 2008 2:17 PM
Subject: RE: Civic Center Park Zoning concern

Hi Bill,

Thank you for the e-mail on this. I needed to follow-up with the other Planner in the office, Deb Garross, as she is the lead on the Comp Plan update. The update is in process although we are not making any changes to the draft Comp Plan until after the 6-month agency review period ends which is November 6th. Our current recommendation to the Comp Plan Advisory Panel and Planning Commission would be to retain the "Park" land use category for the area between City Hall and Gideon Pond down to 134th Street. Based on the limited amount of land in this area and the existing adjacent development I don't expect we would recommend going to a Conservancy District but it is something the Advisory Panel and Planning Commission can review.

Deb has added your e-mail to the list of public comments received on the Comp Plan update. Staff will be presenting these comments to the Advisory Panel and Commission at a worksession on Sept. 22nd. So you are aware the tentative meetings dates for the Comp Plan update are as follows:

Informational Open House - October 23 held from 6:30 – 8:30 p.m.
Planning Commission Public Hearing – November 10 starting at 7:00 p.m.
City Council meeting – December 2 starting at 7:00 p.m.

City of BURNSVILLE
Chris Slania | Planner
100 Civic Center Parkway | Burnsville, MN 55337
952-895-4451 | 952-895-4453 (fax) www.burnsville.org

From: Bill Bergen [mailto:billlb@usfamily.net]
Sent: Tuesday, September 02, 2008 1:43 PM
To: Chris Slania
Subject: Re: Civic Center Park Zoning concern

Hi Chris

I see that the 2030 Comprehensive Plan Update is supposed to be in the process of being updated. At the Burnsville website, all I find is the old plan with no updates. Is the City Planning Commission going to recommend that Figure 22 (2030 Future Land Use Guide Plan Map), pII-32, which currently indicates a zoning of Civic Center Park woods as Business/Retail/Office to a zoning of Conservancy District? Conservancy District is the only definition that fits the woods: steep slopes, valuable vegetation (Jack-in-the Pulpits), wildlife habitat (hawks, eagles,owls, deer, turkeys, coyote, fox, etc.)

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City of
BURNSVILLE
952-895-4400
100 Civic Center Parkway • Burnsville, Minnesota 55337-3817
www.burnsville.org

June 19, 2008

To Concerned Citizens within 350 feet of Civic Center Campus

Dear Property Owners,

This letter is a follow-up to a neighborhood meeting regarding the City's study of commercial and industrial performance standards. The meetings are being facilitated by the City's planning consultant, Bonestroo. There were concerns voiced at the June 11th neighborhood meeting about potential development or selling off of land within the Civic Center Campus area. **The City has no intention of selling or allowing private development on any portion of the campus area.**

The current zoning on the property is B-1 PUD (Office Business Planned Unit Development). The property is guided a P (Park) in the current Comprehensive Land Use Plan. State Statutes require the City to have consistency between the Comprehensive Land Use Plan (long term vision document for the City) and the Zoning Ordinance (implementing tool of the Comprehensive Plan with laws and ordinances. As they exist today, the two designations are inconsistent.

After hearing concerns from residents about the future of the Civic Center Campus (wanting to stay as it is) and knowing the City Council has no intention to make any changes to the great public space that Civic Center Campus provides, the City will take the time to further review how to ensure the Comprehensive Plan and Zoning District for the area are consistent while incorporating existing uses (office, recreation, park) and providing the property designations that would not allow for future private commercial development.

As the City is currently reviewing the draft of the 2030 Comprehensive Plan this is a good opportunity to make changes to our land use maps and zoning designation maps to assure residents of the City's intent on maintaining Civic Center Campus area as it is. The draft 2030 Comprehensive Plan is scheduled for a public open house on October 23, 2008 and a public hearing before the Planning Commission on November 10, 2008. Changes can be made to the plan up until Council approval which is scheduled for December 2, 2008 when the draft plan is adopted by the City Council. In addition, citizens can comment on the plan by visiting www.burnsville.org. or my contacting myself.

Certainly let me know if you have any questions. I can be reached at (952) 895-4467 or jenni.faulkner@ci.burnsville.mn.us

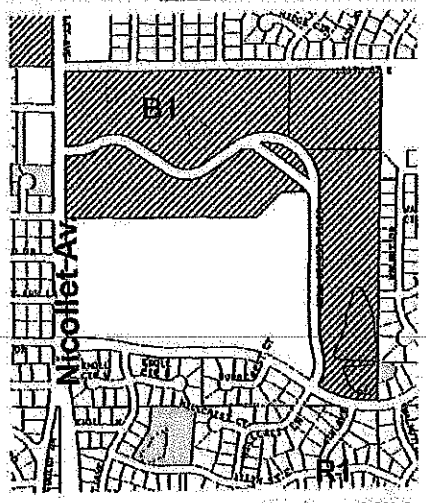
Regards,

Jenni Faulkner

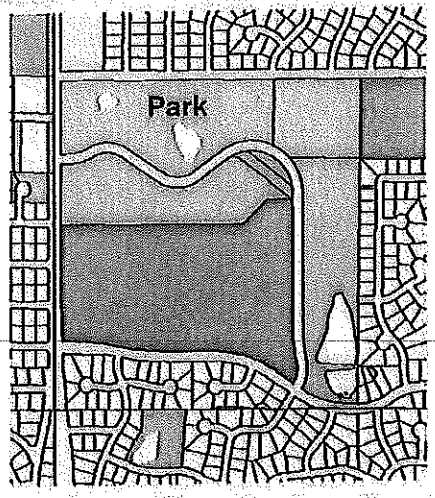
Jenni Faulkner
Community Development Director

Cc: City Council
Craig Ebeling, City Manager
John Shardlow, Bonestroo

Civic Center Campus Area



Current Zoning (B-1, PUD)



Current Comp Plan Designation (Park)

June 19, 2008

Dan Callahan e-mail 9/14/08

City of BURNSVILLE

deb.garross@ci.burnsville.mn.us

From: Dan [mailto:may.fly@comcast.net]
Sent: Sunday, September 14, 2008 10:29 PM
To: Deb Garross
Subject: Comp plan

Hi Deb.

I've been talking with my neighbors about changing our zoning to be consistent with the adjoining permanent rural zoning in Lakeville, and to mirror the other successful permanent rural designations that brought about million-dollar homes in Sunfish Lake and North Oaks. This is right in line with the new suggestion (item 21) in the 'neighborhood goals' portion of the draft comp plan:

21. Support the development of "executive" single family housing to enhance housing opportunities in the community. *(This is a common comment received from the business community – there needs to be housing available for corporate leaders to attract larger corporations to locate in Burnsville)*

Now, how can we go about getting the comp plan updated to bring about the clarification of permanent rural status, that solidifies our vision and goals for our area, protects homeowners investments, and preserves conditions that support the city's overall goals?. We want to get rid of the confusion and poor outcomes from Forest Park Heights situation.

The comp plan timeline has the Planning Commission and Advisory Panel set to review agency responses to the draft plan on Sept. 22. Is that still in the plan? Do they review them separately as individuals? Or do you make a joint presentation to them? How can we get copies of the responses to the draft? How can we make a presentation to the Advisory Panel, the Planning Commission, and the city council, during a work session? Can we set up our own presentation at the open house??

I know we discussed back in May about the open house on October 23. But it seems like the comp plan will be well-hardened by then, especially following this last review of agency responses to the draft.

I worry we (or anyone) who wants to make a substantial improvement to the comp plan will run into a buzz saw of 'you should have been here last Spring, it's too late now.'

We're still working on how to best present the neighborhood's vision for the 21st Century, so we can give city officials better information about the pros and cons of development scenarios –especially in light of the Forest Park Heights outcomes. There are some real lessons to be learned from that situation.

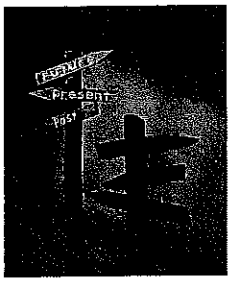
Let me know what our next step should be. When would be the best time for us to meet with you and Ryan (and anybody else you think should be there) to talk about this? We'd also like to make a presentation to the advisory panel or planning commission, and certainly to the city council – perhaps at a work session, as I mentioned.

Thanks again for all your help, Deb.

Dan Callahan

Burnsville has, in developer's dreams of assembling land and getting rid of the existing homes, as they did in Foresty Park Heights.
Plus the environmental losses make me cringe. We had to cut down trees and dig a stormwater pond in Judicial Park, a preservation area, to mitigate the stormwater negative effects of development triggered by the project. All so we can ease some of the negative impact to a wetland, that is also in the same park.
OK, I'm done. I could always give you and Deb and Ryan (and Craig and Deb?) the background info on all this. I and my neighbors talked with Greg Konat back in 1995.
See ya!
Dan Callahan

PUBLIC FEEDBACK FORM



CITY OF BURNSVILLE 2030 COMPREHENSIVE PLAN UPDATE

OPEN HOUSE FOR DRAFT PLAN REVIEW

October 23, 2008

Please use this form to write down any comments, suggestions, changes or ideas you have for the 2030 Comprehensive Plan Update. You may leave the form at the meeting or fax, e-mail or mail the form back to the City prior to October 31, 2008 so your comments may be forwarded to the Planning Commission and City Council for consideration.

I would just like to commend each and every persin involved in the creation of the Comprehensive plan for the City of Burnsville. As a resident who takes alot of pride in the community I greatly appreciate all of the effort and guidance that everyone shows. I am excited for the future of this great city!

City of Burnsville Planning Department ▪ Attn: Deb Garross ▪ 100 Civic Center Parkway ▪ Burnsville, MN 55372-3817 ▪ Fax (952) 895-4453 ▪ Phone (952) 895-4446 ▪ deb.garross@ci.burnsville.mn.us

Deb Garross

From: cttomr@frontiernet.net
Sent: Friday, November 07, 2008 2:24 PM
To: Deb Garross
Subject: Comments on Plan Update

Ms. Garross:
I submit the following comments:
1. Because of long term changes in national economic conditions, many assumptions and much data will need to be changed.
2. A much higher human capital priority (and payoff) than youth and the elderly are children 0-5 and their young parents.
3. Plans need execution strategies and priorities. In our 32 years in Burnsville, we have seen great plans and poor execution. The City does not have the staff resources to execute this update. That may indicate that the governing body and management are not serious about the plan.
4. The Introduction talks about possible new parks. The City cannot maintain most existing parks.
5. The natural environment section is technically thorough, but the City does poorly with a relatively simple dimension: the visual/aesthetic qualities of the environment.
6. Was the statement on weed control on public property humorous? The City does not control weeds around the perimeter (such as gutters) of Greenhaven Park. (I do that) 7. Re neighborhoods and infill and construction site pollution/degradation, we are reminded that the City, during the past two years has created, with infill, a visual disaster in the Greenhaven neighborhood.
8.Re sign control, hopefully control will eliminate city signs advertising businesses and service clubs that pick up trash (the signs offset the good works).
9. Re more retail zoned land, the city already has far more than it needs thank you.
10. Re Burnsville Center development issues, the the auto sales parcels to the south are still a blight upon the Greenhaven neghborhood.
Thankyou,
CT Rice, 15253 Greenhaven Way

Deb Garross

From: Dr David Geary [drgeary@valleychiroassoc.com]
Sent: Friday, November 07, 2008 9:11 AM
To: Deb Garross
Subject: FW: Southwest Burnsville proposed changes to the new Comprehensive Plan

-----Original Message-----
From: Dr David Geary [mailto:drgeary@valleychiroassoc.com]
Sent: Thursday, October 30, 2008 2:26 PM
To: 'deb.garross@ci.burnsville.nm.us'
Subject: Southwest Burnsville proposed changes to the new Comprehensive Plan

Hi Deb,
Thanks for your time and interest in the issue that I raised concerning southwest Burnsville and the potential for urbanization. This is an unwanted scenario expressed by the homeowners.
We are in the process of collecting signatures to reflect these wishes.
Thank you again for your expressed interest in this unique part of Burnsville.

Kind Regards,

David Geary

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail - and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Here's why the city should be in favor of the change:

1.. A stated objective of the new draft plan is that the business community wants the city to pursue ways to attract top level corporate executives to live in Burnsville. The thinking is that if the executives build here, they might bring their companies here, along with great jobs. Southwest Burnsville is the only land available to attract the same kind of million-dollar homes as Sunfish Lake and North Oaks. Both of those cities consist of large rural residential estates like ours. Burnsville is squandering this opportunity by allowing the land to be chopped up into little one acre lots.

2. Preserving large lots preserves the benefits Southwest Burnsville now provides the rest of the city:

a. The current woods, wetlands and fields on private land extend the wildlife habitat beyond the borders of Murphy Hanrehan Regional Park. The park's habitat is well buffered now. Applying a cookie cutter approach to bring about the same development we now see in Forest Park Heights would be a tragedy. The slow turnover of land, often divided only for family members, means the commitment will continue among landowners to preserve and restore habitat. Now landowners are controlling invasive species, such as buckthorn and garlic mustard, and planting trees, shrubs and native plants. This increases the public benefits at no cost to the public.

b. Sustainable rural development saves the city taxpayers from paying to install costly urban infrastructure. The city has already unnecessarily spent hundreds of thousands of dollars of taxpayer money to put in way oversized sewer and water pipes to serve Forest Park Heights, and the rest of Southwest Burnsville. It's amazing that such expensive infrastructure decisions have been based on the hypothetical, exaggerated, wildly unrealistic diagram of one acre lots overlaid all the land in Southwest Burnsville. It doesn't take into account any of the wetland preservation requirements from the state's Wetland Conservation Act, which didn't exist until the year after this diagram was made. The diagram didn't take into account the intricately folded hills and valleys, which limit development. And it didn't take into account the loss of available land expansion of roads to fill the road right of way, as we saw happen on Valley View Drive. And it didn't take into account areas that would serve as stormwater detention ponds to reduce stormwater impacts to those wetlands.

c. Current landowners subsidize the city watershed infrastrure with our fees, yet require no city taxpayer expenditures to treat stormwater runoff here and cause no runoff to current city stormwater treatment zones.

d. The current rural residential development acts as a giant rain garden, promoting groundwater infiltration that recharges the aquifers from which the city wells draw everyone else's drinking water- all while not using any of that city water. Barr Engineering studies prove our owner-maintained wells cause no impact on the aquifers that feed sensitive natural resources like the Black Dog Fens.

3. It is amazing the city has used the one acre diagram as the guide

for development in southwest Burnsville for so long, considering out outmoded the development scenarios were in 1990

a. The plan doesn't take into account current standards limiting development on steep slopes.

b. The plan doesn't take into account current tree protection standards.

c. The plan doesn't take into account current limitations on impervious surface.

d. The plan doesn't take into account the loss of land that will result from road upgrades and reconstruction to current right of way requirements, as we saw on Valley View Drive.

No virus found in this incoming message.
Checked by AVG - http://www.avg.com
Version: 8.0.175 / Virus Database: 270.8.4/1751 - Release Date: 10/27/2008 10:44 PM

Submitted to 11/10/09 PC.
public Hearing
From David Geary

Here's why the city should favor the change:

1. A stated objective of the new draft plan is that the business community wants the city to pursue ways to attract top level corporate executives to live in Burnsville. The thinking is that if the executives build here, they might bring their companies here, along with great jobs. Southwest Burnsville is the only land available to attract the same kind of million-dollar homes as Sunfish Lake and North Oaks.
   Both of those cities consist of large rural residential estates like ours. Burnsville is squandering this opportunity by allowing the land to be chopped up into little one acre lots.
2. Preserving large lots preserves the benefits Southwest Burnsville now provides the rest of the city:
   a. The current woods, wetlands and fields on private land extend the wildlife habitat beyond the borders of Murphy Hanrehan Regional Park. The park's habitat is well buffered now. Applying a cookie cutter approach to bring about the same development we now see in Forest Park Heights would be a tragedy. The slow turnover of land, often divided only for family members, means the commitment will continue among landowners to preserve and restore habitat. Now landowners are controlling invasive species, such as buckthorn and garlic mustard, and planting trees, shrubs and native plants. This increases the public benefits at no cost to the public.
   b. Sustainable rural development saves the city taxpayers from paying to install costly urban infrastructure. The city has already unnecessarily spent hundreds of thousands of dollars of taxpayer money to put in way oversized sewer and water pipes to serve Forest Park Heights, and the rest of Southwest Burnsville. It's amazing that such expensive infrastructure decisions have been based on the hypothetical, exaggerated, wildly unrealistic diagram of one acre lots overlaid all the land in Southwest Burnsville. It doesn't take into account any of the wetland preservation requirements from the state's Wetland Conservation Act, which didn't exist until the year after this diagram was made. The diagram didn't take into account the intricately folded hills and valleys, which limit development. And it didn't take into account the loss of available land expansion of roads to full the road right of way, as we saw happen on Valley View Drive. And it didn't take into account areas that would serve as storm water detention ponds to reduce storm water impacts to those wetlands.
   c. Current landowners subsidize the city watershed infrastructure with our fees, yet require no city taxpayer expenditures to treat storm water runoff here and cause no runoff to current city storm water treatment zones.
   d. The current rural residential development acts as a giant rain garden, promoting groundwater infiltration that recharges the aquifers from which the city wells draw everyone else's drinking water – all while not using any of that city water. Barr Engineering studies prove our owner-maintained wells cause no impact on the aquifers that feed sensitive natural resources like the Black Dog Fens.
3. It is amazing the city has used the one acre diagram as the guide for development in Southwest Burnsville for so long, considering out outmoded the development scenarios were in 1990.
   a. The plan doesn't take into account current standards limiting development on steep slopes.
   b. The plan doesn't take into account current tree protection standards.
   c. The plan doesn't take into account current limitations on impervious surface.
   d. The plan doesn't take into account the loss of land that will result from road upgrades and reconstructive to current right of way requirements, as we saw on Valley View Dr.

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

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Name	Address	Date	Signature

Deb Garross

From: Ryan Peterson
Sent: Monday, November 24, 2008 2:01 PM
To: Chris Slania; Bud Osmundson; Bonnie Buck; Deb Garross; Jenni Faulkner
Subject: FW: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes

Importance: High

Ryan Peterson | Assistant City Engineer
100 Civic Center Parkway | Burnsville, MN 55337
952-895-4459 ryan.peterson@ci.burnsville.mn.us| 952-895-4404 fax|
www.burnsville.org

City of BURNSVILLE

From: Curtis Quady [mailto:cequady@msn.com]
Sent: Monday, November 24, 2008 1:48 PM
To: Ryan Peterson
Cc: 'Curtis Quady'
Subject: FW: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes
Importance: High

Ryan,

As I made reference to the letter I sent to you on Oct. 15th, I thought you would be interested in this letter also.

Regards,

Curt

From: Curtis Quady [mailto:cequady@msn.com]
Sent: Monday, November 24, 2008 1:04 PM
To: 'Chris Slania'; mayor@ci.burnsville.mn.us; council@ci.burnsville.mn.us
Cc: 'Curtis Quady'
Subject: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes
Importance: High

Chris,

As promised, I reviewed the video minutes of the Planning Commission's November 10, 2008 minutes as it applies to the discussion on minimum acreage zoning and development in Southwest Burnsville.

I am of the opinion that this discussion ended with the unanimous vote of the Commission and judgment of Chairman Michael Esch that this subject be remanded to the City Council for further study. I agree with that rational conclusion.

In my review of the Commission's minutes I viewed testimony from four (4) residents of Southwest Burnsville and Commission members speak to various topics and issues such as:

- opinions of resident surveys
- impacts of taxation and assessments
- fair and impartial methodology determining burden and affordability in payment of taxation and assessments (of residents)
- use of or rejection by residents of sewer and/or water should it become available
- valuation of property with and without change in minimum acreage zoning and water and sewer availability
- damage to the natural infrastructure including flora and fauna
- long-term target audience use
- esthetic and amenities design and impact
- carry-over of lessons learned and to be learned from the maturing of the immediate past residential development at the far west end of Valley View Drive – nineteen (19) lots not yet built upon
- short and longer term impacts of the present down-turn in the local and national-international economy and relationship to the City's and residents' financing and carrying of dept burden, etc.

In all of this testimony leading up to Chairman Esch's unanimous and, I believe, proper decision, I heard no agreement, but only many ensuing questions that begged for future inquiry, discovery of fact and then, perhaps, changes to existing assumptions and zoning.

The decision as to what is best for Southwest Burnsville and the City as a whole – citizens present and future, business, tourism, investment, the environment and the City - should be a thorough and thoughtful study that fairly represents all of the constituent or concomitant parts therein; what I believe was accomplished at the November 10, 2008 Commission meeting was the beginning of that necessary process. In my letter to the City dated October 15, 2008, regarding 2009 Planned Judicial Road Construction and Consideration of Possible Water and Sewer Improvements, I requested more information in order to make an informed decision. For me, I find myself in a similar posture regarding the issues herein. Since time is not of the essence and a decision is not needed immediately, as Chairman Esch and the Commission reasoned, I would also cordially recommend further study to find the best long-term solution to these very important issues.

One thing I believe we all presently agree upon, that is Southwest Burnsville is a most beautiful and unique – one of a kind – area that has great existing value and an even greater potential value to all of it's residents, and the City as a whole. Therefore, only a long-term answer of equal quality should be demanded by all. As a community, we can afford to accomplish this only once.

Sincerely,

Curtis Quady
2704 Wren Court
Burnsville, MN 55306
Mail only to:
PO Box 939
Burnsville, MN 55337
cequady@msn.com

UPDATED SW BURNSVILLE SURVEY RESULTS 12/01/08

Our door-to-door survey got responses from owners of 90% of the land.

TOTAL: 148 households on 368.22 acres
126 Respondents on 331.18 acres = 90% of land
22 Non-respondents on 37.04 acres = 10% of land

90% of the households who responded support two-acre consistency.

TOTAL: 126 households responded
114 YES = 90%
12 NO = 10%

This is a clear mandate from the people who live here. Why would you let 10% of the households determine what the future will be for the other 90%?

Again, we're in step with the business community that sees the wisdom of preserving large acreage for high-end housing, such as a 5,000 sq. ft. home now going up on Loop Road. Changing the policy also would protect the current modest-income homeowners in onr neighborhood, many who are over age 65 and on a fixed income.

That new house has no negative financial impact on the neighbors, unlike what happened on Valley View Drive. There a developer used the one-acre loophole to run sewer and water past all the neighbors, who were financially dragged along for the ride. The city made the one-acre loophole available through a minor comp plan amendment in the 1990s that surely didn't get as much scrutiny as our presentation here. Without the loophole, the land on Valley View Drive would have developed on the sustainable rural residential model just like the rest of us.

For the past 12 years we've been hoping that the loophole wouldn't be exploited; that no one would fire the economic gun pointed at our collective heads. One should not claim that because we dodged the bullet for a dozen years that it was a good policy that works. It just took 12 years until its first test. And failure. It's safe to say no one is happy with the outcome. And it's clear now that it doesn't work for 90% of the people responding to our survey.

Please close the loophole and ensure we can continue living independently. Thank you!

Recd 12-01-08 MB

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DAN & BRUCE SCHMITT OWNED

Name	Address	Date	Signature
Brian Koshenina	2905 Loop Rd So	Nov 9 2008	
R. T. Eschinger	2803 S. Loop	11-9-08	
Ruth Zenzovambe	2609 Loop Rd S	11-9-08	
Roxanne Carlson	2601 So Loop Rd	11-9-08	
Christine Savard	2712 N. Loop Rd	11-9-08	Christine Savard
Amy Faunt	2820 N. Loop Rd	11-9-08	Amy Faunt
Maggie Anderson	3004 Brown Ln Burnsville	11-9-08	
Cindy Sorvari	3208 Loop Rd B'ville	11/9/08	Cindy Sorvari
Tom Morrow	3420 Davids Ct B'ville	11/9/08	
Marcie Bertamus	3430 Davids Ct Brville	11/9/08	
Anna Berge	3430 Davids Ct Brville	11/9/08	
Joy Simonsen	3410 Davids Ct Brsville	11/9/8	
MARY ELLEN AMODEO	15513 LOOP RD BURNSVL	11/9/08	M E Amodeo
JILL RONNING	2605 LOOP RD S BURNSVILLE	11/10/08	Jill M Ronning
CANT - LIVES IN LAKEVILLE Jim Sparrigl	3015 So Loop Rd Burnsville	11/10/8	
SANDRA LYNN SORVARI	15708 LOOP RD S. BV	11/23/08	Sandra Lynn Sorvari
John Bodger	15625 Loop Rd S.	11/23/08	
Jyne Peterson	15200 Loop Rd S.	11-23-08	Jyne Peterson
Pat & Valerie Adam	3205 Loop Rd N.	11-23-08	
Peggy & Gary Andersen	3200 Loop Rd. N.	11-23-08	
Patti & Mark Raas	15609 Loop Rd. B'ville	11-25-08	Patti Raas
Jean M Nelson	2606 Loop Rd Burnsville	12/1/08	

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Name	Address	Date	Signature
Jim Pope	15506 Lono Road	11-27-08	[illegible]
Sandy Dvcay	3112 Marcia Ann	11-27-08	Sandy Dvcay
Susan Vaght	15400 Marcia Ann Cr	12-1-08	Susan Vaght

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Name	Address	Date	Signature
Dave + Shari Giles	2110 Alcana Lane	11-30-08	Shari Giles
John + Pat Verly	2109 Alcana Ln	11-30-08	John Verly

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Name	Address	Date	Signature
Susan D Toms	15612 Scenic Ln	11/9/08	Susan D Toms
[illegible]	15612 Scenic Lane	11/9/08	[illegible]
Linda Klamm	15701 Scenic Ln.	11/9/08	Linda Klamm
Mary Weichelt	15720 Scenic Ln	11/9/08	[illegible]
Marvin Gohman	15504 Kings Ct.	11/22/08	[illegible]
[illegible] Boyer	15508 Kings Ct.	11/25/08	[illegible]
Dan Lange	15505 Kings Ct	11/25/08	[illegible]
Tammy Anderson	1901 W. 155th St.	11/25/08	Tammy Anderson
Phyllis Payer	15510 Kings Ct	11/25/08	Phyllis Payer
Kevin Panzer	" "	11-25-08	Kevin Panzer
Paula Reyes	15515 Kings Ct	11-25-08	Paula Reyes
Robin [illegible]	15509 Kings Ct	11-25-08	Robin [illegible]
Lenny Hultgren	2005 155th St W	11-26-08	Lenny Hultgren
Joel Trites	15517 Crest Dr.	11-30-08	[illegible]

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Name	Address	Date	Signature
Robert Thy	1608 W 155th	10-6-08	
Paul Gilarby	1500 W 155 St	9 Nov 08	
Elaine Anderson	1804 W. 155th St	11/9/08	Elaine Anderson
Albera Frazier	2209 155th St.	11-9-08	Albera Frazier
KAREN K Jansen	2301 O'meara Ct	11/9/08	Karen K Jansen
Brian WILLIAMS	2400 O'meara Ct.	11-9-08	Brian Williams
KAREN SIGGAM	15508 CREST DR	11-22-08	Karen Siggam
JOHN DEKKENGA	15600 Crest DR	11/22/08	
Gordon Peter	15620 CREST DR	11/22/08	Gordon Peter
Dianne E. Bode	15516 Crest Dr	11/22/08	D E. Bode
[illegible]	15514 CREST	11/22/08	
Gary Olson (GARY OLSON)	15515 CREST	11/22/08	
Thomas A. Blackman (Thomas A. Blackman)	15507 Crest Dr.	11/22/08	
Thomas D. Peterson	1920 W. 155th	11/22/08	THOMAS D. PETERSON
Eleanor Bergland	15732 Scenic Lane	11/22/08	Eleanor Bergland
Bryce Schmitt	2704 VALLEY VIEW DR.	11/22/08	
Shari Brandt	1875 Timber Ridge Dr	11/22/08	Shari Brandt
Kenneth H Peterson	15501 Crest Dr Burnsville MN 55306		
Cindy Flom	15650 Judicial Rd. Burnsville, MN. 55306		
Joe M. Joslin (Joslin)	15513 Crest Dr Burnsville Mn 55306		

26.

155th St.

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Name	Address	Date	Signature
E. Rodney Geary	15701 Judicial Rd	6 Nov '08	E. Rodney Geary
Victor Dudley	3005 South Loop Rd.	Nov. 6-08	Victor Dudley
Joan Eggen	15708 Judicial Rd.	11-6-08	Joan Eggen
Pat Flaherty	3104 So Loop Rd	6 Nov 08	Pat Flaherty
Paul [illegible]	15600 Scenic Ln.	11-6-08	Paul [illegible]
Tom & Jean Stark	15611 Scenic Ln	11-6-08	Tom Stark
David & Stephanie Geary	15690 Scenic Lane	11-6-08	[illegible]
DAN & BRENDA CALLAHAN	15715 JUDICIAL RD.	11/8/08	Dan Callahan
Tom Olsen	15725 Judicial	11/8/8	Thomas K Olsen
Burke & Karen Maxey	15720 JUDICIAL	11/8/08	D Burke Maxey
Lynn Berle	15613 Judicial Rd	11-8-08	Lynn Berle
Chris Berle	15613 Judicial Rd	11-08-08	Chris Berle
Dan & Sue Schmitt	15218 Judicial Rd	11-08-08	Dan Schmitt
Dan & Sue Schmitt	2704 Loop Rd South	11-08-08	Dan Schmitt
Joseph & Ellen Coffey	2420 O'meara Court	11-08-08	Joe C Coffey
Christopher Ward	2421 O'meara Court	11-08-08	C. Ward
Ursula Peterson	15605 Judicial Rd	11-8-08	U. Peterson
Amy Ketchum	2300 O'meara Ct.	11/08/08	Amy Ketchum
Amy Raschke	2208 W 155th St	Burnsville	11/9/08
Matt Egan	2113 W 155th St	Burnsville	11-9-08
Steve Swartz	15720 Crest Dr	Burnsville	[illegible]
Jill Swartz	15720 Crest Dr.	Burnsville	Jill Swartz

Federal - Scenic Lane

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Name	Address	Date	Signature
Mike Mowers	2000 155th ST	11/23/08	[illegible]
John Hubbock	2100 155th ST	11/23/08	[illegible]
Don Rasmussen	1916 W. 155th	11/23/08	Don Rasmussen
[illegible]	15503 Crest Drive	11/23/08	[illegible]
Adam Sorensen	15700 Crest Drive	11/23/08	[illegible]
Richard Swan	2801 N. Loop Rd	11/23/08	Richard Swan

2 Not home
12/15 - 1 Against (owner of a 1 Acre)

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Barbara Saylter	15350 Oriole Ct	11/9	Barbara Saylter
Denise Tousley	15360 Oriole Ct	11/9	Denise Tousley
LANCE FREE	15401 ORIOLE CT	11-09	Lance S. Free
Vonda Bezat	15450 ORIOLE CT	11/09	Vonda Bezat
Dayna Bernard	3012 Valley View Rd	11/9	[illegible]
[illegible]	3108 Valley View Rd	11/9	[illegible]
Jason Andresen	2960 Valley View Rd	11-9	[illegible]
[illegible]	2965 Valley View	11-9	[illegible]
John Wieland	15430 Oriole Ct	11-9	[illegible]
Bill Dumler	15400 Oriole Ct	11-10	[illegible]
Lisa Jansen	2909 Valley View	11-10	[illegible]
Tom Kranick	2605 Valley View Rd	11-10	Thomas J. Kranick

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Jim Ostroot	1010 Sumac Ln.	11-6-08	Jim Ostroot
Deb Ostroot	"	"	Deborah A. Ostroot
Dorothy Ascherman	"	11-9-08	Dorothy J. Ascherman
Arne A. Schutt	1908 Sumac Ln.	11-10-08	Arne A. Schutt
DeLores F. Schutt	1908 Sumac Ln.	11-10-08	DeLores F. Schutt
Harry Breitsprecher	2000 Sumac	11/10/08	[illegible]
Diane Breitsprecher	2000 Sumac Lane	11/10/08	Diane Breitsprecher
Thomas H. Duffy	2904 N. Loop Rd Burn. MN.	11-10-08	THOMAS H. DUFFY
Brad Duffy	2900 N. Loop	11-10-08	B. Duffy
George Duffy	3107 N. Loop	11-10-08	Geo Duffy
Sivert O. Hendrickson	2005 Sumac Ln	11/10/08	Sivert O. Hendrickson
Michael R. McNeely	1900 Sumac Lane	11-10-08	[illegible]

SUMAC, CREST DR.

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Thomas Hathaway	1950 Alcana Lane	11/9/08	
Barry Johnson	2000 Alcana Lane	11/9/08	Barry Johnson
[illegible]	2200 Alcana Lane	11/9/08	[illegible]
Sharon Wentzel	2421 Alcana Ln Burnsville	11/9/08	Sharon M. Wentzel
Mike Schroeder	2401 Alcana Lane	11/9/08	[illegible]
Carl Oct	2301 ALCANA LN	11/9/08	[illegible]
Pat Wolf	2205 Alcana Lane	11/9/08	[illegible]
Nicole M. Hathaway	1950 Alcana Ln.	11/10/08	Nicole M. Hathaway

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
3.5 acre Kevin Julie Fossum	15520 Judicial Rd	10-11-08	Julie Fossum
Jim + Nancy Lunneborg	15608 Judicial RD	Burnsville 11/10/2008	

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
✓ DEBRA MOWERS-BROWN	1912 W 155th Burnsville 55306	11.8.08	[illegible]

Address	Owner	Status	Signed	Acres-ROW
2301 155TH ST W	MATTHEW D ANTOLIK		**NO**	2.97
2209 155TH ST W	DEBORA C & STEVEN R FRAZIER		yes	1.28
2208 155TH ST W	AMY J PASCHKA		yes	5.87
2009 155TH ST W	TOM & JANELLE ROHRER		**NO**	1.00
2113 155TH ST W	MATT EGAN		yes	1.91
2005 155TH ST W	LONNY C & ANNETTE L HULTGREN		yes	1.13
2100 155TH ST W	JOHN D HUDDOCK JR		yes	1.57
2000 155TH ST W	MICHAEL J & KIMBERLY MOWERS		yes	3.65
1920 155TH ST W	THOMAS PETERSON		yes	1.41
1916 155TH ST W	DONALD & SUZANNE RASMUSSEN		yes	1.70
1912 155TH ST W	FORREST III BROWN		yes	5.93
1608 155TH ST W	ROBERT T THIRY		yes	13.68
1901 155TH ST W	TIMOTHY & TAMMY K ANDERSON		yes	1.04
1804 155TH ST W	ELAINE AND LOIS R. ANDERSON		yes	5.39
1508 155TH ST W	PAUL E ELLARBY		yes	4.43
2421 ALCANA LN	PAUL & SHARON TSTE WENTZEL		yes	1.01
2404 ALCANA LN	ROLAND O & BEVERLY CARLSON	no response		2.78
2401 ALCANA LN	MICHAEL L & KATINA K SCHROEDER		yes	1.00
2400 ALCANA LN	JEFFREY J ZRUCKY	no response		1.60
2300 ALCANA LN	WILLIAM G DRECHSLER	no response		1.48
2301 ALCANA LN	CARL F & DIANE L ORTH		yes	1.00
2205 ALCANA LN	PATRICK W & JULIE K WOLF		yes	4.55
2111 ALCANA LN	THOMAS D & SUSAN HASSINGER	no response		2.00
2109 ALCANA LN	PATRICIA A & JOHN E VERBY		yes	2.82
1950 ALCANA LN	THANE K & NICOLE M HATHAWAY		yes	1.42
2000 ALCANA LN	BARRY D & SUSAN M JOHNSON		yes	5.13
2110 ALCANA LN	DAVID L & SHARON GILES		yes	2.40
2200 ALCANA LN	WILLIAM B ASHLEY		yes	2.00
15501 CREST DR	KENNETH H & JANET PETERSON		yes	1.50
15503 CREST DR	BRIAN A & MARY A STOLTZ		yes	0.57
15507 CREST DR	THOMAS ALAN BLACKMAN		yes	0.63
15508 CREST DR	KAREN L INGRAM		yes	0.53
15513 CREST DR	PETER & JUDY L JOSLIN	no response		0.61
15515 CREST DR	GARY S OLSON		yes	0.77
15517 CREST DR	DEREK TRITES		yes	0.74
15720 CREST DR	STEPHEN L SWANTZ		yes	8.07
15700 CREST DR	ADAM & STACY SORSVEEN		yes	1.31
15620 CREST DR	GORDON E TRSTE PETERS		yes	1.47
15600 CREST DR	JOHN & SHIRLEY M DEKKENGA		yes	1.96
15516 CREST DR	DIANNE E TSTE BODE		yes	0.67
15514 CREST DR	DANIEL F & CHERYL FORREST		yes	1.10
15500 CREST DR	MITCHELL T FABER		**NO**	0.83
1875 TIMBER RIDGE	JEFFREY W & SHARI L BRANDT		yes	3.54
15210 JUDICIAL RD	PAUL N & GERALDINE LEIDNER	no response		1.16
15218 JUDICIAL RD	DANIEL R & SUSAN L SCHMITT		yes	1.62
15420 JUDICIAL RD	GARY A & ROSANNE FLATTEN		**NO**	4.37
15508 JUDICIAL RD	LARRY A & TAMELA J MOEN	no response		1.38
15520 JUDICIAL RD	KEVIN & JULIE FOSSUM		yes	3.48
15608 Judicial Rd	JAMES D LUNNEBORG		yes	2.50
15605 JUDICIAL RD	RANDALL & TATJANA KVALE		yes	1.02
15613 JUDICIAL RD	TIMMY L & KRISTEN L BERLE		yes	1.10

15650 JUDICIAL RD	SCOTT T & CYNTHIA K FLOM		yes	1.10
15701 JUDICIAL RD	ERLE R TSTE GEARY		yes	5.72
15715 Judicial Rd	DANIEL P & BRENDA M CALLAHAN		yes	1.90
15708 JUDICIAL RD	JOAN R EGGUM		yes	3.22
15720 JUDICIAL RD	D BURKE & KAREN L MAXEY		yes	2.34
15725 JUDICIAL RD	THOMAS K & SUSAN L OLSEN		yes	1.82
15500 KINGS CT	KEVIN W & PHYLLIS M PANZER		yes	1.04
15504 KINGS CT	MARVIN NICHOLAS GOHMAN		yes	1.01
15501 KINGS CT	WILLIAM C LANG	no response		1.00
15505 KINGS CT	DANIEL R LANGE		yes	1.39
15509 KINGS CT	ROGER D & ROBIN D ZINKE		yes	1.00
15515 KINGS CT	MARK E & PAULA L REEVES		yes	1.10
15508 KINGS CT	JOHN P & STACIE BOYER		yes	1.07
2604 LOOP RD N	JEAN NELSON	no response		6.00
2608 LOOP RD N	KLAUS A TSTE PROEHL	no response		2.45
2700 LOOP RD N	WAYNE J & SANDRA R DUCAJ	no response		1.02
2712 LOOP RD N	MARK A & CHRISTINE D SAVARD		yes	2.31
2820 LOOP RD N	RICHARD A & AMY A FAINT		yes	2.00
3004 BROWN LN	DAVID R & ANGELIQUE ANDERSON		yes	2.31
3200 LOOP RD N	ROY E & MARGARET A ANDERSON		yes	4.29
3208 LOOP RD N	CRAIG A & CYNTHIA SORVARI		yes	1.79
3220 LOOP RD N	DALE C & KATHLEEN K GRIEPP		**NO**	4.35
15440 MARCIA ANN LN	NANCY ANN BRANDANGER		**NO**	1.05
15420 MARCIA ANN LN	TERENCE P & DEBORAH ROBERTS	no response		1.05
15400 MARCIA ANN LN	WAYNE L & SUSAN H VOIGHT	no response		1.03
3116 MARCIA ANN LN	DARRIN D RAHBAIN	no response		1.01
3112 MARCIA ANN LN	WAYNE J DUCAJ	no response		1.76
3410 DAVID CT	JOY SIMONSEN		yes	1.77
3420 DAVID CT	JAMES D MORROW		yes	1.77
3430 DAVID CT	MICHAEL J & MARCIA D BERTAMUS		yes	1.29
15500 LOOP RD N	FRED O & GLORIA RAU		**NO**	4.62
15506 LOOP RD	JAMES W POPE		yes	2.01
15512 LOOP RD	MICHAEL J BABCOCK	no response		2.80
15608 LOOP RD S	CINDY M BODGER		yes	5.05
15700 LOOP RD S	JUNE E TSTE PETERSON		yes	7.92
15708 LOOP RD S	SANDRA LYNN SORVARI		yes	1.25
3113 LOOP RD S	MERLE L & CAROL E MEYER		yes	4.25
3005 LOOP RD S	VICTOR & BEATRICE DUDLEY		yes	4.49
2905 LOOP RD S	BRUCE & DANIEL SCHMITT		yes	5.36
2803 LOOP RD S	RICHARD T ESSLINGER		yes	1.01
2709 LOOP RD S	ELAYNE HILLS SUTTER		**NO**	12.14
2609 LOOP RD S	YVES & RUTH ZOUZOUAMBE		yes	1.12
2605 LOOP RD S	DALE G & JILL M RONNING		yes	1.19
2601 LOOP RD S	ROXANNE J CARLSON		yes	1.26
2801 LOOP RD	CAROL R TSTE LATTERY	Dick Swan sig	yes	8.32
2900 LOOP RD N	GEORGE H & DOROTHY F DUFFY	Brad Duffy sig	yes	6.65
2904 LOOP RD N	GEORGE H & DOROTHY F DUFFY	Thomas Duffy	yes	0.47
3107 LOOP RD N	GEORGE H & DOROTHY DUFFY	George Duffy	yes	11.39
3205 LOOP RD N	VALERIE & PATRICK ADAMS		yes	2.21
15513 LOOP RD S	RONALD G & MARY E AMODEO		yes	2.35
15609 LOOP RD S	MARK A & PATTI A RAAS		yes	2.02
15625 LOOP RD S	JOHN PHILLIP BODGER		yes	2.08

3120 LOOP RD S	PATRICK J & BETH M JULIK		NO	2.30
3112 LOOP RD S	MICHAEL A & WENDY H BUTLER	no response		2.45
3104 LOOP RD S	PATRICK & PATRICIA FLAHERTY		yes	2.37
3006 LOOP RD S	DALE C & KATHLEEN K GRIEPP		NO	3.29
2420 OMEARA CT	JOSEPH C & ELLEN COFFEY		yes	1.02
2400 OMEARA CT	BRIAN L & DEBORAH L WILLIAMS		yes	1.03
2300 OMEARA CT	MATTHEW S & AMY W KETCHUM		yes	1.08
2301 OMEARA CT	DONOVAN W & KAREN C KLAUSEN		yes	1.00
2401 OMEARA CT	BRYANT R & CATHERINE THOMAS		NO	0.99
2421 OMEARA CT	CHRISTOPHER WARD		yes	1.00
15600 SCENIC LN	SHANNON KLOCKE		yes	0.92
15611 SCENIC LN	TOM M & JEAN B STARK		yes	0.97
15612 SCENIC LN	LARRY L & SUSAN D TOMS		yes	1.23
15690 SCENIC LN	DAVID & STEPHANIE A GEARY		yes	2.71
15701 SCENIC LN	EDWARD R JR & LINDA KLAMM		yes	5.37
15720 SCENIC LN	BRENT M & MARY B WEICHELT		yes	1.97
15732 SCENIC LN	ELEANOR J BERGLAND		yes	1.88
2100 SUMAC LN	GARY L & KATHLEEN NELSON	no response		1.26
2010 SUMAC LN	JAMES M & DEBORAH A OSTROOT		yes	1.30
2005 SUMAC LN	SIVERT OLAF TSTE HENDRICKSON		yes	7.14
2000 SUMAC LN	HEINZ & DIANNE BRETTSCHNEIDER		yes	1.20
1908 SUMAC LN	ARNE A & DELORES F SCHUTT		yes	3.21
1900 SUMAC LN	MICHAEL R & AMY H MCNEELY		yes	1.07
2605 VALLEY VIEW RD	THOMAS JACK TSTE KIRESUK		yes	6.20
2801 VALLEY VIEW RD	KELLY R RYSTROM	no response		0.94
2805 VALLEY LN	DAVID JOHN TSTE SMITH		yes	2.04
2809 VALLEY VIEW RD	LISA D JANSA		yes	0.99
2821 VALLEY VIEW RD	RICHARD & PEGGY EICHENLAUB	no response		2.00
3051 VALLEY VIEW RD	ROBERT S & JOAN L GONZALEZ	no response		2.23
3108 VALLEY VIEW DR	RICHARD D & CYNTHIA COTES		yes	5.04
3012 VALLEY VIEW RD	WAYNE JR & TAMMI M BERNARD		yes	4.38
3000 VALLEY VIEW RD	RAYMOND E & CONSUELO PALMER	no response		1.40
2960 VALLEY VIEW RD	PAMELA VANREMORTEL		yes	1.81
2950 VALLEY VIEW RD	JULIE K SEYMOUR	no response		2.37
2708 VALLEY VIEW RD	THOMAS T PETERSON	no response		2.79
2704 VALLEY VIEW RD	BRUCE W SCHMITT		yes	3.12
15430 ORIOLE CT	JOHN H WIEGAND		yes	1.00
15420 ORIOLE CT	JAMES H BEZAT		yes	1.09
15400 ORIOLE CT	WILLIAM F & MARTHA B DUMLER		yes	1.04
15360 ORIOLE CT	STEPHEN G & DENISE L TOUSLEY		yes	2.16
15350 ORIOLE CT	RICHARD G TSTE SAYTHER		yes	2.27
15401 ORIOLE CT	LANCE S & TERRY L FREE		yes	1.15
2708 WREN CT	BRIAN N & GRETCHEN K CARLSON	no response		1.28
2704 WREN CT	CURTIS E QUADY		NO	1.16
2700 WREN CT	MICHAEL J MARKEY	no response		1.00
TOTAL ACRES				368.22

APPENDIX R – CITY COUNCIL RESOLUTIONS & AGENDA PACKETS

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

RESOLUTION NO. 10-5871

CITY OF BURNSVILLE, MINNESOTA

RESOLUTION APPROVING AND ADOPTING THE 2030 COMPREHENSIVE PLAN UPDATE

WHEREAS, the City Council approved the final draft of the 2030 Comprehensive Plan Update on December 1, 2008 via Resolution 08-5733 subject to the following conditions:

1. Incorporation of applicable changes from Dakota County.
2. The plan will not be in effect until the Metropolitan Council approves the plan and subsequent final adoption by the City Council to effectuate the plan occurs.
3. The City Council will relook at Southwest Burnsville area and consider a 2 acre minimum lot size and cost/valuation input due to public utilities; and

WHEREAS, the plan has been updated to incorporate changes identified during the agency review and public hearing process by Dakota County, Scott County, Three Rivers Park District and Minnesota Department of Natural Resources; and

WHEREAS, the City Council considered an application for Comprehensive Plan Amendment for the Southwest Burnsville area to consider a 2 acre minimum lot size and cost/valuation input and after extensive study and neighborhood participation, the amendment was denied on April 6, 2010; and

WHEREAS, the plan was reviewed by the Metropolitan Council on April 28, 2010 which found that the city's plan meets all Metropolitan Land Planning Act requirements, conforms to the regional system plans including transportation, aviation, water resources management and parks, is consistent with the 2030 Regional Development Framework, and is compatible with plans of adjacent jurisdictions; and

WHEREAS, the Metropolitan Council authorizes the City of Burnsville to place its 2030 Comprehensive Plan Update into effect; and

WHEREAS, the Metropolitan Council approves the city's Tier II Comprehensive Sewer Plan; and

WHEREAS, the city agrees to participate in the Metropolitan Council Redevelopment Monitoring Program to provide data for redevelopment projects that occur in Burnsville; and

WHEREAS, the city agrees to continue to work with the Transportation Advisory Board (TAB) for all future functional classification TAB map changes.

NOW THEREFORE, BE IT RESOLVED that the City of Burnsville hereby approves and formally adopts the Burnsville 2030 Comprehensive Plan Update and Tier II Comprehensive Sewer Plan and places the plans into effect.

Passed and duly adopted by the City Council of the City of Burnsville, Minnesota this 22nd day of June 2010.

Elizabeth B. Kautz, Mayor

ATTEST:

Macheal Brooks, City Clerk

7:20 p.m.	8.	Consider Approval of an Application for Sjoquist Properties LLC, for a Preliminary and Final Plat of a one lot subdivision to be known as BURNHAVEN SECOND ADDITION, Rezoning from B3 to B3, PUD and Concept and Development Stage approval of a Planned Unit Development for a vehicle storage lot located at the Southwest corner of Burnhaven Drive and Southcross Drive; and Consider Findings of Fact, Ordinance, Development Contract and Planned Unit Development Agreement.
7:40 p.m.	9.	Consider Ordering Improvements and Preparation of Plans and Specifications for Toyota Regional Pond (10-320), 2010 Pond Cleanout (10-305), and 2010 Lateral Drainage Modification Projects (10-301).
7:45 p.m.	10.	Consider Approval and Final Adoption of the Burnsville 2030 Comprehensive Plan Update; and Consider Resolution.
8:00 p.m.	11.	Consider Appointments to Burnsville Performing Arts Center Advisory Commission and other Advisory Boards for 2010.
8:05 p.m.	12.	Consider Resolution Approving Issuance of Lease Revenue Bonds to Fund Ice Center Improvements and Approving the Form of the Related Documents.
8:15 p.m.	13.	Regular Meeting of the Economic Development Authority (EDA).
8:25 p.m.	14.	Consider Options for Additional Signage along Burnsville Parkway during Roadway Construction.
8:30 p.m.	15.	Miscellaneous.
	16.	Adjournment.

"The City of Burnsville does not discriminate on the basis of race, color, national origin, sex, religion, age, sexual preference, disability or any other basis protected by law in the admission or access to, or treatment or employment in, its programs, activities, or services." To obtain this information in alternative forms such as Braille, large print, audio tape or qualified readers, please contact the City of Burnsville. Telephone (952) 895-4490.

9. Consider Ordering Improvements and Preparation of Plans and Specifications for Toyota Regional Pond (10-320), 2010 Pond Cleanout (10-305), and 2010 Lateral Drainage Modification Projects (10-301).

Motion by Sherry, seconded by Gustafson to ordering improvements and preparation of plans and specifications for Toyota Regional Pond (10-320), 2010 Pond Cleanout (10-305), and 2010 Lateral Drainage Modification Projects (10-301). Ayes – Gustafson, Kautz, Kealey and Sherry. Nays – Crichton. Motion carried.

10. Consider Approval and Final Adoption of the Burnsville 2030 Comprehensive Plan Update; and Consider Resolution.

Motion by Kealey, seconded by Crichton to approve the Burnsville 2030 Comprehensive Plan Update; and adopt the following resolution, which will become part of the official records:

RESOLUTION NO. 10-5871

RESOLUTION APROVING AND ADOPTING
THE 2030 COMPREHENSIVE PLAN UPDATE

Poll of votes: Ayes – Crichton, Gustafson, Kautz, Kealey, and Sherry. Nays – None. Motion carried.

11. Consider Appointments to Burnsville Performing Arts Center Advisory Commission and other Advisory Boards for 2010.

Motion by Crichton, seconded by Kealey, to appoint the following applicants to the Burnsville Performing Arts Center Advisory Commission for a one year term ending June 2011:

Garrick Dietze Steve Preus David Ulrich

Poll of Votes: Ayes – Crichton, Gustafson, Kautz, Kealey and Sherry. Nays – None. Motion carried.

Motion by Sherry, seconded by Kealey, to appoint the following applicants to the Burnsville Performing Arts Center Advisory Commission for a two year term ending June 2012:

Kathy Cleveland Paul Jacques Mark Pevan

Poll of Votes: Ayes – Crichton, Gustafson, Kautz, Kealey and Sherry. Nays – None. Motion carried.

Motion by Gustafson, seconded by Kealey, to appoint the following applicants to the Burnsville Performing Arts Center Advisory Commission for a three year term ending June 2013:

Lynn Bishop Sal Mondelli Brad Rixmann

Poll of Votes: Ayes – Crichton, Gustafson, Kautz, Kealey and Sherry. Nays – None. Motion carried.

Motion by Kealey, seconded by Crichton, to appoint Brian Wolff to the Parks & Natural Resources Commission for a term ending June 2012. Ayes – Crichton, Gustafson, Kautz, Kealey and Sherry. Nays – None. Motion carried.

CITY OF BURNSVILLE
COUNCIL AGENDA BACKGROUND

Meeting Date 06/22/2010
Item number 10

ACTION: _____ **New Policy** _____ **Clarification/Revision of Past Policy** _____ **Present Policy**
__X__ **Required by Law** ____ **Previous Council Action** _____ **Council Theme** _____ **Housekeeping**

PRESENTER:

Deb Garross, Planner

ITEM:

Consider Approval and Final Adoption of the Burnsville 2030 Comprehensive Plan Update; and Consider Resolution.

POLICY DECISION/ACTION TO BE CONSIDERED:

Adopt the Resolution.

BACKGROUND:

The city council approved the draft 2030 Comprehensive Plan Update on 12/1/08 via attached Resolution No. 08-5733 and Findings of Fact. The Findings of Fact included the stipulation "following receipt from the Metropolitan Council to place the Plan into effect, a final resolution will be brought back to the city council for formal adoption of the 2030 Comprehensive Plan."

The plan was submitted to the Metropolitan Council on December 31, 2008. Since that time, staff has worked with Met Council staff to provide and incorporate information into the plan to meet the 2030 Regional Development Framework. Minor changes and additions to the draft plan were needed to meet the information standards required by the Met Council to consider our plan complete for formal review. None of the changes are substantive revisions but rather are additional details requested by Met Council staff. In addition, the plan has been updated to incorporate a number of Comprehensive Plan amendments that have been approved by the city since 2008. See "List of Comp Plan Amendments" for reference. A summary of the changes are provided on the attached sheet "Summary of Plan Changes." A complete copy of the entire plan are on file in the planning department for review and on the city website under "Planning Department Links."

The Metropolitan Council reviewed our plan on April 28, 2010 and found that the draft 2030 Comprehensive Plan Update conforms to the regional system plans and is consistent with the 2030 Regional Development Framework. See attached letter from Phyllis Hanson, dated April 29, 2010 for reference. The Metropolitan Council approved the plan and the final step to implement the plan is for the city council to approve and formally adopt the Burnsville 2030 Comprehensive Plan Update to put the plan into effect. The city is required to formally adopt the plan via a resolution. Following city council final approval and adoption, Burnsville will have 9 months to update our ordinances and policies to be consistent with the new 2030 Comprehensive Plan Update.

RECOMMENDATION:

The recommendation from staff is for the city council to formally adopt the 2030 Comprehensive Plan Update by approving the attached resolution.

ATTACHMENTS:

Draft Resolution for Final Adoption of 2030 Comprehensive Plan Update
Resolution No. 08-5733
Findings of Fact (12-1-08)
Summary of Plan Changes
List of Comp Plan Amendments
Phyllis Hanson Letter (04-29-2010)

DG g/shared/agenda/cc/2010/06-22-2010/9. 2030 Comp Plan/cc Report – 2030 Comp Plan Final Adoption

SUMMARY OF PLAN CHANGES:

Chapter I – Community Overview:

- A paragraph was inserted describing the process to amend the Comprehensive Plan. In order to amend the Comprehensive Plan, the same procedure outlined in the zoning ordinance for zoning text and map amendments shall be used including the public hearing and notification, publication requirements. This is not a new requirement, rather the process is required by Minnesota Statutes and staff has simply added the process to our plan.

- Metropolitan Council required density ranges to be provided as opposed to the maximum density standard used by Burnsville. Example - the density for the R3B, High Density Residential Zone is up to 14.5 units per acre. In the plan the range is now 9 to 14.52 units per acre. The low end of the range was identified using the density of the next lower zone (in this case R3A, Medium Density Residential which has a maximum density of up to 9 units per acre.)

Chapter II - Future Land Use Guide Plan:

- Added density range information for residential land use categories as discussed in Chapter 1 above.

- Added a paragraph to describe that certain residential facilities (nursing homes, assisted living and residential health care facilities that are considered to be residential units), are allowed by the zoning ordinance as conditional uses in the B1, B2 and B3 commercial zones. Provided information and a new table showing the number and type and name of the residential facilities that have been approved in Burnsville between 1990 and 2009 and provided an estimate of the future number of similar units that may occur in the future through 2030.

- Revised the 2030 Future Land Use Guide Plan Map and acreage table to incorporate the land use changes that the city has approved since the draft plan was submitted to the Met Council. See attached "List of Comp Plan Amendments" for reference to the changes.

Chapter III – Economic Development Plan:

- Changed provisions to delete EGC, Economic Growth Commission and added provisions for the EDC, Economic Development Commission.

- Added provisions encouraging the private installation of fiber optic cable within the city. This is based on council direction from the October 14, 2008 Worksession and council approval of a zoning ordinance amendment on December 16, 2008 to add the private provision of fiber optic cable as a benefit to PUD's. This is also consistent with the Business Subsidy Policy.

Chapter VIII – Transportation Plan:

- Revised Figure 6, Functional Road Classification Map to address road classification consistency issues raised by Dakota County and Scott County.

- Traffic Analysis Zone (TAZ) table was updated to include TAZ allocation of households based on 2010, 2020 and 2030 household forecasts.

Chapter IX – City Services and Facilities Plan:

- Modified a table in the Comprehensive Water Plan, per MnDNR comments to be consistent with the city's Water Emergency and Conservation Plan.

- Modified Sanitary Sewer Plan to provide separate data and forecasts for both sewered and unsewered (septic systems) areas of the community.

- Added a new sewer map showing the city's existing service area and proposed trunk sewer system through 2030 and ultimate sewer service area.

- Added tables showing projected flow forecasts for the city for each trunk sewer connection point to the interceptor system.

- Added a provision indicating the city prohibits the connection of sump pumps, rain leaders, and passive drain tile to the sanitary sewer system (this is not a new requirement, rather the statement has been added to the Comp Plan in addition to the existing ordinance/policy standards already in place).

Chapter X – Implementation Plan:

- Per Minnesota Statutes, added the following paragraphs designating the planning department as the "planning agency" for purpose of reviewing CIP plans for compliance with the Comprehensive Plan and the sale/rental of city property:

  Minnesota statutes § 462.356 Subd. 2, specifies that the planning agency is responsible to review capital improvement plans for compliance of the action with the comprehensive plan. The planning agency may consist of the planning commission or planning department of a municipality. The planning department is designated as the planning agency for the purpose of administering the comprehensive plan and forwarding recommendations to the city council (governing body) for capital improvements planning. The planning commission is the designated planning agency for administering all other aspects of the comprehensive plan.

  Minnesota statutes § 462.356 Subd. 2, specifies that the planning agency is responsible to review proposed acquisition or disposal of real property for compliance of the action with the comprehensive plan. The planning agency may consist of the planning commission or planning department of a municipality. The planning department is designated as the planning agency for the purpose of administering the comprehensive plan and forwarding recommendations to the city council (governing body) for the sale and acquisition of public land. The planning commission is the designated planning agency for administering all other aspects of the comprehensive plan.

<u>Appendix:</u>

The following changes and additions were made to the 2030 Comp Plan Update Appendix documents:

- Appendix S – Added a third table "Land Use Table in 5-Year Stages" to the appendix. This is a document that Met Council staff required in order to deem the Burnsville Plan complete for review.
- Added Appendix T – Neighborhood Center Yield Plans
- Added Appendix U – Satellite Center Yield Plans
- Added Appendix V – Current Zoning Ordinance and Zoning District Descriptions

LIST OF COMP PLAN AMENDMENTS APPROVED BY CITY COUNCIL 2008-JUNE 2010

08-15 23	**Minnesota Cemeteries Corporation** – Application for a rezoning from R-1 (Single Family Residential) to I-1, PUD (Industrial Park, Planned Unit Development), a Comprehensive Plan Amendment from Cemetery to Industrial Park, preliminary plat approval of a two lot subdivision to be known as **PLEASANT VIEW 2ND ADDITION**, and Concept and Development Stage approval of a Planned Unit Development for construction of a mini-storage facility to be located northwest of the intersection of Portland Avenue South and Highway 13. Approved 7-8-08
08-33 G	**City of Burnsville** – Application for Approval of the 2030 Comprehensive Plan. Approved 12-01-08
08-37 G	**City of Burnsville** – Application for an ordinance amendment to Title 10, Chapter 27 of the Burnsville City Code regarding Fiber Optic Cable to new and existing buildings. Approved 12-16-08
09-12 23	**City of Burnsville** – Application for a rezoning from Parks to I-1 (Industrial Park) and B-3 (General Business), a Comprehensive Plan Amendment from Industrial/Office to General Business, and preliminary plat approval of a two lot subdivision to be known as **CLIFF RIVER RIDGE**, located southeast of the intersection of River Ridge Boulevard and Cliff Road. Approved 08-03-2009
09-18 23	**Woof Dah Inc.** – Application for Comp Plan Amendment to Change Land Use from Low Density Residential to Industrial/Office and Rezoning from R1, Single Family Residential to I1, Industrial Park and Conditional Use Permit for an Animal Kennel and Preliminary Plat of a Two Lot Subdivision to be Known as **PLEASANT VIEW 3RD ADDITION** Located Northwest of Highway 13 and Portland Avenue. Approved 08-03-2009
09-21 24	**Eden Baptist Church** – Application for Preliminary Plat approval for a one lot subdivision to be known as **EDEN BAPTIST ADDITION**, a rezoning from B-3 (General Business) and R-3B (High Density Residential) to B-3, PUD (General Business, Planned Unit Development), a Comprehensive Plan Amendment from High Density Residential to General Business, and Concept and Development Stage approval of a Planned Unit Development for religious assembly at 1313 Highway 13. Approved 08/18/2009

RESOLUTION NO. 08-5733

RESOLUTION APPROVING THE FINAL DRAFT 2030 COMPREHENSIVE PLAN UPDATE

WHEREAS, the Burnsville Planning Commission conducted a public hearing on November 10, 2008, on the final draft of the Burnsville 2030 Comprehensive Plan Update; and

WHEREAS, notice of the public hearing on said application has been duly published and posted in accordance with the applicable Minnesota Statutes; and

WHEREAS, the Planning Commission then proceeded to hear all persons interested in said application and persons interested were afforded the opportunity to present their views and objections to the granting of said application; and

WHEREAS, it is the recommendation of the Planning Commission that the City Council approve the final draft of the Burnsville 2030 Comprehensive Plan Update subject to:

1. Incorporation of applicable changes from Dakota County.
2. The plan will not be in effect until the Metropolitan Council approves the plan and subsequent final adoption by the City Council to effectuate the plan occurs.
3. The City Council will relook at Southwest Burnsville area and consider a 2 acre minimum lot size and cost/valuation input due to public utilities.

WHEREAS, the City Council held a meeting on December 1, 2008 to consider said final draft of the 2030 Comprehensive Plan Update and directed staff to review the Southwest Burnsville Area minimum lot size standards as part of the Council's 2009 Governance Agenda; and

WHEREAS, the City Council found that the final draft of the 2030 Comprehensive Plan Update incorporates requirements of the Metropolitan Council Systems Statement, is consistent with the requirements of the Metropolitan Land Planning Act and Metropolitan Council 2030 Regional Development Framework and;

WHEREAS, all comments received from the Comprehensive Plan Advisory Committee, Planning Commission, public and from all of the jurisdictions and affected agencies (following the mandatory six month review) have been considered.

NOW THEREFORE, BE IT RESOLVED that the City of Burnsville hereby approves the final draft of the Burnsville 2030 Comprehensive Plan Update subject to the following conditions:

1. Incorporation of technical comments from reviewing agencies including Scott County, Dakota County, Minnesota Department of Natural Resources and Three Rivers Park District.
2. Review and approval by the Metropolitan Council.

Passed and duly adopted by the City Council of the City of Burnsville, Minnesota this 1st day December 2008.

Elizabeth B. Kautz, Mayor

ATTEST:

Macheal Brooks, Deputy City Clerk

CITY OF BURNSVILLE

DAKOTA COUNTY, MINNESOTA

IN RE:

Application of the City of Burnsville to update the Comprehensive Plan to incorporate provisions to address how the City will meet objectives of the Metropolitan Council's 2030 Regional Development Framework and Minnesota State Law.

FINDINGS OF FACT AND DECISION

FINDINGS OF FACT

On December 1, 2008 the Burnsville City Council met at its regularly scheduled meeting to consider the above application of the City of Burnsville to update the Comprehensive Plan to incorporate provisions to address how the City will meet objectives of the Metropolitan Council's 2030 Regional Development Framework and Minnesota State Law.

The Planning Commission held a public hearing on the application on November 10, 2008.

The City Council now makes the following Findings of Fact and Decision:

1. The City received notice from the Metropolitan Council via the issuance of a Systems Statement (September 12, 2005) notifying Burnsville that the Comprehensive Plan must be updated to incorporate the 2030 Regional Development Framework by December 2008.

2. The City is required by the Metropolitan Council to include and/or update several technical components of the Comprehensive Plan including demographics, population, housing and employment forecasts, transportation, transit, aviation, wastewater, sewer, water, parks and trails.

3. The City has conducted many studies, planning efforts and undertaken new initiatives since the 2000 Comprehensive Plan was adopted in 1998 which needed to be incorporated into the update to address future growth and redevelopment, and has directed staff to review the Southwest Burnsville Area minimum lot size standards as part of the Council's 2009 Governance agenda.

4. The City conducted a visioning process in 2006 which resulted in the Burnsville Vision for the 21st Century report that provided a basis for update.

5. An Advisory Committee was created for the purpose of assisting the Planning Commission in the review and development of the 2030 Comprehensive Plan Update.

6. A Work Plan and Schedule was developed outlining the elements to be reviewed and incorporated into the 2030 Comprehensive Plan Update.

7. Four public input sessions were held to obtain feedback to identify issues that should be addressed as part of the update process, to review community goals and policies, to review land use alternatives and an open house to review the draft 2030 Comprehensive Plan.

8. The draft 2030 Comprehensive Plan was made available to the public for review and comment on the city website, library and city hall. Meetings were held with City standing Boards and Commissions, Chamber of Commerce, Business Forum, ISD 191 School Board and the Superintendent of ISD 196.

9. On May 5, 2008 the City forwarded the draft 2030 Comprehensive Plan to the following adjacent and affected agencies for their consideration (mandatory 6-month review): Cities of Apple Valley, Bloomington, Eagan, Lakeville, Savage, Dakota and Scott County, ISD 191, ISD 194 and ISD 196, Metropolitan Airports Commission, Black Dog Watershed Management Organization, Lower MN River Watershed District, Vermillion River JPO, MN Valley National Wildlife Refuge, Three Rivers Park District, Minnesota Valley Transit Authority, Minnesota Pollution Control Agency, MnDNR, MnDOT South Metro and the Metropolitan Council.

10. The mandatory six month review period ended November 6, 2008 and the City received comment letters from Scott and Dakota County, MnDNR, and Three Rivers Park District with items to be considered as part of the Burnsville Comprehensive Plan Update. The City received feedback from the following agencies/jurisdictions indicating that they have no comment on the Burnsville 2030 Comprehensive Plan: City of Apple Valley, Vermillion River Watershed JPO, MnDOT, ISD 194, ISD 191, and ISD 196.

11. All agency comments and public feedback received in the form of letters, e-mails, the SW Burnsville neighborhood petition and other documents have been reviewed by the Planning Commission as part of the public hearing on the 2030 Comprehensive Plan Update, the December 1, 2008 City Council meeting and will be made part of the appendix for the 2030 Comprehensive Plan Update.

12. The final draft 2030 Comprehensive Plan Update will be forwarded to the Metropolitan Council by December 31, 2008 for their formal review.

DECISION

The final draft Burnsville 2030 Comprehensive Plan Update is hereby approved in accordance with the Resolution and plans reviewed, modified, approved, and recorded in Clerk's Document No. 08-78.

A. Approval of the final draft of the 2030 Comprehensive Plan Update is subject to the following:

1. Incorporation of technical comments from reviewing agencies including Scott County, Dakota County, Minnesota Department of Natural Resources and Three Rivers Park District.

2. Review and approval by the Metropolitan Council.

3. Following receipt from the Metropolitan Council to place the Plan into effect, a final resolution will be brought back to the City Council for formal adoption of the 2030 Comprehensive Plan.

CITY OF BURNSVILLE

By: _____
Elizabeth B. Kautz, Mayor

ATTEST:

_____
Macheal Brooks, Deputy City Clerk

BURNSVILLE CITY COUNCIL
PRELIMINARY AGENDA - REGULAR MEETING
MONDAY, DECEMBER 1, 2008 - 7:00 p.m.
BURNSVILLE CITY HALL
100 CIVIC CENTER PARKWAY

Mayor	*Elizabeth Kautz*			
Councilmembers	*Charlie Crichton*	*Dan Gustafson*	*Dan Kealey*	*Liz Workman*

7:00 p.m. CALL TO ORDER
PLEDGE OF ALLEGIANCE

1. Announcements and Proclamations
   - Community Builders Award Presentation to Wendy Brandt – Tender Heart ½ Marathon

2. Citizen Comments

3. Additions to the Final Agenda

CONSENT AGENDA
Approximate time:

7:10 p.m. 4A. Consider Approval of Minutes.

B. Consider Approval of Claims Listing.

C. Consider Certification of Delinquent Water and Sewer Accounts to Property Taxes.

D. Consider Approval of Master Group Contracts for Health Insurance with Medica Insurance Company for the 2009 Calendar Year.

E. Consider Approval of Quote Package Six for Television Studio at Burnsville High School

F. Consider Approval of Mutual Police Assistance Agreement for Enforcement of Traffic Safety Laws.

G. Consider Approval of Contract with Greiner Construction for Work Related to Finishing the Interior of the New Pump Room Facility for the Nicollet Commons Park Water Features.

H. Consider an Ordinance Adding Title 4, Chapter 10 Concerning Vacant Properties and Adopt Policy No. 2.065 Relating to Vacant Property Registration.

I. Consider an Ordinance Amending Title 10, Chapters 4, 19, and 23 of the Burnsville City Code Regarding Commercial and Industrial Building Design and Materials.

REGULAR AGENDA

7:15 p.m. 5. Public Hearing – Consider Proposed 2009 Budget and Property Tax Levy.

7:45 p.m. 6. Consider Approval of the 2030 Comprehensive Plan.

8:05 p.m. 7. Miscellaneous.

8. Adjournment.

CITY OF BURNSVILLE
Regular Meeting Minutes
December 1, 2008

The City Council of the City of Burnsville met in regular session at the Burnsville City Hall, 100 Civic Center Parkway, Burnsville, Minnesota on the 18th day of November, 2008.

The meeting was called to order by Mayor Kautz at 7:00 p.m.

The Pledge of Allegiance was preceded by a moment of silence.

Present: Crichton, Gustafson, Kautz, Kealey, Workman
Absent: None

1. Announcements and Proclamations.

Council Meetings:	Tues., December 16, 7:00 p.m.
	Tues., January 6, 7:00 p.m.
Worksession Meeting:	Tues., December 9, 6:30 p.m.
	Tues., January 13, 6:30 p.m.
Special Worksession:	Mon., December 8, 5:00 p.m. *(Holiday Lighting Contest Judging)*

- Community Builders Award Presentation to Wendy Brandt – Tender Hearts ½ Marathon

2. Citizen Comments.

No one appeared before the Council.

3. Additions to the Final Agenda.

There were no additions to the Final Agenda.

CONSENT AGENDA

Councilmember Crichton requested the following items be removed from the Consent Agenda for discussion:

- Item 4G *(Greiner Construction for Work Related to Finishing the Interior of the New Pump Room Facility for the Nicollet Commons Park Water Features)*

- 4H *(Ordinance Adding Title 4, Chapter 10 Concerning Vacant Properties and Adopt Policy No. 2.065 Relating to Vacant Property Registration)*

Motion by Kealey, seconded by Crichton, that the following Consent Agenda items (listed as A–I, excepting G and H) be approved as presented. Ayes – Crichton, Gustafson, Kautz, Kealey, Workman. Nays – None. Motion carried.

CONSENT AGENDA (continued)

4A. Consider Approval of Minutes.

Approved the City Council minutes of November 18, 2008, the Worksession minutes of November 17, 2008 and November 25, 2008, and the Special Worksession minutes of November 20, 2008, as submitted.

4B. Consider Approval of Claims Listing.

Approved the listing of claims in the submitted amount of $2,815,480.93.

4C. Consider Certification of Delinquent Water and Sewer Accounts to Property Taxes.

Authorized staff to certify delinquent water and sewer accounts to 2009 property taxes.

4D. Consider Approval of Master Group Contracts for Health Insurance with Medica Insurance Company for the 2009 Calendar Year.

Approved the Master Group Contracts with Medica Insurance Company for 2009 Health Insurance.

4E. Consider Approval of Quote Package Six for Television Studio at Burnsville High School.

Awarded Quote Package Six to Alpha Video for the Studio Installation Package to Alpha Video for the amount of $90,163.86

4F. Consider Approval of Mutual Police Assistance Agreement for Enforcement of Traffic Safety Laws.

Approved the Mutual Police Assistance Agreement for Enforcement of Traffic Safety Laws with Dakota County to be effective until December 31, 2019.

D-08-77

4G. *Item removed for discussion.*

4H. *Item removed for discussion.*

4I. Consider an Ordinance Amending Title 10, Chapters 4, 19, and 23 of the Burnsville City Code Regarding Commercial and Industrial Building Design and Materials.

Adopted the following Ordinance that will be published in the legal newspaper and become part of the official records:

ORDINANCE NO. 1143

AN ORDINANCE AMENDMENT TO TITLE 10, CHAPTERS 4, 19, AND 23
OF THE BURNSVILLE CITY CODE REGARDING COMMERCIAL AND
INDUSTRIAL BUILDING DESIGN AND MATERIALS

ITEM(S) REMOVED FROM CONSENT AGENDA

4G. Consider Approval of Contract with Greiner Construction for Work Related to Finishing the Interior of the New Pump Room Facility for the Nicollet Commons Park Water Features.

Motion by Crichton, seconded by Gustafson, to award the contract to Grenier Construction in the amount of $44,615 to complete a portion of the mechanical, electrical, and plumbing work needed to finish the interior of the new pump room facility for Nicollet Commons Water Feature Repairs Project (08-308). Ayes – Crichton, Gustafson, Kautz, Kealey, Workman. Nays – None. Motion carried.

4H. Consider an Ordinance Adding Title 4, Chapter 10 Concerning Vacant Properties and Adopt Policy No. 2.065 Relating to Vacant Property Registration.

Motion by Crichton, seconded by Gustafson, to adopt Policy No. 2.065 – Vacant Properties Registration; and the following Ordinance that will be published in the legal newspaper and become part of the official records:

ORDINANCE NO. 1144

AN ORDINANCE ADDING TITLE 4, CHAPTER 10 TO THE
BURNSVILLE CITY CODE CONCERNING VACANT PROPERTIES

Ayes – Crichton, Gustafson, Kautz, Kealey, Workman. Nays – None. Motion carried.

REGULAR AGENDA

5. Public Hearing – Consider Proposed 2009 Budget and Property Tax Levy.

A public hearing was conducted regarding the proposed 2009 Budget and Property Tax Levy. The public hearing was opened at 7:15 p.m.

The following person(s) appeared before the Council:

- Barb William, 306 Crystal Lake Circle
- Vicki Loehr, 300 E 152nd Street
- Rick Hoel, 1001 Forest Glen Court
- Elwood Narum, 367 Upper Wood Way
- Jerry Willenberg, 13101 Thomas Ave S

The Mayor declared the public hearing closed at 7:38 p.m. No action was taken.

6. Consider Approval of the 2030 Comprehensive Plan.

The following person(s) appeared before the Council:

- David Geary, 15690 Scenic Lane
- Merle Myer, 3113 Loop Rd S.
- Patrick Julip, 3120 Loop Rd S.

6. Consider Approval of the 2030 Comprehensive Plan (continued).

Council discussed the information and comments regarding southwest Burnsville and the need for a restudy of the area as recommended by the Planning Commission. Council directed staff to add a restudy of southwest Burnsville area to address minimum lot size to the Governance Agenda for 2009.

Motion by Kealey, seconded by Crichton, to adopt the Findings of Fact and resolution approving the 2030 Comprehensive Plan with amendments to note future clarification of minimum lot sizes in Southwest Burnsville, which will become part of the official records:

RESOLUTION NO. 08-5733

RESOLUTION APPROVING THE FINAL DRAFT
2030 COMPREHENSIVE PLAN UPDATE

D-08-78

Poll of Votes: Ayes – Crichton, Gustafson, Kautz, Kealey, Workman. Nays – None. Motion carried.

7. Adjournment.

Motion by Workman, seconded by Crichton, to adjourn the meeting at 8:13 p.m. Ayes – Crichton, Gustafson, Kautz, Kealey, Workman. Nays – None. Motion carried.

Macheal Brooks, Deputy City Clerk

Approved by the City Council of the City of Burnsville this 16th day of December, 2008.

Elizabeth B. Kautz, Mayor

CITY OF BURNSVILLE
COUNCIL AGENDA BACKGROUND

Meeting Date 12/01/08
Item number 6

ACTION: _____ **New Policy** _____ **Clarification/Revision of Past Policy** _____ **Present Policy**
_X_ **Required by Law** _____ **Previous Council Action** ____ **Council Theme** _____ **Housekeeping**

PRESENTERS:

Deb Garross, Planner

ITEM:

Consider Approval of the 2030 Comprehensive Plan and Consider Findings of Fact and Resolution.

POLICY DECISION/ACTION TO BE CONSIDERED:

Adopt the Findings of Fact and Resolution.

STAFF RECOMMENDATION (If different than Planning Commission): N/A

PLANNING COMMISSION ACTION / ISSUES:

The Planning Commission held the public hearing for the 2030 Comprehensive Plan Update on November 10, 2008. City staff reviewed the legal requirements for the plan update, provided an overview of the process and public meetings. The final draft has been updated to incorporate comments from the City Council worksession (April 29th), Advisory Panel and Planning Commission comments, corrections and updates identified by staff and comments received from Scott County on the Transportation Plan chapter regarding future trail access to the Mn. Valley State Trail, to utilize the Dan Patch Railroad as a future trail corridor in the event that it is abandoned and to correct the Functional Classification map. All of these changes are identified in the final draft document that was distributed to the City Council on November 3rd, under separate cover. New provisions are identified in the final draft plan with underlined text and deleted items are shown with a line through the text. The final draft is available on the city website for review by the public.

Since distribution of the final draft plan, staff received the comment letter submitted by Dakota County (see attached letter dated November 3, 2008 for reference), which is generally supportive of the draft plan. The county identified several issues related to the draft Transportation Plan which are in the process of being reviewed by staff. The primary issue is that the existing Dakota County 2025 Transportation Plan is based on 1999 data while the city's plan is based on 2006 data. The county will be updating their transportation plan in 2009 and upon further discussion with staff, no changes are required in the city draft related to congestion levels on county highways. The majority of the county comments are technical corrections that staff is in the process of reviewing and will incorporate the changes/corrections in the plan prior to submittal to the Metropolitan Council. These minor changes are related to the Functional Classification Map, level of service values, Highway 13/CSAH 5 interchange, trails map, county Greenway Plan, and solid waste. On page 5 of the county letter, guidance is given for the city regarding historic preservation. Staff will update the plan to correctly represent "American Indians" and also indicate that the few historic sites remaining in Burnsville are privately owned with the exception of the Depot and sites within the Minnesota River valley (which are part of the MN Valley National Wildlife Refuge.

Three Rivers Park District submitted a comment letter that is attached, indicating the districts desire to review and comment on development plans which may impact water bodies within and continuous to Park District holdings. The city includes notification of the park district for development applications now and will continue to do so in the future. Comments were provided about the regional trail search corridor that the city illustrates on the Future

Trail Network Plan (page VIII – 50) through Murphy Hanrehan Park Reserve. The trail corridor is shown because it is part of the Metropolitan Council Systems Statement that identifies the elements of Burnsville's plan that need to be addressed as part of our Update to be consistent with the 2030 Regional Blueprint. To satisfy the Park District, the trail corridor segment will be removed from the city map and will end at the boundary of the park rather than be shown through the park. References in the draft plan related to a former joint powers agreement between the Park District and Scott County will be removed from the plan. Questions were also raised about the city's 2008 Water Resources Management Plan. To address the matter, a copy of the city's adopted plan will be forwarded to the Three Rivers Park District.

Comments were received from the MNDNR (see attached e-mail from Janell Miersch dated 11-7-08) which identify a discrepancy between the Burnsville Water emergency and Conservation Plan and the Comprehensive Water Plan (Chapter IX – page 40) related to water usage. Staff is reviewing both documents and will provide the corrected information in the plan and respond back to the DNR on this matter.

An e-mail comment sheet was submitted by C.T. Rice 15253 Greenhaven Way (November 7, 2008) and is attached to this report. The comments will be incorporated with all of the other public comments and made part of the 2030 Comprehensive Plan Appendices. No changes to the final draft have been made regarding these comments. The Council may choose to direct staff to incorporate changes discussed by Mr. Rice as part of the conditions of approval if so desired.

Four residents of SW Burnsville provided public input and a signed petition was submitted and made part of the public hearing record at the Planning Commission meeting. The petition requests the city to remove diagrams, figures and references supporting the one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009. The petition references Appendix A of the 1990 Comprehensive Plan which is the Southwest Public Services Study. The original petition was returned to the neighbors who plan to obtain additional signatures and present the petition to the City Council at the December 1st meeting. A copy of the petition submitted at the public hearing is attached to this report. The attached Planning Commission minutes provide a detailed summary of the public comments related to SW Burnsville. Many residents of SW Burnsville would like the city to change the Comprehensive Plan to remove reference to the SW Public Services Study Master Plan and also amend the Zoning Ordinance and SW Burnsville assessment policies to remove provisions that allow for 1 acre lots with public sewer and water.

The representatives who spoke indicated a desire to keep SW Burnsville rural and to promote the neighborhood as an area with high amenities to attract high end housing. Some indicated a concern that when public utilities are introduced, neighboring properties are impacted by higher taxes due to their proximity to urban services. The Forest Park Heights neighborhood was identified by some as a type of development that should not occur in the future. Others indicated that the cost of public utilities and urban street standards will be high due to the existing larger lot areas and frontages in SW Burnsville and identified a concern that some may or may not be able to recoup costs through future subdivision but that the opportunity to subdivide may help to offset the costs. Ms. Kathy Griepp spoke at the public hearing then contacted staff following the meeting to clarify that she supports the 2 acre lot size but in the event public utilities and streets are needed, the city should reconsider its assessment policy and pursue a policy similar to Lakeville's where unit assessments are made as opposed to front footage assessments. No changes to the final draft have been made regarding these comments. The Council may choose to direct staff to incorporate changes discussed by the SW Burnsville neighborhood as part of the conditions of approval if so desired.

Staff advised the public and Planning Commission that the 2030 draft plan does not propose any changes to the Rural Residential SW Burnsville area but continues the policies enacted as part of the 1990 Comprehensive Plan and 1995 assessment policy. Staff concurred with the residents that the 1990 plan was done prior to enactment of the 1991 Wetland Conservation Act and also the adoption of many of the environmental districts that are now part of the Zoning Ordinance. Staff also advised that part of the rationale for the 1 acre lot size and density with utilities and the option to utilize Planned Unit Development zoning is to provide some equity and reduce costs for infrastructure but that the overall density is 1 unit per net acre (lot size does not include r-o-w), regardless of lot size approved pursuant to a PUD. Also, the 2 acre lot size is based on dry/buildable area which excludes steep slopes, wetlands and unstable soils. The significance is that although many 2 acre plus lots exist, we do not know how many have the required dry/buildable areas to accommodate future septic systems. Due to technology advances and geographic information systems (GIS) data, there is better and more detailed information available today than when the 1990 study was done. Staff advised the Planning Commission that if they concurred with the residents and petition, a condition could be added recommending the city revisit the 1990 plan and provide updates based on current information. The Planning Commission voted to incorporate this as a condition of approval.

Upon further review of the current ordinance and policies that are in place, staff believes that the practices that have been in place for the past 12 years provide for the optimum compromise for SW Burnsville. This area of the City is the only area where development can occur with private septic systems and the appropriate ordinances are in place to require secondary areas for said systems and also there is a well and septic system monitoring program in place. All other single family residential areas in Burnsville have a 10,000 sq. ft. minimum lot size and allow for the higher density of up to 4 units per gross acre. In SW Burnsville, the area is zoned R1A which has a maximum 1 unit per net acre density with public utilities. To develop to this density, the property owner is required to pay for and bring utilities to the project site. Property owners who live in between are not required to hook up to utilities or pay for the improvements unless they want to. The existing PUD option in the R1A District allows for smaller lots (with less frontage) to be developed which allows for more economical provision of infrastructure costs than would occur if the 200' lot width/frontage requirement were applied. This provision allows for the clustering of lots for economic purposes but does not allow for the density to exceed 1 unit per net acre. The current plans, ordinances and policies are a compromise solution that has worked for the past 12 years and allows options for both those who desire to live on 2+ acre parcels with private systems and those who desire (or in some cases need) public utilities either to correct septic/well issues or to divide their land for future development.

From a staff perspective, we do not believe that approval of the 2030 Comprehensive Plan Update should be delayed to accommodate revisions to the SW Burnsville plan and no changes to the final draft have been made regarding SW Burnsville. The attached Findings of Fact and Resolution do not include condition 3 as recommended by the Planning Commission at this time. If the Council desires to re open the SW Burnsville study, condition 3 (from Planning Commission motion) or other direction on SW re-study should be added to the motion to approve the 2030 Comprehensive Plan Update.

If the Council desires to re-evaluate plans and policies related to SW Burnsville the plan can be modified to add this as an implementation measure for the future and direction should be given to add condition 3 to the Findings of Fact and Resolution. Direction should also be provided to add the SW Burnsville plan update as a discussion item for the January all-day retreat to identify the scope and budget for the re-study. A second option would be to direct staff to add the SW Burnsville re-study as a discussion item for a future Council Worksession meeting. The Council may choose to direct staff to incorporate changes as part of the conditions of approval if so desired.

Following the Planning Commission public hearing, the city received notice from the City of Apple Valley that they will have no comments on the Burnsville plan. Also, Curtis Quady 2704 Wren Court submitted e-mail comments. Both the Apple Valley and Quady comments are attached to this report. No changes to the final draft have been made regarding Mr. Quady's comments. The Council may choose to direct staff to incorporate changes discussed by Mr. Quady as part of the conditions of approval if so desired.

PLANNING COMMISSION RECOMMENDATION (With Conditions):

The Planning Commission recommended 5-0 to approve the 2030 Comprehensive Plan Update subject to the following conditions:

1. Incorporation of applicable changes from Dakota County.
2. The plan will not be in effect until the Metropolitan Council approves the plan and subsequent final adoption by the City Council to effectuate the plan occurs.
3. Recommendation that the City Council relook at Southwest Burnsville area and consider a 2 acre minimum lot size and cost/valuation inputs due to public utilities. *(Planning Commission recommended this condition, staff does not).*

PLANNING COMMISSION SUGGESTIONS: N/A

LEGAL DOCUMENTS: N/A

City Council conditions of approval shall be incorporated into the following legal documents:

- ☐ Development Contract (Plat)
- ☐ Combined Dev. Contract/PUD Agreement
- ☐ PUD Agreement
- ☐ Amended PUD Agreement
- ☐ PUD Release
- ☐ Other Legal Documents (List):
- ☐ Conditional Use Permit
- ☐ Amended Conditional Use Permit
- ☐ Conditional Use Permit Release
- ☐ Interim Use Permit
- ☐ Amended Interim Use Permit
- ☐ Ordinance
- ☐ Ordinance Summary
- ☒ Resolution
- ☐ Variance

ATTACHMENTS:

- ☒ (11/10/08) P.C. Report & Packet
- ☒ (11/10/08) Approved P.C. Minutes
- ☐ (_/_/_) PNRC Report
- ☐ (_/_/_) Unapproved PNRC Minutes
- ☐ (_/_/_) HOC DRC Report
- ☐ (_/_/_) Unapproved HOC DRC Minutes
- ☒ Findings of Fact
- ☐ Minnesota Statutes
- ☒ Other Exhibits (List):
  - Resolution
  - Janelle Miersch (MnDNR) e-mail 11-7-08 (2 sheets)
  - Three Rivers Park District Letter 11-4-08 (3 sheets)
  - City of Apple Valley Agency Response 11-6-08
  - Signed Petition from SW Burnsville (10 sheets)
  - C.T. Rice e-mail 11-7-08
  - Curtis Quady e-mail 11-24-08

DG g/shared/agenda/cc/2008/2030 Comp Plan C.C. Report

Meeting Date: 11/10/08
Item Number: 3
Project No.: 08-33

CITY OF BURNSVILLE
PLANNING COMMISSION BACKGROUND

PRESENTER:

Deb Garross, Planner

ITEM:

Public Hearing – City of Burnsville – Application for Approval of the 2030 Comprehensive Plan

BACKGROUND/OVERVIEW:

The purpose of this item is to hold the public hearing to consider preliminary approval of the Burnsville 2030 Comprehensive Plan Update. Minnesota law requires local comprehensive plans to be updated every 10 years and to incorporate provisions to address how the city will meet objectives of the Metropolitan Council's 2030 Regional Development Framework. The 2030 Comprehensive Plan is the 4th update to the original 1965 Burnsville plan. The city's plan is required by law to be submitted to the Metropolitan Council by December 31, 2008.

The update process has been underway for about 2.5 years beginning with the Burnsville for the 21st Century Visioning process in 2006. A 25-member volunteer Comprehensive Plan Advisory Panel comprised of representatives from boards/commissions and from the Visioning project was created to assist the Planning Commission in preparing the Comprehensive Plan update. As part of the process, the city held 4 public open house meetings where community issues were identified, goals and policies were reviewed and modified, land use options were reviewed and the entire draft plan was made available for public review and comment. The attached Work Plan identifies all of the steps, meeting schedules and parties that have been involved with the update. The city utilized local media, the city news letter, cable TV, letters, public notices, and flyers to publicize the public meetings and identify ways for people to provide input into the plan. The draft plan was also available on the city website for the past six months for public review and comments.

This update addresses the requirements of the Metropolitan Council and provides long range plans for future growth, development and redevelopment of the city. Between 2010 and 2030 the city is expected to add about 3,600 people, 3,500 households and 5,600 jobs. The major focus of development and redevelopment will be in the Heart of the City and Minnesota River Quadrant. The 2030 Plan incorporates updated demographic and socioeconomic information along with the studies and improvements that have occurred since the last plan update (Burnsville 2000 Comprehensive Plan). The Plan also incorporates the required items that the Metropolitan Council identified for Burnsville via the 2005 "systems statement" and the city's local planning objectives. The Plan includes 10 chapters that address future land use, economic development, housing, natural environment, transportation, city facilities and implementation. To facilitate implementation of the plan, staff has developed the attached 2030 Comprehensive Plan Update Implementation Recommendations Chart which identifies in table format the major steps, time frame and city department that will be responsible for implementation of the 2030 plan. As part of this update, two new plans have been incorporated related to youth and neighborhoods. This update focuses more on redevelopment and how the city will provide services and programs now and over the next 20 years to accommodate the needs of an aging and more diverse population and workforce.

The initial entire draft document was completed in the spring of 2008. In early May 2008, the City Council approved the first draft to begin the required six month agency comment period. The last meeting of the Advisory Panel was on September 22nd to review public comments and input on the draft plan that had been received prior to September 17, 2008. Staff incorporated the revisions and additional information into the final draft plan that is the subject of this public hearing. All changes that have been added (since release of the initial draft in the spring 2008) are identified by underlined text (teal blue color) in the final draft dated November 10, 2008. Comments received after September 17th are included in this background and attached for review of the Planning Commission. The city held an open house on the draft plan on October 23rd which was attended by approximately 20 people but

only one comment form was submitted which is included as an attachment. The majority of the inquiries focused on southwest Burnsville and the MRQ redevelopment area. In addition to the open house, staff has heard from some residents who have indicated an interest to limit the ability to provide public utility improvements to SW Burnsville and to remove the 1 acre lot size standard in the rural residential area of the city. Attached is a letter and petition form submitted to the City on November 9th. It was indicated to staff that the actual petition signatures would be submitted to the Planning Commission during the public hearing.

The mandatory 6-month agency review period ends on November 6, 2008. Scott County provided comments related to the transportation plan which were reviewed with the Advisory Panel in September and have been incorporated into the final draft. Dakota County submitted a comment letter dated November 3, 2008 which is generally supportive of Burnsville's plan and recommends some minor corrections and changes that staff can incorporate prior to submittal of the plan to the Metropolitan Council in December. Any additional comments received will be provided to the Planning Commission at the public hearing.

ROLE OF PLANNING COMMISSION:

The role of the Planning Commission is to hold the public hearing, take public testimony and to forward a recommendation to the City Council to approve the plan as presented or with changes identified by the Commission. The Planning Commission has been actively involved in preparing and reviewing the plan for the past 18 months. This is the last review of this document by the Planning Commission. The next step is for the Council to review and approve before submitting to the Metropolitan Council for review and approval. It is important to note that the City cannot formally adopt the plan until it has been reviewed by the Metropolitan Council and the city receives approval to put the plan into effect.

RECOMMENDATION (With Conditions):

Staff recommends that the Planning Commission recommend to the City Council preliminary approval of the 2030 Comprehensive Plan Update for submittal to the Metropolitan Council subject to the following conditions:

1. Incorporation of applicable changes from Dakota County.
2. The plan will not be in effect until the Metropolitan Council approves the plan and subsequent final adoption by the City Council to effectuate the plan occurs.

ATTACHMENTS:

Final Draft 2030 Comprehensive Plan (distributed under separate cover to Planning Commission and City Council)
2030 Comprehensive Plan Update Implementation Recommendations (6 pgs.)
Letter & Comments from Dakota County (11-3-08) (7 pgs.)
Public Feedback Form (10/23/08 Open House)
Petition Form Submitted from David Geary (SW Burnsville)
Work Plan & Schedule

dg
g/shared/planning/agenda/2008/2030 Comp Plan P.C. Report

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter I – Community Overview		
Consider update to Comp Plan demographic and socioeconomic sections to incorporate 2010 census data.	Following 2010 Census	Planning Department
Chapter II – Land Use Guide Plan		
Initiate rezoning of the following sites to bring zoning map and land use guide plan into consistency. Torbenson sites (R3 to R3A) Civic Center (B1/PUD to Park/PUD) Church site (B3 to B2) Island south of Crystal Lake (R1 to CD) Nicollet site (R3B to B3) Forest Park Heights Outlot A (R1A/PUD to CD/PUD)	2009	Planning Department
Review ordinances, policies and procedures to identify how to improve communications and interaction between the city and citizens (build on a strategy similar to neighborhood policing program).	Ongoing	All city departments
Review ordinances, policies and procedures to identify how to incorporate "rollable cities" strategy, and accessibility by people of various ages and modes of transportation.	2015	Planning, Parks, Engineering Departments
Identify strategies to incorporate sustainable practices into city operations and development review process.	TBD – depending upon if City Council adopts sustainability plan.	All city departments
Research ways to establish a "24/7" (24 hours per day - 7 days per week) lively atmosphere and to provide community events, places and facilities that are attractive to young adults and family oriented neighborhoods.	2020	Planning Department
Consider ordinance changes and incentives to create live/work units within neighborhoods, allow flexibility for elder care and programs/services to assist families and young adults, and allow uses such as coffee shops, fitness centers and others that are attractive to young adults.	2015	Planning Department
Continue to work with the Metropolitan Airports Commission and Noise Oversight Committee and be involved with monitoring/participation of noise implementation and mitigation efforts for airport and flight operations that impact Burnsville.	Ongoing	Administration Department
Update Subdivision Ordinance to address current and future planned development standards/procedures and to incorporate traffic demand management and transit oriented design objectives.	2009	Planning, Engineering, Natural Resources Departments

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter II – Land Use Guide Plan- continued		
Update Zoning Ordinance - Incorporate density ranges per updated plan -Add civic center buildings/facilities as uses allowed in the Park zoning district -Change R3C district label to MIX label in zoning ordinance and on zoning map -Research options for Transit Oriented Design and develop city guidelines and/or amend the ordinance to incorporate standards -Define the City Manager as the planning agency or designee with regard to acquisition and disposition of public land to be consistent with Mn statutes.	2009	Planning Department
Continue to work with KMM through the future Development Stage PUD process and negotiations with the land owner many environmental objectives may be met for the MRQ and quarry lake area.	Ongoing	Planning, Natural Resources, Engineering Department
Chapter III – Economic Development Plan		
Continue to market HOC and the AAA site for future development.	Ongoing	Economic Development
Continue to market vacant city properties for redevelopment.	Ongoing	Economic Development
Continue to administer TIF, Business Subsidy Policy, and Tax Abatement and seek other financial incentives for business retention and expansion.	Ongoing	Economic Development
Actively work with property owners to advance the MRQ Concept Redevelopment.	Ongoing	Economic Development
Focus economic development initiatives to promote the expansion and growth of medical technology, health care, bioscience and nanotechnology research, companies and services in Burnsville.	Ongoing	Economic Development
Continue periodic residential and business surveys	Ongoing	Administration, Economic Development Department
Chapter IV – Housing Plan		
Monitor building trends and update ordinances/design standards allow people to remodel homes to add contemporary features desired by residents and keep the city's housing stock functional and livable.	Ongoing	Planning Department
Continue the "Housing Improvement Area Policy" which establishes financing tools for private owner occupied housing improvements designed to accomplish specific objectives.	Ongoing	Administration, Planning Department
Continue inspections/compliance activities and/or look to alternative programs to encourage property maintenance.	Ongoing	Inspections Department
Continue to monitor single family housing conditions through periodic surveys.	Ongoing	Planning Department

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter IV – Housing Plan continued…		
Continue the STAR (Safe Tenant and Rental) license program for multiple family rental units.	Ongoing	Licensing, Police, Inspections Department
Continue program to track and register vacant properties so they can be monitored for property maintenance issues and re-inspected prior to occupancy.	Ongoing	Inspections Department
Continue to offer and promote programs to improve housing stock in Burnsville, and work with the Dakota County Community Development Agency (CDA) to offer zero and low interest rate rehabilitation loans.	Ongoing	Planning, Inspections, Administration Department
Continue to utilize the Dakota CDA for administration of affordable housing programs within Burnsville.	Ongoing	Planning, Administration Department
Promote private sector development of future mixed-use projects to accommodate live/work units to promote living close to work, transit orientation and access to neighborhood level services and recreation.	Ongoing	Planning, Economic Development Departments, Development Review Committee
ndertake a study to determine what efforts could be plemented to attract young adults to Burnsville and to ascertain if current youth are able/desire to remain in Burnsville through adulthood.	2015	Planning Department, administration, Economic Development
Participate in the Livable Communities Act Local Housing Incentives Program to meet adopted LCA benchmarks.	Ongoing	Planning, Administration Department
Encourage developers and home owners to develop and remodel utilizing green and sustainable practices to decrease environmental impacts and increase energy efficiency.	TBD – depending upon if City Council adopts sustainability plan.	Development Review Committee
Chapter V – Neighborhoods Plan		
Expand neighborhood level coordination and communication with residents and joint participation with civic and neighborhood improvement projects.	Ongoing	Administration
Continue neighborhoods initiatives to address issues and provide enhancement mechanisms to maintain and improve neighborhood vitality by empowering citizens to enhance the vitality of their neighborhoods.	Ongoing	Administration
Continue healthy city and other initiatives that promote family oriented activities, education, participation, healthy lifestyles and ic activism.	Ongoing	Administration, Recreation

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter VI – Natural Environment		
Continue to implement environmental district regulations and ordinances (such as Shoreland, Floodplain, Steep Slopes, Woodlands, and Soils etc.).	Ongoing	Planning, Natural Resources, Engineering Department
Implement 2008 Natural Resources Management Plan	Ongoing	Natural Resources Department
Implement 2008 Water Resources Management Plan.	Ongoing	Natural Resources Department
Implement 2008 Wetland Protection and Management Plan.	Ongoing	Natural Resources Department
Develop zoning ordinance standards for tree preservation, green space etc., for CRD Zoning District.	Ongoing	Planning, Natural Resources Department
Update Shoreland Management Ordinance following Mn. Rules revision process.	Ongoing	Natural Resources Department
Update Floodplain Ordinance following FEMA map update process.	Ongoing	Planning, Engineering Department
Review Steep Slopes environmental district to identify if additional protection measures or modifications to the current requirements should be adopted.	2011	Natural Resources, Engineering Department
Chapter VII – Youth Plan		
Evaluate development review process to identify ways to involve youth in planning and how youth are impacted by development. Identify ways to create or redevelop in a manner that youth will enjoy, feel are safe and want to participate.	2011	Administration, Planning, Recreation Department
Identify and implement ways to increase interaction and incorporate active communication with youth and their parents (outreach efforts for civic involvement and to involve citizens of diverse backgrounds).	Ongoing	Administration
Continue to actively work with school districts and other organizations to reach out to youth through participation with civic related classes, offering volunteer opportunities that build on course offerings and encouraging active interactions that expose youth to public service and governance matters.	Ongoing	All city departments
Increase participation in youth recreation, THE GARAGE and other venues.	Ongoing	Recreation Department
Continue programs and services offered through city departments such as police, recreation and fire that are directed toward youth safety, activities, civic participation and festivals.	Ongoing	All city departments

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter VIII – Transportation Plan		
Continue to monitor locations where crashes occur and work with responsible agencies to evaluate alternatives and make improvements to improve safety.	Ongoing	Engineering Department, Police Department
Work with MVTA and others to increase and improve transit options for the citizens of Burnsville.	Ongoing	Engineering Department; Administration Department
Continue to implement the city Trails Master Plan.	Ongoing	Engineering, Parks, Public Works Department
Monitor noise associated with aviation, highways and trains and work with developers, neighborhoods and agencies to mitigate noise impacts to Burnsville citizens.	Ongoing	Engineering Department, Administration
Add review for noise walls adjacent to residential development as part of the standard DRC review criteria.	2009	Planning, Engineering Department
Amend zoning ordinance to identify areas of the city where height limits associated with proximity to the Mpls/St. Paul International airport are located.	2009	Planning Department
Continue to encourage responsible agencies to maintain roads, right-of-way, utilities, trails and infrastructure to standards that are compatible with Burnsville's guidelines.	Ongoing	Administration, Public Works, Engineering Department
Update the zoning and subdivision ordinances to add provisions to address access management for thoroughfares, driveway access to streets, procedures for official mapping, and standards for when traffic studies need to be provided for private developments.	2009	Planning, Engineering Department
Continue to negotiate with Dakota County for public/private partnerships for providing transit stops and bus benches throughout Burnsville.	Ongoing	Engineering Department
Continue to seek funding for pedestrian and bicycle crossings over major thoroughfares in Burnsville such as the connection from the HOC to the Transit Station (Highway 13).	Ongoing	Engineering, Administration
Consider implementation an official mapping process to identify future right-of-way corridors that are in need of protection to implement the Transportation Plan. The following corridors may be officially mapped: ▪ Chowen Avenue – South Frontage Road ▪ Arthur Terrace connection to Nicollet Avenue *MRQ Area* ▪ New Highway 13/CSAH 5 Interchange ▪ New Interchange at I-35W (118th Street) ▪ West I-35W Frontage Road (connecting Embassy/Cliff Road to Black Dog Road) ▪ Box Culvert Road ▪ 124th Street West ▪ Cliff Road Extension	2010	Planning, Engineering Department

2030 Comprehensive Plan Update
Implementation Recommendations

Key Recommendation	Implementation Time Frame	Responsible Department
Chapter VIII – Transportation Plan- continued		
Work with the Metropolitan Council and other jurisdictions to utilize the MRQ Concept Plan and Black Dog Road for future regional trail corridors (Big River Regional Trail & connection to Mn Valley State Trail).	Ongoing	Recreation, Planning, Engineering Department
Chapter IX – City Services and Facilities Plan		
Update the 2000 Parks Master Plan	2013	Natural Resources Department
Review and update park dedication requirements and consider establishing dedication requirements for mixed use projects.	Ongoing	Parks Department
Continue to inspect and analyze the sanitary sewer system to: - Identify the extent of infiltration and inflow issues associated with the older portions of the system - Provide systematic inspections of the sanitary sewer system - Plan rehabilitation and improvements as part of the ongoing five year CIP.	Ongoing	Engineering, Public Works Department
Continue to monitor and maintain individual lift stations and plan for replacement costs as part of the five-year CIP	Ongoing	Engineering, Public Works Department
Continue to monitor and maintain city water systems and plan improvements as part of the ongoing five year CIP.	Ongoing	Engineering, Public Works Department

Dakota
COUNTY

November 3, 2008

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817

Physical Development Division

Dakota County
Western Service Center
14955 Galaxie Avenue
Apple Valley, MN 55124-8579
952.891.7000
Fax 952.891.7031
www.dakotacounty.us

Environmental Mgmt. Department
Farmland & Natural Areas Program
Office of GIS
Parks Department
Office of Planning
Surveyor's Office
Transit Dffice
Transportation Department
Water Resources Office

Dear Ms. Garross:

Thank you for the opportunity to review the City of Burnsville's comprehensive plan.

Dakota County staff reviewed the City's plan through the lens of five guiding principles that shaped the Dakota County Comprehensive Plan:

Sustainability; Living in ways that do not place undue burdens on the environmental, economic or social systems of future generations;
Connectedness; Completeness of systems and recognition of the complexity of relationships among systems;
Collaboration; Working together with private and public entities to advance shared goals;
Economic Vitality; Having a well-trained, well-educated workforce and the infrastructure needed to compete in a global economy;
Growing and Nurturing People; Delivering services in such a manner that all residents are enabled to live healthy, fulfilling lives.

We are pleased to see the City included the spirit of these guiding principles throughout its comprehensive plan. Enclosed are our comments on the plan. Please contact Kurt Chatfield (kurt.chatfield@co.dakota.mn.us, 952.891.7022) if you have any questions or if we can supply any more information. We look forward to working with the City to achieve our shared objectives.

Sincerely,

Lynn Thompson

Lynn Thompson
Acting Physical Development Director

Enclosure

cc: Commissioner Michael E. Turner, Fifth District
Commissioner Paul J. Krause, Sixth District
Brandt Richardson, County Administrator
Patrick Boylan, Metropolitan Council Sector Representative

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Dakota County Staff Comments on Burnsville's Comprehensive Plan November 3, 2008

Burnsville and Dakota County Collaborative Visioning

In 2006, Dakota County gathered with representatives from Burnsville and other cities, townships, school districts, nonprofit agencies, state and regional agencies, businesses, the Metropolitan Council and County staff to explore the opportunities and threats Dakota County and its residents will face over the next 20 years.

This group, known as the Advisory Panel for the County's Comprehensive Plan, identified five guiding principles that shape a vision for the future and further define how City and County should address upcoming opportunities and threats. Burnsville's comprehensive plan addresses many of the issues raised in the visioning process and shares much of the vision the County developed for its plan. In particular, Burnsville's plan embraces the vision of a walkable, bikeable community. Heart of the City in this planning timeframe will bolster its role as a leading example of people-scale developments in a formerly suburban setting.

The Dakota County following staff comments on the City's plan are shaped by the visioning effort.

Road networks

- Page 4 — Item 6.b. identifies improvements to increase capacity and decrease congestion, among other goals. These improvements should also include access spacing and provisions for a local road network that provides access and complements regional roads.
- Page 7 — The 2006 daily traffic volumes map lacks a source reference. In comparing with the County's average annual daily traffic counts, the figures on the map appear reasonable.
- Page 10 —The following corrections should be made to the functional classification map:
  - TH 13, north of Cliff Road, is an "A minor" arterial, not a "principal arterial"
  - CSAH 32 (Cliff Road), east of TH 13, is a "principal arterial," not "A minor arterial"
  - CSAH 42 is a "principal arterial," not an "A minor arterial"
  - CSAH 46, bordering the City's southeast corner, is not shown. It should be classified as an "A-minor arterial."
- Page 16 —There are several differences between the existing Dakota County 2025 Transportation Plan and Burnsville's plan regarding existing congestion levels on County highways, as follows. (Please note these are based on 1999 traffic counts.)
  - CSAH 38, from Lac Lavon Drive to the east City limits, is listed as "approaching capacity" in the County plan.
  - CSAH 42, from the west City limits to CSAH 5, is listed as "over capacity" in the County plan.
  - CSAH 42, from CSAH 5 to Burnhaven Drive, is listed as "approaching capacity" in the County plan.
  - CSAH 42, from Portland Avenue to the east City limits, is listed as "approaching capacity" in the County plan.
  - CSAH 46, in southeast City corner, is listed as "approaching capacity" in the County plan.
  - These differences may be attributed to the differences in volume to capacity ratios.

	Dakota County ratio:	Burnsville ratio:
A	0.00 to 0.35	0.00 to 0.39
B	0.35 to 0.50	0.40 to 0.59
C	0.50 to 0.75	0.60 to 0.79
D	0.75 to 0.90	0.80 to 0.99
E	0.90 to 1.00	1.00 to 1.19
F	> 1.00	> 1.20

- Pages 17-19 — The text should note the County uses different values for levels of service.
- Page 19 —The last bullet states there is a crash problem on CSAH 5 at Williams Drive and notes the need for an interchange. The plan should clarify how this would occur with the planned interchange for TH 13 and CSAH 5.
- Page 20 —The plan notes a high number of crashes occurs on CSAH 42 at CSAH 5 and at Aldrich Avenue. The plan should note that the CSAH 5 intersection is being reconstructed within the Segment 8 project. Dakota County's existing transportation plan identifies 2025 capacity deficiencies at these intersections and identifies the need for future interchange or overpass consideration.
- Pages 33-41 —Please note that Dakota County is updating its travel demand model and is expected to have new projections of 2030 traffic volume completed in 2009.
- Page 42 — Figure 34 identifies a need to widen CSAH 42 to 8 lanes. The right of way necessary for this to occur would be problematic and possibly prohibitive based on costs and space constraints. Other measures such as access elimination or consolidation throughout the corridor should first be considered in order to maximize capacity.
- Although County staff have no specific comment on the connectivity of Burnsville's streets, local street networks are becoming increasingly important to reduce energy usage and develop more sustainable communities. Developing a good system of local streets is a major factor in accomplishing these goals. Interconnected local streets perform the following public functions:
    - reduce the number of trips through signalized intersections, thereby reducing delay for all travelers,
    - reduce exposure to crashes in general,
    - reduce the need to access higher speed and higher volume roadways, thereby reducing the likelihood of crashes that cause injuries,
    - reduce trip lengths, travel times and fuel usage,
    - reduce emergency response times by police, fire and ambulance,
    - create a more flexible roadway system that can provide options to travelers as issues arise (roadway construction, congestion, emergency closures, etc.) and
    - increase options for pedestrian and bicycle trips.

Pedestrian and Bicycle Transportation

- Burnsville's plan recognizes the importance of non-motorized transportation for the City's youths and sets the stage to improve their lives through better networks. The plan also provides an avenue through which youths can serve as an information resource to improve pedestrian environments.
- Burnsville's plan connects pedestrian transportation and health, especially among youths. County staff look forward to working with the City on the link between the built environment and physical activity, potentially including the active living partnership to which the County belongs.
- Page 26 — Trails map. Dakota County's trail map also shows off-street trails at:
    - CSAH 42 from CSAH 11 to the east City boundary and
    - CSAH 46 in southeast corner of the City.

  The plan should identify maintenance efforts or agreements for trails. (Also includes 3.e. for the proposed Dakota South Urban Regional Trail and 3.g. Big Rivers Regional Trail.)

Transit

County staff applaud the City's efforts to further examine the various ways transit services and facilities can bring mobility and community benefits to residents and businesses.

- As the City is aware, the County is modifying its right-of-way ordinance to allow advertising within transit facilities. The City has been instrumental in this effort, and the County staff looks forward to partnering on this issue.
- The City's efforts to connect Heart of the City to the transit station over TH 13 with an overpass are in line with the County's objectives and will improve transit service.

- County staff applaud the City's support of transitways along I-35W and Cedar Avenue as well as support for high speed rail to increase transit options for Burnsville residents.
- County staff would like to partner with the City on its future traffic demand management activities.
- County staff would like to discuss approaches to realize the City's plans and strategies for expanding transit services.

Land Use

- County staff encourages low-impact, transit-orientated and sustainably designed development projects that consider community, economic and environmental impacts. Through the plan's focus on the Heart of the City, Burnsville continues to lead the way in many of these fields.
- County staff look forward to continuing to work with the City of Burnsville in carrying out the plans to rebuild the Minnesota River Quadrant using sustainable (re)building practices.

Parks, Greenways and Trails

- Burnsville is reaching a fully developed state and has a nearly mature park and trail system. The Burnsville Park System and Trail System plans were prepared in 2000 and are included by reference in the 2030 Comprehensive Plan with updated language to reflect change over the past eight years. County staff referred to these past plans during review of Burnsville's Comprehensive Plan update and found them to be well-considered, providing clear direction for the maturation of Burnsville's parks and trails with an eye to remaining open space opportunities in the City.
- Burnsville's Comprehensive Plan update addresses recommendations from the Metropolitan Council System Statement related to regional parks and recreation facilities in Burnsville. County staff note:
    - Burnsville identifies an extension of the Big Rivers Regional Trail through the City's Minnesota Riverfront to the western City limits, noting that redevelopment of the quarry and landfill will include the trail and new City parks.
    - The regional trail connection between Murphy-Hanrehan and the Minnesota Riverfront is shown on City streets rather than in the rail corridor alignment shown in the Metropolitan Council System Statement. County staff welcome opportunities for future discussion and collaboration with City staff on feasible routes for this trail.
- Burnsville's plans and stewardship of its parks and trails systems exemplify the shared principles that emerged from countywide visioning: sustainability, connectedness, collaboration, economic vitality and growing and nurturing people. Connectedness within the City and into neighboring communities is a strength of Burnsville's extensive trail system.
- A new opportunity that emerged from the 2007 countywide visioning proposes greenways as an expansion of trail system planning. The south metro greenway concept is built on connecting existing parks and open space, natural areas and popular destinations through a green corridor system that predominantly is not aligned with the road network. County staff look forward to working with Burnsville on opportunities for greenways and greenway connections within the City. Although Burnsville is largely developed, there are opportunities for greenways using existing open space (school grounds, parks, ponding areas, natural areas) and with redevelopment, such as the Minnesota Riverfront.

Natural Resources and the Environment

Burnsville's embrace of sustainability as an overarching goal for the 2030 Comprehensive Plan complements the County's comprehensive planning. In addition to including sustainability as a general goal, the definition of sustainability is comprehensive and well-stated. As a local leader in environmentally minded government, Burnsville addresses climate change and the impacts of petroleum consumption in the 2030 Comprehensive Plan. In addition to identifying actions to reduce the impacts of climate change, it would be beneficial to also identify a measure of the collective actions (e.g. greenhouse gas inventory) in this section of the plan.

Dakota County Staff Comments on Burnsville's Comprehensive Plan

Surface Water

County staff supports Burnsville's plan as it relates to surface water. Staff look forward to continuing to work with the City in its efforts to improve surface water quality and quantity.

Water Supply and Sewers

Burnsville's Water Plan is well-written and the County staff believe the plan will provide an excellent framework for managing water emergencies for the communities served by the City while conserving groundwater resources.

Solid Waste

- County staff look forward to continuing to work with the City to reduce waste and preserve natural resources. County staff encourage the City to promote proper waste management and associated energy impacts.
- The City of Burnsville's 2030 Comprehensive Plan illustrates the City's leadership through promotion and education efforts geared toward businesses, schools and residents regarding the benefits of waste reduction, toxicity reduction, recycling and composting. County staff look forward to working with the City in these efforts.
- County staff look forward to a continued partnership to properly close landfills in the City as appropriate.
- In order to be consistent with MN §115A.471 and the Regional/Dakota County Solid Waste Master Plan, it is recommended that the 2030 Comprehensive Plan states that if municipal solid waste from public entity operations is not recycled, it shall be managed at a solid waste processing facility.
- For clarification, Dakota County does not designate to which waste facility private waste haulers deliver solid waste. Haulers are free to take the waste to any licensed waste facility. MN § 115A.02 and the Regional/Dakota County Solid Waste Master Plan prefers all waste is managed in accordance with the State's solid waste management hierarchy (in priority order: waste reduction, reuse, recycling, compost, processing and as last resort, landfill).
- For clarification, there is a single sanitary landfill *located* in the City of Burnsville; it is privately *owned* by Waste Management Inc.

Contaminated Sites

Numerous contaminated sites exist throughout Dakota County and in the City of Burnsville. When planning redevelopment or new development projects, please contact the County Water Resources Department at (952) 891-7000 for assistance in identifying whether such sites exist in the project vicinity so clean-up can be addressed.

Housing and Economic Development

- The Metropolitan Council's current household estimate (updated as of 4/1/07) estimates 24,622 households in Burnsville. Burnsville's plan is compatible with the Metropolitan Council's household forecasts, including 25,200 in 2010, 27,000 in 2020 and 28,700 in 2030.
- The household growth forecast shows an increase of 1,800 units between 2011 and 2020. During that same period, the Metropolitan Council has identified Burnsville's affordable housing needs to be 737 units, or 41 percent of those additional units. Housing units would need to be sold to a household at or below 60 percent of median income. This equates to a maximum price of $158,000, as calculated by the Metropolitan Council. This is a challenge for Burnsville, considering that the plan calls for mostly owner-occupied housing. In order to resolve this issue, the City may need to demonstrate adequate land will be guided to meet that need. Land area to meet affordable housing demand typically is identified as medium-high or high density residential, The City indicates it is 98 percent developed, and that lower-cost undeveloped land is scarce.

- The plan agrees with the Metropolitan Council's employment projections in 2010, 2020 and 2030 for Burnsville.
- The plan has a positive outlook related to sustainable development, mixed-use development and partnerships for job creation, along with opportunities in higher education, arts and culture.

Historic Preservation

Comments from the Dakota County Historical Society staff:

The draft comprehensive plan for Burnsville includes some historically interesting information and points to historic preservation standards employed elsewhere but avoids establishing any kind of commitment to historic preservation for Burnsville. Please note that local ordinances, statutes, codes, standards, etc. are necessary to ensure historic preservation because state and federal guidelines are voluntary and offer no substantive protection independent of local ordinances.

Historic preservation has a wide range of benefits for municipalities and should be encouraged by local governments whenever feasible. Some of the benefits of historic preservation include:

- Lower capital and maintenance costs for utilities due to in-fill development and reuse of existing structures for mixed housing/commercial uses
- Increased stability of property values
- Less construction waste
- Increased local construction spending
- Preservation of existing community space so large future investments to "re-create" lost spaces is not required.

Suggested Changes/Additions

- For legal/accuracy purposes the following words/phrases should be substituted:
  - Chapter II — Page 59 Replace "Sioux" with "Dakota"
  - Chapter II — Page 59 Replace "Native American" with "American Indian"
- Note that treaty language identifies tribes in Minnesota as "American Indians" and this is considered correct as opposed to "Native American," which is commonly used in some states.
- Chapter II — Page 63: Section 12.0 indicates that protection elements are addressed in Chapter VI. Dakota County Historical Society could not identify any protective language for historical or cultural heritage properties in Chapter VI. Burnsville's zoning ordinance also is referenced and again, no language that addresses historic preservation could be found.
- The comprehensive plan should include a statement of support for historic preservation of cultural heritage sites by private parties even if the City is not prepared to actively engage in preservation planning. That support could take the form of directing interested parties to existing resources at the local, state or federal level. At a minimum, the City of Burnsville is encouraged to gather sufficient information as to be a reactive resource for property owners, community members and developers interested in preservation.

Dakota County Historical Society staff suggest that Burnsville consider the following additional actions if the City wants to advance historic preservation:

- Establish a historic preservation commission
- Maintain support materials for property owners and developers, including information regarding national, state and local historical preservation agencies
- Study and develop community-appropriate policies and initiatives
- Revise the Comprehensive Plan to incorporate plans developed by the historic preservation commission (if formed)

Resources available to the City should it want to consider historic preservation include:

- Farmington Comprehensive Plan, chapter 10, City of Farmington
- Donovan D. Rypkema, "The Economics of Historic Preservation," National Trust for Historic Preservation
- "Feasibility Assessment Manual for Reusing Historic Buildings," National Trust for Historic Preservation

PUBLIC FEEDBACK FORM

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

OPEN HOUSE FOR DRAFT PLAN REVIEW

October 23, 2008

Please use this form to write down any comments, suggestions, changes or ideas you have for the 2030 Comprehensive Plan Update. You may leave the form at the meeting or fax, e-mail or mail the form back to the City prior to October 31, 2008 so your comments may be forwarded to the Planning Commission and City Council for consideration.

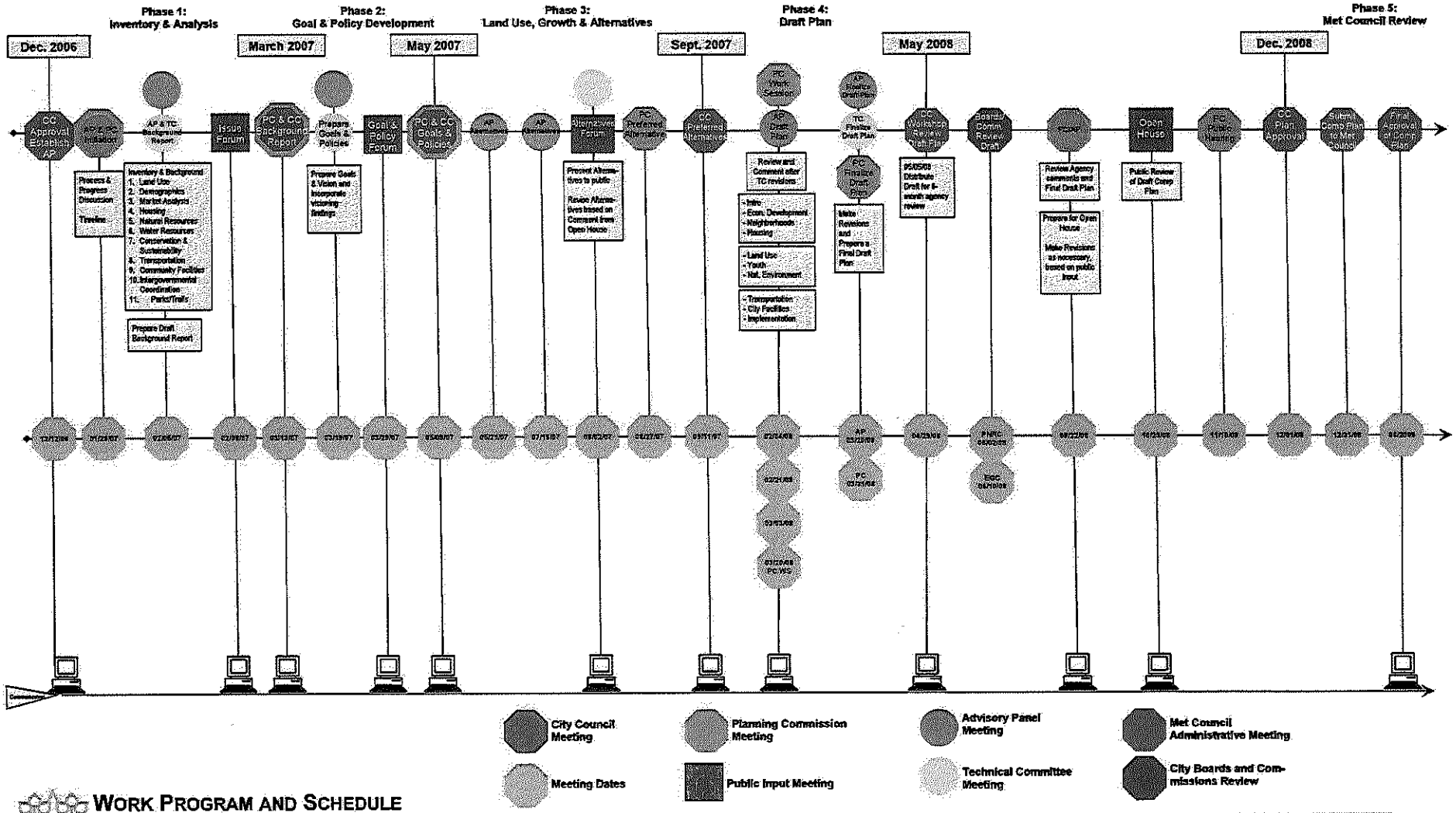
I would Just like to Commend each and every person involved in the Creation of the Comprehensive plan for the City of Burnsville. As a resident who takes alot of pride in the community I greatly appreciate all of the effort and guidance that everyone shows. I am excited for the future of this great city!

City of Burnsville Planning Department ▪ Attn: Deb Garross ▪ 100 Civic Center Parkway ▪ Burnsville, MN 55372-3817 ▪ Fax (952) 895-4453 ▪ Phone (952) 895-4446 ▪ deb.garross@ci.burnsville.mn.us

Here's why the city should favor the change:

1. A stated objective of the new draft plan is that the business community wants the city to pursue ways to attract top level corporate executives to live in Burnsville. The thinking is that if the executives build here, they might bring their companies here, along with great jobs. Southwest Burnsville is the only land available to attract the same kind of million-dollar homes as Sunfish Lake and North Oaks.
   Both of those cities consist of large rural residential estates like ours. Burnsville is squandering this opportunity by allowing the land to be chopped up into little one acre lots.
2. Preserving large lots preserves the benefits Southwest Burnsville now provides the rest of the city:
   a. The current woods, wetlands and fields on private land extend the wildlife habitat beyond the borders of Murphy Hanrehan Regional Park. The park's habitat is well buffered now. Applying a cookie cutter approach to bring about the same development we now see in Forest Park Heights would be a tragedy. The slow turnover of land, often divided only for family members, means the commitment will continue among landowners to preserve and restore habitat. Now landowners are controlling invasive species, such as buckthorn and garlic mustard, and planting trees, shrubs and native plants. This increases the public benefits at no cost to the public.
   b. Sustainable rural development saves the city taxpayers from paying to install costly urban infrastructure. The city has already unnecessarily spent hundreds of thousands of dollars of taxpayer money to put in way oversized sewer and water pipes to serve Forest Park Heights, and the rest of Southwest Burnsville. It's amazing that such expensive infrastructure decisions have been based on the hypothetical, exaggerated, wildly unrealistic diagram of one acre lots overlaid all the land in Southwest Burnsville. It doesn't take into account any of the wetland preservation requirements from the state's Wetland Conservation Act, which didn't exist until the year after this diagram was made. The diagram didn't take into account the intricately folded hills and valleys, which limit development. And it didn't take into account the loss of available land expansion of roads to full the road right of way, as we saw happen on Valley View Drive. And it didn't take into account areas that would serve as storm water detention ponds to reduce storm water impacts to those wetlands.
   c. Current landowners subsidize the city watershed infrastructure with our fees, yet require no city taxpayer expenditures to treat storm water runoff here and cause no runoff to current city storm water treatment zones.
   d. The current rural residential development acts as a giant rain garden, promoting groundwater infiltration that recharges the aquifers from which the city wells draw everyone else's drinking water – all while not using any of that city water. Barr Engineering studies prove our owner-maintained wells cause no impact on the aquifers that feed sensitive natural resources like the Black Dog Fens.
3. It is amazing the city has used the one acre diagram as the guide for development in Southwest Burnsville for so long, considering out outmoded the development scenarios were in 1990.

   a. The plan doesn't take into account current standards limiting development on steep slopes.
   b. The plan doesn't take into account current tree protection standards.
   c. The plan doesn't take into account current limitations on impervious surface.
   d. The plan doesn't take into account the loss of land that will result from road upgrades and reconstructive to current right of way requirements, as we saw on Valley View Dr.



BURNSVILLE

WORK PROGRAM AND SCHEDULE

CITY OF BURNSVILLE COMPREHENSIVE PLAN UPDATE

October 2008

PLANNING COMMISSION MINUTES – NOVEMBER 10, 2008 MEETING

3. Public Hearing – City of Burnsville – Application for Approval of the 2030 Comprehensive Plan Which is an Update Required by Minnesota Statutes and the Metropolitan Council. The Updated Plan Provides Goals, Policies and Strategies to Accommodate Growth Projections for Population, Housing and Employment Through the Year 2030.

Garross presented an overview of the 2030 Comprehensive Plan Update advising that staff recommends that the Planning Commission recommend to the City Council approval of the application.

Esch extended his thanks to Planner Garross, City Staff, fellow Commissioners and everyone for their work through the process and putting together a great plan.

Esch called for questions of staff:

Manhart echoed Commissioner Esch's thanks. He asked about the Dakota County staff comments pertaining to roadway networks and volume capacity ratio specifically why the city was more lax.

Garross deferred the question to the Public Works Director/City Engineer, Bud Osmundson.

Osmundson stated the city's consultant hasn't had time to review the differences. The county used 1999 traffic counts while the city used 2006. Results will be reported back to the Commission.

Esch asked if any suggestions from the Dakota County Historical Society were used in the plan regarding starting a Preservation Society.

Garross indicated that historic site information has been incorporated into the Comp Plan. Also documents from the 1990s pertaining to the Earley Lake area and the park reserve area on the east side of I-35, south of the Minnesota River have been incorporated into the Comp Plan. The Planning Commission can make a recommendation to establish a historical committee if they chose to.

Esch asked about not using the word Sioux but Dakota.

Garross stated they will make those changes.

At 7:21p.m., Esch opened the Public Hearing.

David Geary, 15690 Scenic Lane, Burnsville. He addressed the Commission as a representative of a large group of home owners in southwest Burnsville. He provided a couple of addendums because of petitions done by the group of residents he represented and will be part of the record of the public hearing. A few key points include that Southwest Burnsville is the only place left to provide a place for top-level corporate people to build homes so they want to preserve the two acre minimum. They feel the shortcomings of the one acre plan include:

a. No account for current comp plan restrictions on steep slope development.
b. No account for soil limitations on development
c. No account for wetland preservation (1991 Wetland Conservation Act didn't exist).
d. No account for onsite storm water detention necessary to buffer those wetlands.
e. No account for limits on impervious surface.
f. No account for woodland preservation and tree replacement standards.

g. No account for road construction carving into the full right of way, diminishing lot sizes.

The full document is included as part of record and they have signatures from approximately 65 percent of the residents in southwest Burnsville who have expressed their input. Additional signatures will be sought and submitted to the City Council.

Patrick Julik, 3120 S. Loop Road, Burnsville. He commends the work done in the Forest Park Heights development except for the lack of trees close to the road. He also observed wildlife using the retention pond on site. He is a developer and knows that if sewer and water comes to southwest Burnsville; it will be expensive for the residents without splitting lots. He's not comfortable in deciding the minimum lot size now when it may not happen for 15 or 20 years. There are a lot of unknowns and he doesn't want the city or the landowners to be handcuffed to decisions made now pertaining to the future.

Kathy Griepp, 3220 N. Loop Road, Burnsville. She stated when they bought their property; it was 200 feet of frontage or 2 acre minimum. She didn't know when that changed but would like that brought back to help the expense for the landowners should water and sewer come into that area.

Dan Callahan, 15715 Judicial Road, Burnsville. He worked with the City in 1996 to make the Southwest Urban Policy that is in place currently. He recognized that people have a choice to assemble their land. He supports the two acre minimum so it preserves the potential for high-end housing.

At 7:54 p.m., Esch closed the Public Hearing and called for discussion among the Commissioners.

Garross addressed the concerns from the public hearing. She stated the Southwest Burnsville area will remain guided and zoned R-1A, rural residential in the new plan. She stated the Forest Park Heights area still maintains its Rural Residential land use and development. Out of the 31 acres, 19 lots were developed. That zoning allows development on two acres of buildable area to support two septic locations. A PUD allows lots where public utilities are available to have a one acre lot size or do a density transfer to help reduce street and utility costs. A 1990 Master Plan was developed to see how utilities could be delivered to southwest Burnsville in a loop system that's needed to accommodate the sewer and water system. The Plan did not specify how the area had to be developed but it took into account how properties could be further subdivided at the two acre density and possible one acre density. This Master Plan is used for reference when a land owner comes in to do a waiver of subdivision to divide land or add land, so that the potential to provide utilities in the future is not compromised. There were a number of failing septic systems in the area when the Master Plan was created that now have been taken care of. Further research as part of the 2030 update, showed that the change in lot sizes to one acre was tied to a minor comp plan amendment done in 1994 to take out part of the Southwest Burnsville area from the R-1A which is now R-1. Assessments policies are not part of the Planning Commission review. A task force with Southwest Burnsville residents was created and they recommended the two acre lot size. The City Council ultimately didn't agree and directed staff to develop an amendment for a one acre lot size with utilities. There was a mix of people that wanted to subdivide and others to preserve things. The developer would be responsible to bring in utilities from the existing point to the development so utilities are not forced on others. There are only a few large parcels left to be developed in southwest Burnsville. They are a long distance from existing utilities and plans for development are unknown.

Garross stated based on the testimony of the public hearing, the Planning Commission may want to recommend to City Council to relook at Southwest Burnsville and update the Master Plan based on current information related to slopes, and implications of the Wetland Conservation Act. She added that

there was a lot of study done on behalf of the City Council's review in 1996. Any changes to the assessment policy will be reviewed through the City Council. The assessment policy is not part of the purview of the Planning Commission or part of the land use plan.

There will be a push in legislature to relook at the Dan Patch Line for commuter rail and there is a general knowledge of how the area can be looped for service.

Esch asked if a landowner who doesn't have hookup is penalized for the cost of utilities or assessments.

Garross addressed the question to Osmundson.

Osmundson stated the city doesn't get any money from the water hook-up. The developer would get any prorated part of the hook-up charge for the first 10 years. The property owner is totally responsible for the service to the property as normally. The sewer responsibility is on the city. No one is penalized if they don't have the hook-up.

Esch asked the Commission if they would recommend to the City Council to relook at the Southwest Burnsville area and revisit the 1996 Master Plan and consider a 200 foot or 2 acre minimum.

Dusterhoft: "I agree."

Teiken: "I agree."

Manhart: "I agree as well."

Turner: "I do too."

Garross: "There are differences between assessments for utilities that are put in as opposed to the property valuation and I think residents expressed a concern for valuation also and we don't know what impact that will have."

Esch: "We will recommend that the City Council look at this area again. I hope that will be a little bit of a buffer for you folks."

Turner: "If this was looked at in 1996, I believe there are members of the City Council that were there then."

Garross: "Yes. I don't believe the current Planning Commissioners were part of the 1990 and 1994 study but there are some Council Members."

Turner: "I understand where they are coming from. Burnsville in my opinion lacks acreage for the ½ million plus houses. We have one opportunity to do this however we revisit the comp plan every 10 years and I think in the economic times we are in now, 10 years in not a long time and I think there are some things that are going to drastically change. I really would like to see this revisited at least for right now and knowing that we that we are going to look at it again in 10 years. I think it's fair to look at this as the last area of residential development within Burnsville."

Teiken: "I appreciate the comments from the people that came in tonight. I do see both sides of the issue. If I was a landowner there and I had the money to keep a large parcel of land, I'd like to keep it big but I also see if I needed to sell it for some reason that it would be nice to put it in smaller lots. It is a tough issue."

Manhart moved to approve the 2030 Comp Plan update as conditioned.

1. Incorporation of applicable changes from Dakota County.
2. The plan will not be in effect until the Metropolitan Council approves the plan and subsequent final adoption by the City Council to effectuate the plan occurs.
3. Recommendation that the City Council relooks at Southwest Burnsville area and consider a 2 acre minimum lot size and cost/valuation inputs due to public utilities.

Esch seconded the motion.

Ayes: Dusterhoft, Esch, Manhart, Teiken, and Turner. Nays: Motion to approve passes (5-0).

Deb Garross

.n:	Janell Miersch [Janell.Miersch@dnr.state.mn.us]
Sent:	Friday, November 07, 2008 11:23 AM
To:	Deb Garross
Subject:	Burnsville 2030 Comp Plan
Attachments:	Burnsville.pdf

Hi Deb,

First of all I would like to apologize about the timing of my comments. I fully intended to review and reply much sooner. As a DNR Waters employee, I concentrated on issues in Burnsville's draft 2030 Comprehensive Plan that related to water use and water resources. These are my comments/observations:

Chapter VI Natural Resources - I was pleased to see the reference to the update of FEMA maps that is currently underway (section 3.7). Burnsville also alluded to the shoreland ordinance revisions by the DNR. I have no other comments on this chapter of the Plan.

Chapter X City Services & Facilities Plan - I had received Burnsville's Water Emergency and Conservation Plan (called WSP or Water Supply Plan by the DNR) from Linda Mullen earlier this year, so I took the opportunity to compare that plan to sections 13 & 14 of the Comp Plan 2030. Almost every figure matched with the WSP numbers for prior use and projected demands. The exception to this was found in both Figure 8 (page 35) and Figure 21 (page 45). In the column labeled "average daily use" for the year 2006, there is a discrepancy between the WSP (listed 7.99 MGD) and the Plan (listed 8,155,424 GPD). This is a significant difference of approximately 170,000 GPD. Please double check your figures and let me know which one is r ect. Thank you.
, ough we have not completed the hydrogeological review of the WSP, we immediately recognized that per capita use greatly exceeds the average residential 75 GPCD used by Met Council in the Twin Cites Metropolitan Area. The City will need to take measures to conserve water before the WSP will be approved and DNR Appropriation Permit #1974-5014 can be amended. I will be addressing this issue with Linda Mullen this winter.

Attached is the official response form that was attached to the CD I had received in May.

Thank you for the opportunity to review.

Respectfully,
Janell Miersch

Janell Miersch, South Metro Area Hydrologist

Metro DNR Waters
1200 Warner Rd
St. Paul MN 55106
Direct: 651-259-5776
Main Metro Waters: 651-259-5845
Fax: 651-772-7977

Nov. 6, 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the MnDNR, Waters (Agency Name) has received notice from the City of Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- ☐ This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- ☐ This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- ☒ This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary).

please see email dated 11/7/08

Janell Miersch
Name

11/6/08
Date

Area Hydrologist, DNR
Title

ThreeRivers
PARK DISTRICT

November 4, 2008

Three Rivers Park District Board of Commissioners

Sara Wyatt
District 1

Marilynn Corcoran,
Vice Chair
District 2

M. aggerty
District 3

Dale Woodbeck
District 4

Rosemary Franzese
District 5

irry Blackstad, Chair
Appointed

Joan Peters,
Appointed

Sears
Su tendent

Ms. Deb Garross, City Planner
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337

RE: City of Burnsville 2008 Draft Comprehensive Plan Update

Dear Ms. Garross:

Thank you for the opportunity to comment on the 2008 Draft Comprehensive Plan Update. Three Rivers Park District (Park District) currently owns and operates Murphy-Hanrehan Park Reserve which partially resides within the City of Bursville (City).

Park District staff prepared the following comments for consideration in the City's Comprehensive Plan.

General Land Use Plan
In general, the Park District is not an advocate or opponent of the proposed land use plan; however, the Park District is an advocate for protecting natural resources especially in terms of protecting and maintaining water quality, native and intact plant communities, and unique and rare wildlife. Therefore, the Park District supports land uses which conserve, protect, and enhance the region's vital natural resources.

In addition, and in accordance with Park District policy, the Park District will oppose any proposed land use that will result in the degradation of water quality in water bodies within or continuous to its holdings below the 1989 levels. Impact to water bodies within and continuous to Park District holdings cannot be determined from the proposed land use plan; therefore, the Park District requests the right to review and comment on development plans for properties which may impact water bodies within and continuous to Park District holdings.

Natural Open Space Buffer
The Natural Resource Environment Plan includes a policy to establish buffer standards (minimum 50') for lands located adjacent to natural open space such as Murphy-Hanrehan Park Reserve (page VI-2). This policy, when implemented, will aid the City in the protection and integrity of critical natural resources for future generations.

Proposed Regional Trails
Murphy-Hanrehan Park Reserve protects one of the last large mature mesic oak forests in the metropolitan area and the second largest prairie within the Park District's regional parks and trail system. To preserve and protect this natural resource jewel, the park reserve is planned to offer a diversity of recreational opportunities appropriate to the semiprimitive nature of this park reserve. Regional trails can be accommodated without significant impact to the natural resource or semiprimitive character of the park reserve if located on the periphery.

The regional trails and parks map within and adjacent to the City illustrates a regional trail search corridor bisecting the central core of the park reserve. Although the graphic diagrams a regional trail search corridor and not a regional trail alignment, it is important to recognize that regional trails will be restricted to the periphery of Murphy-Hanrehan Park Reserve.

The location of the proposed regional trail is accurately depicted on the periphery of the park reserve as existing or proposed trails on the City of Burnsville Park System Map (page A-9). However, the City may consider depicting the proposed regional trails as a separate classification rather than combining all trails into the same classification.

In addition, the regional trail implementing agency(ies) shall consider how the proposed regional trail will provide both opportunity and challenge to the recreational amenities as well as the natural resources within the park reserve. The Park District requests the right to participate in and comment on the planning and development of the proposed regional trail within and/or adjacent to Murphy-Hanrehan Park Reserve to minimize potential impacts to property, natural resources, and recreational amenities.

Development of the regional trail within Murphy-Hanrehan Park Reserve will require approval by the Park District Board of Commissioners prior to development.

Joint Powers Agreement with Scott County
The City Services & Facilities Plan references a joint powers agreement between the Park District and Scott County (pages IX-24 and A-65). The Park District and Scott County no longer operate under a joint powers agreement and instead operate under an annual Memorandum of Understanding. Under the annual Memorandum of Understanding, the Park District owns and provides recreation services for Murphy-Hanrehan Park Reserve and Scott County is responsibility for development, operation, and maintenance of all other existing and future regional parks and trails within the County.

Please update the reference to the joint powers agreement between the Park District and Scott County to reflect the current annual Memorandum of Understanding.

Water Resources
The 2008 Draft Comprehensive Plan Update summarizes the Local Surface Water Management Plan (LSWMP) and addresses the three most important components: statement of detailed numeric water quality goals; discussion of whether the goals are currently being achieved; and discussion of the actions needed to be taken to achieve and/or maintain compliance with the water resource goals.

However, the LSWMP was completed in 2002 and thus, does not reflect recent changes in water quality regulation set fourth by the Minnesota Pollution Control Agency, specifically the Total Maximum Daily Load program and the surface water quality numeric standards.

Please include in the 2008 Draft Comprehensive Plan Update a summary of how the LSWMP will be updated to address the recent changes in water quality regulation.

Thank you for the opportunity to review and comment on the 2008 Draft Comprehensive Plan Update. Please continue to include the Park District in future comprehensive plan meetings and correspondences as they relate to the items outlined above.

Sincerely,

Kelly Grissman, Planner
Department of Planning and Development

J:\DEVELOPMENT STAFF\Kelly\Comprehensive Plan Review\Burnsville\11-04-08 Burnsville Comp Plan.doc

11.6 , 2008
(Date)

Deb Garross
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337-3817
Phone: 952-895-4446
Fax: 952-895-4453
E-mail: deb.garross@ci.burnsville.mn.us

RE: Agency Response to Burnsville 2030 Comprehensive Plan Update

Please be advised that the CITY OF APPLE VALLEY has received notice from the City of
(Agency Name)
Burnsville of its 2030 Comprehensive Plan Update.

(Check Applicable Box)

- [x] This agency has received and reviewed the Burnsville 2030 Comprehensive Plan Update and does not have any comments or revisions.
- [ ] This agency will submit written comments on the Comprehensive Plan Update by November 6, 2008. If comments are not received by the City of Burnsville by this date it is assumed that no impact to this agency is anticipated.
- [ ] This agency has received and reviewed the above listed Comprehensive Plan Update and we have the following comments or revisions. (Please attach separate sheets if necessary)

Name

Date 11.6.08

CITY PLANNER
Title

SUBMITTED at 11/10/08 Public Hearing

Here's why the city should favor making two acres the future development standard :

The 2030 draft plan says there is a need to provide:

> "...more, higher value homes as part of Burnsville's residential housing mix. This objective was also recommended from the business community and residents as part of the Visioning and public input processes for this 2030 Plan...Pockets of "executive"- type housing have been developed on the few remaining larger tracts of low density residential guided lands."

Southwest Burnsville is the only place left. The idea is to provide a place for top-level corporate people to build homes, so they keep their businesses in Burnsville, or move them here, bringing more jobs.

Chopping up Southwest Burnsville into one acre lots diminishes the opportunity. The cities of Sunfish Lake and North Oaks are succeeding in attracting high-end housing by keeping large rural residential lot development standards. Preserving a two acre minimum here preserves the wooded seclusion and privacy people desire, no matter how much money they make.

The policy will help current residents living in modest homes stay on their land. The conservative development approach of adding one or two homes every couple of years has worked since the village of Orchard Gardens was platted in 1910. It also has promoted environmental stewardship, built a strong neighborhood identity, supported self-sustaining development and encouraged redevelopment. People are replacing homes with bigger ones on the same lot. They are not increasing the demand for city services, yet increase the city's tax base—all without hurting their neighbors or the neighborhood. Not like the radical development on Valley View Drive, where 19 houses are replacing two.

The developer ran sewer and water past the neighbors' homes. They'll pay much higher property taxes every year. The county will increase property values, regardless of their connection to utilities. The city hit them with expensive street assessments, not covered by the utility policy. So the neighbors still have high bills to pay, and must sell land to pay for them. To be fair, the two acre minimum should not apply to those neighbors or anyone else with access to sewer and water before Jan. 1, 2009.

With two acre consistency, the 2030 Draft Plan needs to remove references to the 1990 hypothetical one-acre lot design for Southwest Burnsville. The city has come a long way since 1990. Yet this misleading one-acre plan has been guiding city development decisions. It's time to remove this outmoded plan and view Southwest Burnsville in reality. The one-acre plan's shortcomings include:

a. No account for current comp plan restrictions on steep slope development
b. No account for soil limitations on development
c. No account for wetland preservation (1991 Wetlands Conservation Act didn't exist)
d. No account for onsite stormwater detention necessary to buffer those wetlands
e. No account for limits on impervious surface
f. No account for woodland preservation and tree replacement standards
g. No account for road construction carving into the full right of way, diminishing lot sizes.

Meanwhile, we're a giant rain garden. Our thick layers of soil filter out contaminants before water reaches the bedrock, which the city uses for drinking water. We don't use any of the city's water. We also subsidize the city's stormwater infrastructure. We pay watershed fees, but don't create runoff to city storm sewers. Our topography encourages more earth homes like the one on Scenic Lane. And the 2030 plan could look to us, when it calls for development "preserving and incorporating outstanding natural features (woodlands, steep slopes, wetlands etc.)" Landmark Orchard Gardens still has shady country lanes, horses, and homes that deeply connect the city to its past. Making Southwest Burnsville a consistent two-acre development area will help preserve 'a sense of place' for it and for the city.

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development iudefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Jim Ostroot	1010 Sumac Ln.	11-6-08	Jim Ostroot
Deb Ostroot	"	"	Deborah A. Ostroot
Dorothy Ackerman	"	11-9-08	Dorothy J. Ackerman
Arno A. Schutt	1908 Sumac Ln.	11-10-08	Arno A. Schutt
DeLores F. Schutt	1908 Sumac Ln.	11-10-08	DeLores F. Schutt
Diane Brettschneider	2000 Sumac	11/10/08	[illegible]
Diane Brettschneider	2000 Sumac Lane	11/10/08	Diane Brettschneider
THOMAS H. DUFFY	2904 N. LOOP DR. BURN. MN.	11-10-08	THOMAS DUFFY
BRAD DUFFY	2900 N. LOOP	11-10-08	[illegible]
GEORGE DUFFY	3107 N. LOOP	11-10-08	[illegible]
SIVERT O. HENDRICKSON	2005 SUMAC LN	11/10/08	[illegible]
Michael McNeely	1900 Sumac Lane	11-10-08	[illegible]

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
3.5 acre Kevin & Julie Fossum	15520 Judicial Rd	10-11-08	Julie Fossum
Jim & Nancy Lunebourg	15608 Judicial Rd Burnsville	11/10/2008	

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Thane Hathaway	1930 Alcana Lane	11/9/08	[illegible]
Barry Johnson	2000 Alcana Lane	11/9/08	Barry Johnson
[illegible]	2200 Alcana Lane	11/9/08	[illegible]
Sharon Wentzel	2421 Alcana Ln Burnsville	11/9/08	Sharon M. Wentzel
Mike Schroeder	2401 Alcana Lane	11/9/08	[illegible]
Carl Oest	2301 ALCANA LN	11/9/08	[illegible]
Pat Wolf	2205 Alcana Lane	11/9/08	[illegible]
Nicole M. Hathaway	1950 Alcana Ln.	11/10/08	Nicole M. Hathaway

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Susan D Toms	15612 Scenic Ln	11/9/08	Susan D Toms
Tom Toms	15612 Scenic Lane	11/9/08	Tom Toms
Toms Sandra Klamm	15701 Scenic Ln.	11/9/08	Sandra Klamm
Mary Weichelt	15720 Scenic Ln	11/9/08	[illegible]

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Brian Koshenina	2905 Loop Rd So	Nov 9 2008	
R. T. Eschinger	2803 S. Loop	11-9-08	
Ruth Zouzevambe	2609 Loop Rd S	11-9-08	
Roxanne Carlson	2101 So Loop Rd	11-9-08	
Christine Savard	2712 N. Loop Rd	11-9-08	Christine Savard
Amy Faunt	2820 N. Loop Rd	11-9-08	Amy Faunt
Maggie Anderson	3004 Brown Ln. Burnsville	11-9-08	
Cindy Savard	3280 N Loop Rd Bville	11/9/08	Cindy Savard
Tim Morrow	3420 Davids Ct Bville	11/9/08	
Marcie Bertamus	3430 Davids Ct Brville	11/9/08	
Anna Benge	3430 Davids Ct Brville	11/9/08	
Joy Simonsen	3410 Davids Ct Brsville	11/9/08	
MARY ELLEN AMODEO	15513 LOOP RD BURNSVL	11/9/08	
JILL RONNING	2605 LOOP RD S BURNSVILLE	11/10/08	Jill M Ronning
Jim Sparrigl	3015 So Loop Rd Burnsville	11/10/8	

2 Not home
12/15 - 1 Against (owner of < 1 Acre)

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Barbara Saylter	15350 Oriole Ct	11/9	Barbara Saylter
Denise Tousley	15360 Oriole Ct	11/9	[illegible]
LANCE FREE	15401 ORIOLE CT	11-09	[illegible]
Vonda BEZAT	15480 ORIOLE CT	11/09	[illegible]
[illegible] Bernard	3012 Valley View Rd	11/9	[illegible]
[illegible]	3108 Valley View Rd	11/9	[illegible]
Jason Andresen	2960 Valley View Rd	11-9	[illegible]
[illegible]	2905 [illegible]	11-9	[illegible]
JOHN [illegible]	15430 ORIOLE CT	11-9	[illegible]
Bill Dumler	15400 Oriole Ct	11-10	[illegible]
Lisa Jansen	2809 Valley View	11-10	[illegible]
Tom Kraus	2605 Valley View Rd	11-10	[illegible]

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
E. Rodney Geary	15701 Judicial Rd	6 Nov '08	E Rodney Geary
Victor Dudley	3005 South Loop Rd.	Nov. 6-08	[illegible]
Joan Eggen	15708 Judicial Rd.	11-6-08	Joan Eggen
Pat Flaherty	3104 So Loop Rd	6 Nov 08	Pat Flaherty
[illegible]	15600 Scenic Ln.	11-6-08	[illegible]
Tom & Jean Stark	15611 Scenic Ln	11-6-08	[illegible]
David & Stephanie Geary	15690 Scenic Lane	11-6-08	[illegible]
DANA & BARBARA CALLAHAN	15715 JUDICIAL RD.	11/8/08	[illegible]
Tom Olsen	15725 Judicial	11/8/8	Thomas K Olsen
Burke & Karen Mosley	15720 JUDICIAL	11/8/08	D Burke Mosley
Lynn Berle	15613 Judicial Rd	11-8-08	Lynn Berle
Chris Berle	15613 Judicial Rd	11-08-08	Chris Berle
Dan & Sue Schmitt	15218 Judicial Rd	11-08-08	Dan Schmitt
Dan & Sue Schmitt	2704 Loop Rd South	11-08-08	Dan Schmitt
Joseph & Ellen Coffey	2420 O'meara Court	11-08-08	Joseph C Coffey
Christopher Ward	2421 O'meara Court	11-08-08	Chr. Ward
Ursula Peterson	15605 Judicial Rd	11-8-08	U. Peterson
Amy Ketchum	2300 O'Meara Ct.	11/08/08	Amy Ketchum
Amy Paschke	2208 W 155th St.	Burnsville	11/9/08
Matt Egan	2113 W 155th st	Burnsville	11-9-08 Matt Egan
Steve Swartz	15720 Crest Dr	Burnsville	[illegible]
Jill Swartz	15720 Crest Dr.	Burnsville	Jill Swartz

Judicial - scenic lane

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

The city should discard the outdated Southwest Area Services plan and put into practice measures that will support continued sustainable development indefinitely on at least two acre minimum lot sizes, excluding steep slopes and wetlands, with space for a secondary drain field should the primary one fail – and to maintain those land restrictions regardless of subsequent access to municipal sewer and water services.

Name	Address	Date	Signature
Robert Thy	1608 W 155th	10-6-08	
PAUL CLARBY	1508 W 155 St	9 NOV 08	
Shaine Anderson	1804 W. 155th St	11/9/08	Shaine Anderson
Albera Frazier	2209 155th St.	11-9-08	Albera Frazier
KAREN KRausen	2301 O'meara Ct	11/9/08	Karen Rausen
Brian WILLIAMS	2400 O'meara Ct.	11-9-08	Brian Williams

155th St.

We, the undersigned owners of land in southwest Burnsville, want the city to use its 2030 Comp Plan Update to specifically remove diagrams, figures and references supporting one-acre minimum lot development, excepting properties which have access to sewer and water as of January 1, 2009.

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Name	Address	Date	Signature
DEBRA MOWERS-BROWN	1912 W 155th Burnsville 55306	11.8.08	[illegible]

Deb Garross

ı:	cttomr@frontiernet.net
Sent:	Friday, November 07, 2008 2:24 PM
To:	Deb Garross
Subject:	Comments on Plan Update

Ms. Garross:
I submit the following comments:
1. Because of long term changes in national economic conditions, many assumptions and much data will need to be changed.
2. A much higher human capital priority (and payoff) than youth and the elderly are children 0-5 and their young parents.
3. Plans need execution strategies and priorities. In our 32 years in Burnsville, we have seen great plans and poor execution. The City does not have the staff resources to execute this update. That may indicate that the governing body and management are not serious about the plan.
4. The Introduction talks about possible new parks. The City cannot maintain most existing parks.
5. The natural environment section is technically thorough, but the City does poorly with a relatively simple dimension: the visual/aesthetic qualities of the environment.
6. Was the statement on weed control on public property humorous? The City does not control weeds around the perimeter (such as gutters) of Greenhaven Park. (I do that) 7. Re neighborhoods and infill and construction site pollution/degradation, we are reminded that the City, during the past two years has created, with infill, a visual disaster in the Greenhaven neighborhood.
8.Re sign control, hopefully control will eliminate city signs advertising businesses and service clubs that pick up trash (the signs offset the good works).
9. Re more retail zoned land, the city already has far more than it needs thank you.
Re Burnsville Center development issues, the the auto sales parcels to the south are still a blight upon the Greenhaven neghborhood.
Thankyou,
CT Rice, 15253 Greenhaven Way

Deb Garross

From: Ryan Peterson
Sent: Monday, November 24, 2008 2:01 PM
To: Chris Slania; Bud Osmundson; Bonnie Buck; Deb Garross; Jenni Faulkner
Subject: FW: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes

Importance: High

Ryan Peterson | Assistant City Engineer
100 Civic Center Parkway | Burnsville, MN 55337
952-895-4459 ryan.peterson@ci.burnsville.mn.us| 952-895-4404 fax|
www.burnsville.org

From: Curtis Quady [mailto:cequady@msn.com]
Sent: Monday, November 24, 2008 1:48 PM
To: Ryan Peterson
Cc: 'Curtis Quady'
Subject: FW: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes
Importance: High

Ryan,

As I made reference to the letter I sent to you on Oct. 15th, I thought you would be interested in this letter also.

Regards,

Curt

From: Curtis Quady [mailto:cequady@msn.com]
Sent: Monday, November 24, 2008 1:04 PM
To: 'Chris Slania'; mayor@ci.burnsville.mn.us; council@ci.burnsville.mn.us
Cc: 'Curtis Quady'
Subject: Review of November 10, 08 Burnsville Planning Commission's Southwest Video Minutes
Importance: High

Chris,

As promised, I reviewed the video minutes of the Planning Commission's November 10, 2008 minutes as it applies to the discussion on minimum acreage zoning and development in Southwest Burnsville.

I am of the opinion that this discussion ended with the unanimous vote of the Commission and judgment of Chairman Michael Esch that this subject be remanded to the City Council for further study. I agree with that rational conclusion.

In my review of the Commission's minutes I viewed testimony from four (4) residents of Southwest Burnsville and Commission members speak to various topics and issues such as:

- opinions of resident surveys
- impacts of taxation and assessments
- fair and impartial methodology determining burden and affordability in payment of taxation and assessments (of residents)
- use of or rejection by residents of sewer and/or water should it become available
- valuation of property with and without change in minimum acreage zoning and water and sewer availability
- damage to the natural infrastructure including flora and fauna
- long-term target audience use
- esthetic and amenities design and impact
- carry-over of lessons learned and to be learned from the maturing of the immediate past residential development at the far west end of Valley View Drive – nineteen (19) lots not yet built upon
- short and longer term impacts of the present down-turn in the local and national-international economy and relationship to the City's and residents' financing and carrying of dept burden, etc.

In all of this testimony leading up to Chairman Esch's unanimous and, I believe, proper decision, I heard no agreement, but only many ensuing questions that begged for future inquiry, discovery of fact and then, perhaps, changes to existing assumptions and zoning.

The decision as to what is best for Southwest Burnsville and the City as a whole – citizens present and future, business, tourism, investment, the environment and the City - should be a thorough and thoughtful study that fairly represents all of the constituent or concomitant parts therein; what I believe was accomplished at the November 10, 2008 Commission meeting was the beginning of that necessary process. In my letter to the City dated October 15, 2008, regarding 2009 Planned Judicial Road Construction and Consideration of Possible Water and Sewer Improvements, I requested more information in order to make an informed decision. For me, I find myself in a similar posture regarding the issues herein. Since time is not of the essence and a decision is not needed immediately, as Chairman Esch and the Commission reasoned, I would also cordially recommend further study to find the best long-term solution to these very important issues.

One thing I believe we all presently agree upon, that is Southwest Burnsville is a most beautiful and unique – one of a kind – area that has great existing value and an even greater potential value to all of it's residents, and the City as a whole. Therefore, only a long-term answer of equal quality should be demanded by all. As a community, we can afford to accomplish this only once.

Sincerely,

Curtis Quady
2704 Wren Court
Burnsville, MN 55306
Mail only to:
PO Box 939
Burnsville, MN 55337
cequady@msn.com

APPENDIX S – ADDITIONAL MET COUNCIL TABLES

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

FORECAST TEMPLATES

MUNICIPALITIES WITH BOTH SEWERED AND UNSEWERED DEVELOPMENT

Forecast Table

	1990	2000*	2010	2020	2030	Change 2000-2030
Total Population		60220	61400	63000	65000	4780
Sewered	N/A	59895	61090	62692	64756	4861
Unsewered	N/A	325	310	308	244	-81
Total Households		23687	25200	27000	28700	5013
Sewered	N/A	23559	25072	26866	28591	5032
Unsewered	N/A	128	128	134	109	-19
Total Employment		31765	37700	41200	43300	11535
Sewered	N/A	31735	37670	41170	43280	11545
Unsewered	N/A	30	30	30	20	-10

*2000 population and households from 2000 US Census, employment from DEED estimates.

MUNICIPALITIES WITH EITH SEWERED OR UNSEWERED DEVELOPMENT

Forecast Table **N/A**

	1990	2000*	2010	2020	2030	Change 2000-2030
Total Population						0
Total Households						0
Total Employment						0

*2000 population and households from 2000 US Census, employment from DEED estimates.

Net Residential Density Worksheet

Table Calculating Net Density of Residential Development

Land Use	Single Family # of Units	Multi Family # of Units	Acres Gross Resid.	Acres Wetland & water-bodies	Acres Public Parks & Open	Acres Arterial Roads ROW	Acres Other Undevel-oped	Net Residential Acres	Net Density Units/Acre
	A	B	C	D	E	F	G	H=C-D-E-F-G	(A+B)/H
Rural Residential	245		556	14	0	0	0	542	0.45202952
Low Density Residential	11420		4453	26	0	0	0	4427	2.579625028
Med. Density Residential	1024	3070	649	21	0	0	0	628	6.51910828
High Density Residential		9058	672	2	0	0	0	670	13.51940299
Heart of the City		487	16	0	0	0	0	16	30.4375
MIX		1422	76	2	0	0	0	74	19.21621622
								0	#DIV/0!
								0	#DIV/0!
								0	#DIV/0!
								0	#DIV/0!
								0	#DIV/0!
TOTAL	**12689**	**14037**	**6422**	**65**	**0**	**0**	**0**	**6357**	**4.204184364**

* Describe on a separate page any other undeveloped land that does not fall under wetlands and water, public parks or arterial roads, including steep slopes or outlots for future or commercial development.

LAND USE TABLE IN 5-YEAR STAGES

Existing and Planned Land Use Table (in acres)

	Within Urban Service Area	Allowed Density Range Housing Units/Acre Minimum	Maximum	2009	2010	2015	2020	2025	2030	Change 2000-2030
	Residential Land Uses									
	Low Density Rural Residential	0.5	1.0	57	42	27	22	20	5	-52
	Low Density Residential	2.0	3.5	58	58	33	25	0	0	-58
	Medium Density Residential	4.0	8.7	3	3	0	0	0	0	-3
	High Density Residential	9.0	21.78	9	9	5	0	0	0	-9
3	Vacant N'hood Oriented MIX	15.0	21.78	28	28	14	0	0	0	-28
5	MRQ Residential Concept	14.0	62	18	18	18	13	10	10	-8
4	HOC Vacant Residential	21.8	56.52(a)	1	1	1	0	0	0	-1
4	HOC Residential - Approved Plans (Actual #'s)	49(b)	49(b)	5	3	2	0	0	0	-5
1	Neighborhood Center Plan Areas1	4.0	8.70	40.5	40.5	30.5	20	10	0	-40.5
2	Neighborhood Center Plan Areas2	9.0	21.78	40.5	40.5	30	10	10	0	-40.5
6	B-Zones Assisted Living/Long Term Care Units (Figure 20)	(a)18	(b)26	46	46	23	14	14	0	-46
	C/I Land Uses	Est. Employees/Acre								
	Commercial									
	Rural Residential 2.5 acres or less									
	Open Water, Rivers and Streams	--	--							
	Total									

* For Mixed Use categories include information regarding the estimated minimum and maximum housing density ranges and acres/percentage of residential use.

Figure 9
Vacant Land by Zoning District

Zoning District	Gross Acres	% of Total Gross Vacant Acres	Net Acres*	% of Total Net Vacant Acres
B-1 - Office Business	28	7%	26	7%
B-2 - Neighborhood Business	5	1%	5	1%
B-3 - General Business	32	8%	31	9%
B-4 - Highway Commercial	38	10%	38	11%
GIH - Gateway Industrial - Heavy	11	3%	11	3%
GIM - Gateway Industrial - Medium	50	13%	45	13%
HOC-1 - Heart of the City 1	64	1%	64	1%
HOC-2 - Heart of the City 2	46	2%	46	2%
I-1 - Industrial Park	8	2%	8	2%
I-3 - Office and Industrial Park	24	6%	24	7%
R-1 - Single Family Residential	67	18%	58	16%
R-1A - Single Family Rural Residential	59	16%	57	16%
R-2 - Two Family Residential	2	1%	2	<1%
R-3A - Medium Density Residential	3	1%	3	<1%
R-3B - High Density Residential	9	2%	9	3%
R-3C - Regional Center Residential	28	7%	28	8%
PK – Park	6	2%	5	1%
Total	**380**	**100%**	**360**	**100%**

*Source: Bonestroo (*Net acres calculated as gross acres less wetlands/lakes and R-O-W)*

source: p. II-16 [pdf 58]

Figure 19
Vacant Residential Land Availability

Land Use Type	Gross Vacant Acres	Net Acres	Density Range (units/acre)	Potential Units Gross	Potential Units Net
Rural Residential	59	57	0.5 – 1.0	30 - 59	29 - 57
Low Density Residential	67	58	2 - 3.5	134 - 235	116 - 203
Medium Density Residential	3	3	4 - 8.7	12 - 26	12 - 26
High Density Residential	9	9	9 - 14.52	81 - 131	81 - 125
HOC - Residential	1	1	21.78 – 56.92*	22 – 57	22 - 57
-Neighborhood Oriented Mixed Use	28	28	15 - 21.78	420 - 610	420 - 616
Total				**699 – 1,118**	**680 – 1,084**

** Actual HOC Residential Density per PUD Approvals*
Source: Bonestroo

Figure 20
Summary of Assisted Living/Residential Care Facilities 1990 - 2009

Project Name	Project Type	Net Acres	# Units	Density
Grandview Commons	Concept	3.0	60	20.00
Presbyterian Homes	Concept	6.0	174	29.00
Dakota CDA – Valley Ridge Mall Site	Concept	7.0	140	20.00
Donnay At Buck Hill	Approved (2009) Not Built	4.2	70	16.67
Regent at Burnsville	Built (2003)	5.3	136	25.66
Grammercy Club	Built (2001)	9.38	126	13.43
Ebenezer Ridge Point Apartments	Built (2001)	1.93	42	21.76
Arbors at Ridges	Built (2001)	2.33	45	19.31
Meadowood Village	Built (1995)	21.6	96	4.44
Park Ridge Place	Built (1998)	2.53	66	26.09
Parkway Cooperative	Built (1996)	8.24	102	12.38
Realife Cooperative	Built (1996)	9.28	221	23.81
Rivers Manor	Built (1998)	12.37	178	14.39
Emerald Crest	Built (1999)	3.79	60	15.83
	Averages for 10 Built Projects	**7.6**	**107**	**18**

Figure 14
Neighborhood Centers Summary Table

Neighborhood Centers	Total		Average	
Acres	81	-	4	-
Ground Floor Retail Square Feet	353,097	-	16,814	-
Retail/Office Mix Square Feet	353,097	-	16,814	-
Medium Density Housing Units (8 u/p/a)	324	-	15	-
High Density Housing Units (14 u/p/a)	567	-	27	-
Required Green Space (SF/Acres)	900,167	21	42,865	1.0
Impervious Coverage (SF/Acres)	2,700,502	62	128,595	3.0
Gallons Wastewater	282,422	-	13,449	-
Water Supply	310,644	-	14,794	-
Storm water Ponding (SF/Acres)	540,100	12	25,719	0.6
Parking Stalls	6,019	-	287	-
Transit Trips	639	-	30	-
Trips Generated	22,029	-	1,049	-

Notes

1 Sources: Figure 14 and Appendix T
2 Table 14 81 acres total. Appendix T evenly splits residential land use between Medium-Density and High-Density Residential.
40.5 acres assigned to min. 4.0 u/a for MDR and 9.0 u/a for HDR
3 Source: Figure 19
4 (a) 56.52 is the actual density of the Sherman-Knight Seed PUD in HOC (highest density project approved to date)
(b) 49 u/p/acre is the average actual density of multi-family projects approved in the HOC
5 Source: Figure 17 MRQ Uses by District Summary
6 Source: Chapter II, pages 27- 28
(a) Figure 20, minimum density based on actual average density of 10 projects constructed over past 20 years
(b) Figure 20, maximum density based on actual highest density of 10 projects constructed over past 20 years

The figures provided for this Land Use Table in 5-Year Stages are estimates only and do not bind the city to any specific numbers for affordable housing. Specific affordable housing goals will be determined through future LCA agreement negotiations with the Metropolitan Council.

Figure 17
MRQ, Uses by District Summary *(in square feet)*

	Office/Office Showroom	Commercial/ Mixed-Use	Industrial	Medical Technical Campus	Town homes	Multi-family	Hotel
Area A	-	901,000	160,000	-	160 units	730 units	-
Area B	1,419,642	128,850	-	-	88 units	390 units	775 rooms-suites; 117,600sf
Area C	945,048	82,473	322,932	1,012,937	-	-	-
Area D	247,286	254,936	183,965	-	-	-	-
Total	**2,611,976**	**1,367,259**	**666,897**	**1,012,937**	**248 units**	**1,120 units**	**117,600**

APPENDIX T – NEIGHBORHOOD CENTER YIELD PLANS

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

Burnsville Auto Center

Site Characteristics						
Acres	2.03	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.68	0.68	0.68	0.68	
Total Building Square Feet		8,843	8,843		11,368	**29,053**
Total Site Square Feet		29,476	29,476		29,476	**88,427**
Total Units				14.2	8.1	**22.3**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	7368.90	7368.90		7368.90	**22106.70**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	22,107	22,107		22,107	**66,320**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	677	677	3,553	2,030	**6,936**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	744	744	3908	2233	**7629**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	4421.340	4421.340		4421.340	**13264**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	59.0	44.2	28.4	16.2	**147.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	23,580	17,685	11,368	6,496	**59,130**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	10,316	7,737	4,974	2,842	**25,869**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	8.7	2.8	2.8	1.4	**15.7**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	301	97	95	48	**541**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnsville Plaza

Site Characteristics						
Acres	4.11	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		1.37	1.37	1.37	1.37	
Total Building Square Feet		17,903	17,903		23,016	**58,822**
Total Site Square Feet		59,677	59,677		59,677	**179,032**
Total Units				28.8	16.4	**45.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	14919.30	14919.30		14919.30	**44757.90**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	44,758	44,758		44,758	**134,274**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	1,370	1,370	7,193	4,110	**14,043**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	1507	1507	7912	4521	**15447**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	8951.580	8951.580		8951.580	**26855**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	119.4	89.5	57.5	32.9	**299.3**
	Surface Parking Footprint (SF) (Stalls x 400SF)	47,742	35,806	23,016	13,152	**119,716**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	20,887	15,665	10,070	5,754	**52,376**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	17.7	5.7	5.6	2.8	**31.8**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	609	197	193	96	**1,095**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Byerly's Burnsville Centre

Site Characteristics						
Acres	**6.14**	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		2.05	2.05	2.05	2.05	
Total Building Square Feet		26,746	26,746		34,384	**87,876**
Total Site Square Feet		89,153	89,153		89,153	**267,458**
Total Units				43.0	24.6	**67.5**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	22288.20	22288.20		22288.20	**66864.60**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	66,865	66,865		66,865	**200,594**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	2,047	2,047	10,745	6,140	**20,978**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	2251	2251	11820	6754	**23076**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	13372.920	13372.920		13372.920	**40119**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	178.3	133.7	86.0	49.1	**447.1**
	Surface Parking Footprint (SF) (Stalls x 400SF)	71,322	53,492	34,384	19,648	**178,846**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	31,203	23,403	15,043	8,596	**78,245**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	26.4	8.5	8.4	4.2	**47.5**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	909	294	289	144	**1,636**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Cliffview Plaza

Site Characteristics						
Acres	2.05	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.68	0.68	0.68	0.68	
Total Building Square Feet		8,930	8,930		11,480	**29,340**
Total Site Square Feet		29,766	29,766		29,766	**89,298**
Total Units				14.4	8.2	**22.6**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	7441.50	7441.50		7441.50	**22324.50**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	22,325	22,325		22,325	**66,974**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	683	683	3,588	2,050	**7,004**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	752	752	3946	2255	**7705**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	4464.900	4464.900		4464.900	**13395**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	59.5	44.6	28.7	16.4	**149.3**
	Surface Parking Footprint (SF) (Stalls x 400SF)	23,813	17,860	11,480	6,560	**59,712**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	10,418	7,814	5,023	2,870	**26,124**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	8.8	2.8	2.8	1.4	**15.8**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	304	98	96	48	**546**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Colonial Ridge

Site Characteristics						
Acres	1.97	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.66	0.66	0.66	0.66	
Total Building Square Feet		8,581	8,581		11,032	**28,195**
Total Site Square Feet		28,604	28,604		28,604	**85,813**
Total Units				13.8	7.9	**21.7**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	7151.10	7151.10		7151.10	**21453.30**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	21,453	21,453		21,453	**64,360**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	657	657	3,448	1,970	**6,731**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	722	722	3792	2167	**7404**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	4290.660	4290.660		4290.660	**12872**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	57.2	42.9	27.6	15.8	**143.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	22,884	17,163	11,032	6,304	**57,382**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	10,012	7,509	4,827	2,758	**25,105**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	8.5	2.7	2.7	1.3	**15.2**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	292	94	93	46	**525**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Eagle Trace Center

Site Characteristics						
Acres	1.11	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.37	0.37	0.37	0.37	
Total Building Square Feet		4,835	4,835		6,216	**15,886**
Total Site Square Feet		16,117	16,117		16,117	**48,352**
Total Units				7.8	4.4	**12.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	4029.30	4029.30		4029.30	**12087.90**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	12,088	12,088		12,088	**36,264**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	370	370	1,943	1,110	**3,793**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	407	407	2137	1221	**4172**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	2417.580	2417.580		2417.580	**7253**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	32.2	24.2	15.5	8.9	**80.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	12,894	9,670	6,216	3,552	**32,332**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	5,641	4,231	2,720	1,554	**14,145**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	4.8	1.5	1.5	0.8	**8.6**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	164	53	52	26	**296**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

James Plaza

Site Characteristics						
Acres	2.47	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.82	0.82	0.82	0.82	
Total Building Square Feet		10,759	10,759		13,832	**35,351**
Total Site Square Feet		35,864	35,864		35,864	**107,593**
Total Units				17.3	9.9	**27.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	8966.10	8966.10		8966.10	**26898.30**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	26,898	26,898		26,898	**80,695**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	823	823	4,323	2,470	**8,439**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	906	906	4755	2717	**9283**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	5379.660	5379.660		5379.660	**16139**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	71.7	53.8	34.6	19.8	**179.9**
	Surface Parking Footprint (SF) (Stalls x 400SF)	28,692	21,519	13,832	7,904	**71,946**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	12,553	9,414	6,052	3,458	**31,476**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	10.6	3.4	3.4	1.7	**19.1**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	366	118	116	58	**658**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Mendard Plaza

Site Characteristics						
Acres	**14.91**	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		4.97	4.97	4.97	4.97	
Total Building Square Feet		64,948	64,948		83,496	**213,392**
Total Site Square Feet		216,493	216,493		216,493	**649,480**
Total Units				104.4	59.6	**164.0**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	54123.30	54123.30		54123.30	**162369.90**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	162,370	162,370		162,370	**487,110**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	4,970	4,970	26,093	14,910	**50,943**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	5467	5467	28702	16401	**56037**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	32473.980	32473.980		32473.980	**97422**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	433.0	324.7	208.7	119.3	**1085.7**
	Surface Parking Footprint (SF) (Stalls x 400SF)	173,195	129,896	83,496	47,712	**434,298**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	75,773	56,829	36,530	20,874	**190,006**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	64.0	20.7	20.3	10.1	**115.2**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	2,208	714	701	349	**3,974**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

NicBurn Center

Site Characteristics						
Acres	2.4	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.80	0.80	0.80	0.80	
Total Building Square Feet		10,454	10,454		13,440	**34,349**
Total Site Square Feet		34,848	34,848		34,848	**104,544**
Total Units				16.8	9.6	**26.4**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	8712.00	8712.00		8712.00	**26136.00**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	26,136	26,136		26,136	**78,408**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	800	800	4,200	2,400	**8,200**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	880	880	4620	2640	**9020**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	5227.200	5227.200		5227.200	**15682**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	69.7	52.3	33.6	19.2	**174.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	27,878	20,909	13,440	7,680	**69,907**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	12,197	9,148	5,880	3,360	**30,584**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	10.3	3.3	3.3	1.6	**18.5**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	355	115	113	56	**640**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Parkway 5 Shoppes

Site Characteristics						
Acres	2.91	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.97	0.97	0.97	0.97	
Total Building Square Feet		12,676	12,676		16,296	**41,648**
Total Site Square Feet		42,253	42,253		42,253	**126,760**
Total Units				20.4	11.6	**32.0**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	10563.30	10563.30		10563.30	**31689.90**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	31,690	31,690		31,690	**95,070**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	970	970	5,093	2,910	**9,943**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	1067	1067	5602	3201	**10937**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	6337.980	6337.980		6337.980	**19014**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	84.5	63.4	40.7	23.3	**211.9**
	Surface Parking Footprint (SF) (Stalls x 400SF)	33,803	25,352	16,296	9,312	**84,762**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	14,789	11,091	7,130	4,074	**37,084**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	12.5	4.0	4.0	2.0	**22.5**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	431	139	137	68	**776**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Parkway Plaza

Site Characteristics						
Acres	0.92	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.31	0.31	0.31	0.31	
Total Building Square Feet		4,008	4,008		5,152	**13,167**
Total Site Square Feet		13,358	13,358		13,358	**40,075**
Total Units				6.4	3.7	**10.1**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	3339.60	3339.60		3339.60	**10018.80**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	10,019	10,019		10,019	**30,056**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	307	307	1,610	920	**3,143**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	337	337	1771	1012	**3458**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	– 5%	
	Development Impact (Ponding SF)	2003.760	2003.760		2003.760	**6011**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	26.7	20.0	12.9	7.4	**67.0**
	Surface Parking Footprint (SF) (Stalls x 400SF)	10,687	8,015	5,152	2,944	**26,798**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	4,675	3,507	2,254	1,288	**11,724**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	4.0	1.3	1.3	0.6	**7.1**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	136	44	43	22	**245**

River Hills Shopping Center

Site Characteristics						
Acres	1.6	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.53	0.53	0.53	0.53	
Total Building Square Feet		6,970	6,970		8,960	**22,899**
Total Site Square Feet		23,232	23,232		23,232	**69,696**
Total Units				11.2	6.4	**17.6**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	5808.00	5808.00		5808.00	**17424.00**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	17,424	17,424		17,424	**52,272**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	533	533	2,800	1,600	**5,467**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	587	587	3080	1760	**6013**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	3484.800	3484.800		3484.800	**10454**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	46.5	34.8	22.4	12.8	**116.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	18,586	13,939	8,960	5,120	**46,605**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	8,131	6,098	3,920	2,240	**20,390**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	6.9	2.2	2.2	1.1	**12.4**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	237	77	75	38	**426**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Riverview Center

Site Characteristics						
Acres	1.26	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.42	0.42	0.42	0.42	
Total Building Square Feet		5,489	5,489		7,056	**18,033**
Total Site Square Feet		18,295	18,295		18,295	**54,886**
Total Units				8.8	5.0	**13.9**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	4573.80	4573.80		4573.80	**13721.40**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	13,721	13,721		13,721	**41,164**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	420	420	2,205	1,260	**4,305**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	462	462	2426	1386	**4736**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	2744.280	2744.280		2744.280	**8233**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	36.6	27.4	17.6	10.1	**91.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	14,636	10,977	7,056	4,032	**36,701**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	6,403	4,802	3,087	1,764	**16,057**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	5.4	1.8	1.7	0.9	**9.7**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	187	60	59	30	**336**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Southcross Convenience Center

Site Characteristics						
Acres	2.08	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.69	0.69	0.69	0.69	
Total Building Square Feet		9,060	9,060		11,648	**29,769**
Total Site Square Feet		30,202	30,202		30,202	**90,605**
Total Units				14.6	8.3	**22.9**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	7550.40	7550.40		7550.40	**22651.20**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	22,651	22,651		22,651	**67,954**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	693	693	3,640	2,080	**7,107**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	763	763	4004	2288	**7817**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	4530.240	4530.240		4530.240	**13591**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	60.4	45.3	29.1	16.6	**151.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	24,161	18,121	11,648	6,656	**60,586**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	10,571	7,928	5,096	2,912	**26,506**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	8.9	2.9	2.8	1.4	**16.1**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	308	100	98	49	**554**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Summit Oaks Square

Site Characteristics						
Acres	3.87	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		1.29	1.29	1.29	1.29	
Total Building Square Feet		16,858	16,858		21,672	**55,387**
Total Site Square Feet		56,192	56,192		56,192	**168,577**
Total Units				27.1	15.5	**42.6**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	14048.10	14048.10		14048.10	**42144.30**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	42,144	42,144		42,144	**126,433**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	1,290	1,290	6,773	3,870	**13,223**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	1419	1419	7450	4257	**14545**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	8428.860	8428.860		8428.860	**25287**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	112.4	84.3	54.2	31.0	**281.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	44,954	33,715	21,672	12,384	**112,725**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	19,667	14,751	9,482	5,418	**49,317**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	16.6	5.4	5.3	2.6	**29.9**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	573	185	182	91	**1,031**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Town & Country Square

Site Characteristics						
Acres	10.34	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		3.45	3.45	3.45	3.45	
Total Building Square Feet		45,041	45,041		57,904	**147,986**
Total Site Square Feet		150,137	150,137		150,137	**450,410**
Total Units				72.4	41.4	**113.7**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	37534.20	37534.20		37534.20	**112602.60**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	112,603	112,603		112,603	**337,808**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	3,447	3,447	18,095	10,340	**35,328**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	3791	3791	19905	11374	**38861**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	22520.520	22520.520		22520.520	**67562**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	300.3	225.2	144.8	82.7	**753.0**
	Surface Parking Footprint (SF) (Stalls x 400SF)	120,109	90,082	57,904	33,088	**301,184**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	52,548	39,411	25,333	14,476	**131,768**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	44.4	14.4	14.1	7.0	**79.9**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	1,531	495	486	242	**2,756**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Valley Ridge

Site Characteristics						
Acres	14.2	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		4.73	4.73	4.73	4.73	
Total Building Square Feet		61,855	61,855		79,520	**203,230**
Total Site Square Feet		206,184	206,184		206,184	**618,552**
Total Units				99.4	56.8	**156.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	51546.00	51546.00		51546.00	**154638.00**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	154,638	154,638		154,638	**463,914**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	4,733	4,733	24,850	14,200	**48,517**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	5207	5207	27335	15620	**53368**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	30927.600	30927.600		30927.600	**92783**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	412.4	309.3	198.8	113.6	**1034.0**
	Surface Parking Footprint (SF) (Stalls x 400SF)	164,947	123,710	79,520	45,440	**413,618**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	72,164	54,123	34,790	19,880	**180,958**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	61.0	19.7	19.4	9.7	**109.7**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	2,103	680	668	333	**3,784**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Wood Park Crossing

Site Characteristics						
Acres	1.6	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.53	0.53	0.53	0.53	
Total Building Square Feet		6,970	6,970		8,960	**22,899**
Total Site Square Feet		23,232	23,232		23,232	**69,696**
Total Units				11.2	6.4	**17.6**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	5808.00	5808.00		5808.00	**17424.00**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	17,424	17,424		17,424	**52,272**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	533	533	2,800	1,600	**5,467**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	587	587	3080	1760	**6013**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	3484.800	3484.800		3484.800	**10454**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	46.5	34.8	22.4	12.8	**116.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	18,586	13,939	8,960	5,120	**46,605**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	8,131	6,098	3,920	2,240	**20,390**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	6.9	2.2	2.2	1.1	**12.4**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	237	77	75	38	**426**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Wood Park Plaza

Site Characteristics						
Acres	2.56	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.85	0.85	0.85	0.85	
Total Building Square Feet		11,151	11,151		14,336	**36,639**
Total Site Square Feet		37,171	37,171		37,171	**111,514**
Total Units				17.9	10.2	**28.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	9292.80	9292.80		9292.80	**27878.40**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	27,878	27,878		27,878	**83,635**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	853	853	4,480	2,560	**8,747**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	939	939	4928	2816	**9621**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	5575.680	5575.680		5575.680	**16727**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	74.3	55.8	35.8	20.5	**186.4**
	Surface Parking Footprint (SF) (Stalls x 400SF)	29,737	22,303	14,336	8,192	**74,568**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	13,010	9,757	6,272	3,584	**32,623**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	11.0	3.6	3.5	1.7	**19.8**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	379	123	120	60	**682**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Wood Park Shoppes

Site Characteristics						
Acres	1.33	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average Density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.44	0.44	0.44	0.44	
Total Building Square Feet		5,793	5,793		7,448	**19,035**
Total Site Square Feet		19,312	19,312		19,312	**57,935**
Total Units				9.3	5.3	**14.6**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	4827.90	4827.90		4827.90	**14483.70**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	14,484	14,484		14,484	**43,451**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	443	443	2,328	1,330	**4,544**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	488	488	2560	1463	**4999**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	2896.740	2896.740		2896.740	**8690**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	38.6	29.0	18.6	10.6	**96.9**
	Surface Parking Footprint (SF) (Stalls x 400SF)	15,449	11,587	7,448	4,256	**38,740**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	6,759	5,069	3,259	1,862	**16,949**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	5.7	1.8	1.8	0.9	**10.3**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	197	64	63	31	**354**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

Woodruff Center

Site Characteristics						
Acres	1.2	Retail (Ground floor w/housing above)	Retail/Office Mix	High Density Multi Family (above Retail)	Medium Density Multi Family	Total
		FAR		Density (units/acre-avg.)		Average density
		0.3	0.3	14	8	11
*Land Use Mix (Acres)**		0.40	0.40	0.40	0.40	
Total Building Square Feet		5,227	5,227		6,720	**17,174**
Total Site Square Feet		17,424	17,424		17,424	**52,272**
Total Units				8.4	4.8	**13.2**
Site Impacts						
Required Green Space	Percentage Acreage	25%	25%	25%	25%	
	Development Impact (Green Space SF)	4356.00	4356.00		4356.00	**13068.00**
Impervious Coverage	Percent Impervious Coverage	75%	75%	75%	75%	
	Development Impact (Impervious SF)	13,068	13,068		13,068	**39,204**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	250	250	
	Development Impact (Gallons Wastewater)	400	400	2,100	1,200	**4,100**
Water Supply	Gallons per Commercial Acre or per Household	110% Wastewater	110% Wastewater	110% Wastewater	110% Wastewater	
	Development Impact	440	440	2310	1320	**4510**
Stormwater Ponding	Percentage of Site Area	5%	5%	5%	5%	
	Development Impact (Ponding SF)	2613.600	2613.600		2613.600	**7841**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	2	2	
	Development Impact (Number of Parking Stalls)	34.8	26.1	16.8	9.6	**87.4**
	Surface Parking Footprint (SF) (Stalls x 400SF)	13,939	10,454	6,720	3,840	**34,954**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	6,098	4,574	2,940	1,680	**15,292**
Transit	Percentage Transit Trips	2.9%	2.9%	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	5.2	1.7	1.6	0.8	**9.3**
Trips per Day	Trips per 1000 Commercial SF or per Household	34	11	6.72	5.86	
	Development Impact (Trips Generated)	178	57	56	28	**320**

*Total is greater than site acreage due to stacking of housing/retail

**Generally 20 boardings/day warrants shelter at suburban transit stop

APPENDIX U – SATELLITE CENTER YIELD PLANS

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

Aurora Village Center

Site Characteristics				
Acres	**14.42**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		10.82	3.61	
Total Building Square Feet		41,876	62,814	**104,689**
Total Site Square Feet		471,101	157,034	**628,135**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	117775.35	52344.60	**170119.95**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	353,326	117,775	**471,101**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	4,807	4,807	**9,613**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	5287	5287	**10575**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	31,407	31,407	**62,814**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	279.2	314.1	**593.2**
	Surface Parking Footprint (SF) (Stalls x 400SF)	111,668	125,627	**237,296**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	48,855	54,962	**103,817**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	41.3	20.0	**61.3**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	1,424	691	**2,115**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnhaven Drive & 143rd

Site Characteristics				
Acres	**2.45**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		1.84	0.61	
Total Building Square Feet		7,115	10,672	**17,787**
Total Site Square Feet		80,042	26,681	**106,722**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	20010.38	8893.50	**28903.88**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	60,031	20,010	**80,042**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	817	817	**1,633**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	898	898	**1797**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	5,336	5,336	**10,672**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	47.4	53.4	**100.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	18,973	21,344	**40,317**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	8,301	9,338	**17,639**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	7.0	3.4	**10.4**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	242	117	**359**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnhaven Shopping Center

Site Characteristics				
Acres	**17.97**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		13.48	4.49	
Total Building Square Feet		52,185	78,277	**130,462**
Total Site Square Feet		587,080	195,693	**782,773**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	146769.98	65231.10	**212001.08**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	440,310	146,770	**587,080**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	5,990	5,990	**11,980**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	6589	6589	**13178**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	39,139	39,139	**78,277**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	347.9	391.4	**739.3**
	Surface Parking Footprint (SF) (Stalls x 400SF)	139,160	156,555	**295,714**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	60,882	68,493	**129,375**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	51.5	25.0	**76.4**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	1,774	861	**2,635**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnhill Plaza

Site Characteristics				
Acres	**13.15**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		9.86	3.29	
Total Building Square Feet		38,188	57,281	**95,469**
Total Site Square Feet		429,611	143,204	**572,814**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	107402.63	47734.50	**155137.13**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	322,208	107,403	**429,611**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	4,383	4,383	**8,767**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	4822	4822	**9643**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	28,641	28,641	**57,281**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	254.6	286.4	**541.0**
	Surface Parking Footprint (SF) (Stalls x 400SF)	101,834	114,563	**216,396**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	44,552	50,121	**94,673**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	37.7	18.3	**55.9**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	1,298	630	**1,928**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnhill Shoppers Corner

Site Characteristics				
Acres	**3.27**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		2.45	0.82	
Total Building Square Feet		9,496	14,244	**23,740**
Total Site Square Feet		106,831	35,610	**142,441**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	26707.73	11870.10	**38577.83**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	80,123	26,708	**106,831**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	1,090	1,090	**2,180**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	1199	1199	**2398**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	7,122	7,122	**14,244**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	63.3	71.2	**134.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	25,323	28,488	**53,811**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	11,079	12,464	**23,542**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	9.4	4.5	**13.9**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	323	157	**480**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnside Plaza

Site Characteristics				
Acres	**8.27**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		6.20	2.07	
Total Building Square Feet		24,016	36,024	**60,040**
Total Site Square Feet		270,181	90,060	**360,241**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	67545.23	30020.10	**97565.33**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	202,636	67,545	**270,181**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	2,757	2,757	**5,513**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	3032	3032	**6065**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	18,012	18,012	**36,024**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	160.1	180.1	**340.2**
	Surface Parking Footprint (SF) (Stalls x 400SF)	64,043	72,048	**136,091**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	28,019	31,521	**59,540**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	23.7	11.5	**35.2**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	817	396	**1,213**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnsville Auto Mall

Site Characteristics				
Acres	**3.77**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		2.83	0.94	
Total Building Square Feet		10,948	16,422	**27,370**
Total Site Square Feet		123,166	41,055	**164,221**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	30791.48	13685.10	**44476.58**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	92,374	30,791	**123,166**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	1,257	1,257	**2,513**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	1382	1382	**2765**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	8,211	8,211	**16,422**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	73.0	82.1	**155.1**
	Surface Parking Footprint (SF) (Stalls x 400SF)	29,195	32,844	**62,039**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	12,773	14,369	**27,142**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	10.8	5.2	**16.0**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	372	181	**553**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnsville Crossings

Site Characteristics				
Acres	**10.3**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		7.73	2.58	
Total Building Square Feet		29,911	44,867	**74,778**
Total Site Square Feet		336,501	112,167	**448,668**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	84125.25	37389.00	**121514.25**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	252,376	84,125	**336,501**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	3,433	3,433	**6,867**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	3777	3777	**7553**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	22,433	22,433	**44,867**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	199.4	224.3	**423.7**
	Surface Parking Footprint (SF) (Stalls x 400SF)	79,763	89,734	**169,497**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	34,896	39,258	**74,155**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	29.5	14.3	**43.8**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	1,017	494	**1,511**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Burnsville Marketplace

Site Characteristics				
Acres	**26.76**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		20.07	6.69	
Total Building Square Feet		77,711	116,567	**194,278**
Total Site Square Feet		874,249	291,416	**1,165,666**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	218562.30	97138.80	**315701.10**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	655,687	218,562	**874,249**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	8,920	8,920	**17,840**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	9812	9812	**19624**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	58,283	58,283	**116,567**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	518.1	582.8	**1100.9**
	Surface Parking Footprint (SF) (Stalls x 400SF)	207,229	233,133	**440,363**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	90,663	101,996	**192,659**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	76.6	37.2	**113.8**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	2,642	1,282	**3,924**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Cobblestone Court

Site Characteristics				
Acres	**10.95**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		8.21	2.74	
Total Building Square Feet		31,799	47,698	**79,497**
Total Site Square Feet		357,737	119,246	**476,982**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	89434.13	39748.50	**129182.63**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	268,302	89,434	**357,737**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	3,650	3,650	**7,300**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	4015	4015	**8030**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	23,849	23,849	**47,698**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	212.0	238.5	**450.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	84,797	95,396	**180,193**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	37,099	41,736	**78,835**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	31.4	15.2	**46.6**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	1,081	525	**1,606**

**Generally 20 boardings/day warrants shelter at suburban transit stop

McAndrews Center

Site Characteristics				
Acres	**4.76**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		3.57	1.19	
Total Building Square Feet		13,823	20,735	**34,558**
Total Site Square Feet		155,509	51,836	**207,346**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	38877.30	17278.80	**56156.10**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	116,632	38,877	**155,509**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	1,587	1,587	**3,173**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	1745	1745	**3491**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	10,367	10,367	**20,735**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	92.2	103.7	**195.8**
	Surface Parking Footprint (SF) (Stalls x 400SF)	36,861	41,469	**78,331**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	16,127	18,143	**34,270**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	13.6	6.6	**20.2**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	470	228	**698**

**Generally 20 boardings/day warrants shelter at suburban transit stop

MGM Building

Site Characteristics				
Acres	**2.41**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		1.81	0.60	
Total Building Square Feet		6,999	10,498	**17,497**
Total Site Square Feet		78,735	26,245	**104,980**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	19683.68	8748.30	**28431.98**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	59,051	19,684	**78,735**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	803	803	**1,607**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	884	884	**1767**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	5,249	5,249	**10,498**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	46.7	52.5	**99.1**
	Surface Parking Footprint (SF) (Stalls x 400SF)	18,663	20,996	**39,659**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	8,165	9,186	**17,351**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	6.9	3.3	**10.2**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	238	115	**353**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Nicollet Court

Site Characteristics				
Acres	**1.3**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		0.98	0.33	
Total Building Square Feet		3,775	5,663	**9,438**
Total Site Square Feet		42,471	14,157	**56,628**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	10617.75	4719.00	**15336.75**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	31,853	10,618	**42,471**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	433	433	**867**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	477	477	**953**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	2,831	2,831	**5,663**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	25.2	28.3	**53.5**
	Surface Parking Footprint (SF) (Stalls x 400SF)	10,067	11,326	**21,393**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	4,404	4,955	**9,359**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	3.7	1.8	**5.5**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	128	62	**191**

**Generally 20 boardings/day warrants shelter at suburban transit stop

Skyline Plaza

Site Characteristics				
Acres	**5.34**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		4.01	1.34	
Total Building Square Feet		15,507	23,261	**38,768**
Total Site Square Feet		174,458	58,153	**232,610**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	43614.45	19384.20	**62998.65**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	130,843	43,614	**174,458**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	1,780	1,780	**3,560**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	1958	1958	**3916**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	11,631	11,631	**23,261**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	103.4	116.3	**219.7**
	Surface Parking Footprint (SF) (Stalls x 400SF)	41,353	46,522	**87,875**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	18,092	20,353	**38,445**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	15.3	7.4	**22.7**
Trips per Day	Trips per 1000 Commercial SF	34	11	
	Development Impact (Trips Generated)	527	256	**783**

**Generally 20 boardings/day warrants shelter at suburban transit stop

42nd and Aldrich

Site Characteristics				
Acres	**4.31**	**Retail**	**Office**	**Total**
		FAR		
		0.2	0.3	
Land Use Mix (Acres)*		3.23	1.08	
Total Building Square Feet		12,516	18,774	**31,291**
Total Site Square Feet		140,808	46,936	**187,744**
Site Impacts				
Required Green Space	Percentage Acreage	25%	25%	
	Development Impact (Green Space SF)	35201.93	15645.30	**50847.23**
Impervious Coverage	Percent Impervious Coverage	75%	75%	
	Development Impact (Impervious SF)	105,606	35,202	**140,808**
Gallons Wastewater	Gallons per Commercial Acre or per Household	1000	1000	
	Development Impact (Gallons Wastewater)	1,437	1,437	**2,873**
Water Supply	Gallons per Commercial Acre	110% Wastewater	110% Wastewater	
	Development Impact	1580	1580	**3161**
Stormwater Ponding	Percentage of Site Area	5%	5%	
	Development Impact (Ponding SF)	9,387	9,387	**18,774**
Parking	Required Stalls (per unit or per 150 SF retail or 200 SF office)	150	200	
	Development Impact (Number of Parking Stalls)	83.4	93.9	**177.3**
	Surface Parking Footprint (SF) (Stalls x 400SF)	33,377	37,549	**70,925**
	Structed Parking Footprint (SF) (Stalls x 350 SF)/2	14,602	16,428	**31,030**
Transit	Percentage Transit Trips	2.9%	2.9%	
	Development Impacts (Potential Boardings)*	12.3	6.0	**18.3**
Trips per Day	Trips per 1000 Commercial SF	34	11	

APPENDIX V – BURNSVILLE ZONING ORDINANCE & DISTRICT SUMMARIES

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

BURNSVILLE

ZONING ORDINANCE

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CHAPTER 1

TITLE AND APPLICATION

SECTION:

10-1-1: Title
10-1-2: Application
10-1-3: Severability
10-1-4: Legislative Authority

10-1-1: **TITLE:** This Title shall be known as the "Burnsville Zoning Title" except that it may also be referred to herein as "this title".

10-1-2: **APPLICATION:**

(A) Where the conditions imposed by any provision of this title are either more or less restrictive than comparable conditions imposed by other ordinance, rule or regulation of the city, the ordinance, rule or regulation which imposes the more restrictive condition, standard or requirement shall prevail.

(B) Except as herein provided, no building, structure or premises shall hereafter be used or occupied and no building permit shall be granted and no plat approved that does not conform to the requirements of this title.

(C) No structure shall be erected, converted, enlarged, reconstructed or altered, and no structure or land shall be used for any purpose which is not in conformity with the provisions of this title.

(D) Whenever in any zoning district a use is neither specifically allowed nor specifically prohibited, the use shall be considered prohibited unless the city council determines that the proposed use is very similar to an allowed use in which case the proposed use shall be deemed allowed.

(E) The city council or the planning commission, on their own initiative or upon request, may conduct a study to determine if a use which is neither allowed nor prohibited is acceptable and if so, what zoning district would be most appropriate and the conditions and standards relating to development of the use. The city council, planning commission or property owner, if appropriate, shall initiate an amendment to the Zoning Title to provide for the particular use under consideration or shall find that the use is not compatible for development within the city.

(F) This title is a comprehensive revision to Title 10 of the city code. Any act done, offense committed, or rights accruing or accrued, or liability, penalty incurred or imposed prior to the effective date of this title is not affected by its enactment.

10-1-3: **SEVERABILITY:** The provisions of this title are separable in accordance with the following:

(A) If any court of competent jurisdiction shall adjudge any provision of this title to be invalid, such judgment shall not affect any other provisions of this title not specifically included in the judgment.

(B) If any court of competent jurisdiction shall adjudge invalid the application of any provision of this title to a particular property, building or other structure, such judgment shall not affect the application of the provision to any other property, building or structure not specifically included in the judgment.

10-1-4: **LEGISLATIVE AUTHORITY:** This title is enacted pursuant to the authority granted by the Municipal Planning Act, Minnesota Statutes, Section 462.351 to 462.363.

CHAPTER 2

LEGISLATIVE PURPOSE AND INTENT

SECTION:

10-2-1: Legislative Purpose and Intent

10-2-1: **LEGISLATIVE PURPOSE AND INTENT:** The purpose and intent of this title is to implement the Burnsville Comprehensive Plan and to promote the general health, safety and welfare of Burnsville's present and future inhabitants by:

(A) Giving effect to the goals and policies of the Burnsville Comprehensive Plan.

(B) Dividing the city into districts according to the use of land and buildings, the intensity of such use including bulk and height.

(C) Providing methods to implement the environmental goals and policies of the Burnsville Comprehensive Plan to maintain a healthful environment for the benefit of present and future generations by establishing standards to control the amount of open space, impervious surfaces and the intensity of development in areas of sensitive natural resources or natural features in order to reduce or eliminate adverse environmental impacts.

(D) Controlling and regulating the growth and development of Burnsville to concentrate development in areas where adequate public sewer and other public services are provided, and to limit the development of areas where such facilities are not available.

(E) Providing standards for all types of dwelling units, access to decent, sound and sanitary housing including the provision for adequate zoning to meet a fair share of the region's housing needs.

(F) Lessening the danger and congestion of traffic on the roads and highways, limiting excessive numbers of intersections, driveways and other friction points, minimizing other hazards, and insuring the continued usefulness and function of all elements of the city's street system.

(G) Securing safety from fire, panic, flood and other dangers.

(H) Providing adequate privacy, light and air.

(I) Protecting Burnsville's tax base by promoting cost-effective development within the city.

(J) Conserving the values of property throughout Burnsville.

(K) Protecting landowners from adverse impacts of adjoining development.

(L) Providing an aesthetically attractive community.

CHAPTER 3

INTERPRETATION

SECTION:

10-3-1: Interpretation

10-3-1: **INTERPRETATION:** If any provision of this title is determined to be ambiguous, this title shall be interpreted in conformance with Minnesota law and in conformance with the expressed legislative purpose and intent. To this end:

(A) Determine the public purpose of the standard with respect to which an interpretation is required.

(B) Determine the actual impact of a proposed interpretation.

(C) Determine that the purposed interpretation will protect the health, safety, and welfare of the community.

CHAPTER 4

DEFINITIONS

SECTION:

10-4-1: Purpose, Word Usage
10-4-2: Definitions

10-4-1: **PURPOSE, WORD USAGE:** It is the purpose of this chapter to define words, terms and phrases contained within this title. In the interpretation of this title, the provisions and rules of this section shall be applied.

(A) Words used or defined in one tense or form shall include other tenses and derivative forms.

(B) Words in the singular number shall include the plural number, and words in the plural number shall include the singular number.

(C) The masculine gender shall include the feminine, and the feminine gender shall include the masculine.

(D) "Shall" is mandatory.

(E) "May" is permissive.

10-4-2: **DEFINITIONS:** The following words and terms are defined as follows:

ACCESSORY STRUCTURE: A structure adjunct of and in subordination to another structure.

ADULT RETIREMENT COMMUNITY: An age-restricted, planned development for independent living, as defined under the Federal Fair Housing Act provisions for housing for the elderly which may be in any housing form, including detached and attached dwelling units, and that includes social and recreational activities.

AESTHETIC: The perception of artistic elements or elements in the natural or created environment that are pleasing to the eye.

ARCHITECTURAL CONCEPT: The basic aesthetic idea of a building, or group of buildings, including the site and landscape development, that produces its distinctive character.

ARCHITECTURAL CONCRETE: A building construction material consisting of concrete that has surface design, pattern, and texture that enhances the building, and is available in a variety of colors.

ARCHITECTURAL FEATURE: A prominent or significant part or element of a building or site.

ARCHITECTURAL METAL PANEL: A metal building wall section that has a shape, design, surface texture and permanent color finish that enhances the building. The metal panel shall not oilcan, and it shall not have exposed fasteners.

ARTERIAL, MINOR: A road classification for streets that are of regional importance because they relieve, expand, or complement the principal arterial system and are designed to connect to principal arterials, other minor arterials and collectors. The minor arterial roads are identified in the Comprehensive Plan.

ARTERIAL, PRINCIPAL: Interstate freeways and state highways that connect the region with other areas in the state and other states. The emphasis of these roads are on mobility as opposed to land access. The principal arterial roads are identified in the Comprehensive Plan.

ASSISTED LIVING FACILITY: A facility for the elderly that provides rooms, meals, personal care, and supervision of self-administered medication; and may provide other services, such as recreational activities, financial services, and transportation, appropriate for the residents.

AUTOMOBILE REPAIR; MAJOR: General repair, rebuilding of trailers, body work, framework, and major painting service.

AUTOMOBILE REPAIR; MINOR: The replacement of any part or repair of any part which does not require the removal of the engine head or pan, engine transmission or differential; incidental body and fender work, minor painting and upholstering service involving passenger automobiles and trucks not in excess of a three-quarter (3/4) ton rating.

BASEMENT: A portion of a building located partly underground, but having half or less than its floor-to-ceiling height below the average grade of the adjoining ground.

BOARD OF ADJUSTMENT AND APPEALS: The Burnsville city council.

BRICK: A masonry building block of clay baked in a kiln until hard.

BUFFER YARD: A unit of land, together with a specified type and amount of planting thereon, and any structures which may be required between land uses to eliminate or minimize conflicts between them.

BUILDABLE AREA: The portion of a lot remaining after required yards have been provided.

BUILDING: Any structure having a roof which may provide shelter or enclosure of persons, animals or chattels, and when said structure is divided by party walls without opening, each portion of such building so separated shall be deemed a separate building.

BUILDING ACCESSORY: A building adjunct of and in subordination to another building.

BUILDING HEIGHT: The vertical distance from: (1) the average elevation of the adjoining ground level or (2) the established grade, whichever is lower to the top of the cornice of a flat roof, to the deck line of a mansard roof, to a point of the roof directly above the highest wall of a shed roof, to the uppermost point of a round or other arch-type roof, to the mean distance of the highest gable on a pitched or hip roof.

BUILDING, PRINCIPAL: A building in which is conducted the principal use of the lot or lots on which it is located.

BUSINESS: Any establishment, occupation, employment or enterprise wherein merchandise is manufactured, exhibited, stored, sold or where services are offered for compensation.
CAST IN PLACE PANEL: A building wall section of concrete poured into place in a form at the building construction site.

CELLAR: That portion of the building having more than one-half (½) of the floor-to-ceiling height below the average grade of the adjoining ground.

CHURCH: A building, together with its accessory buildings and uses, where persons regularly assemble for religious worship and which is maintained and controlled by a religious body organized to sustain public worship.

COLLECTOR: Roadways which are designed to perform the function of collecting traffic from local streets and distributing it to principal and minor arterials. Collector streets are identified in the Comprehensive Plan.

COMMERCIAL ANTENNA: Any antenna regardless of height or size erected for the purpose of providing public entertainment or subleased to other individuals or corporations including partnerships, associations, etc.

COMMERCIAL ATHLETIC FACILITY: Private for profit athletic facilities including but not limited to baseball, softball, soccer and football field, batting cages, and other similar uses.

COMMERCIAL ZERO LOT LINE DEVELOPMENT: The location of a building in a business or industrial zoning district in such a manner that portions of the building rest on two (2) or more lots. Said structures are considered to be one building, regardless of party walls.

COMMON OPEN SPACE: Land, water or a combination of land and water within a planned unit development which is designed and intended for the use and enjoyment of residents of the development. Common open space includes all land within a development, except for individual building lots and land accepted for public dedication.

COMMUNITY GARDEN: *Flower or vegetable garden with multiple plots for multiple individuals.* ***Interim Ord. expires 12-1-2010.***

COMPATIBLE: The exterior architectural appearance, lot layout and design of proposed structures that are in harmonious combination with adjacent buildings and properties. A compatibly designed building integrates some, but not all, materials, colors and design forms of adjacent structures while maintaining some of its own uniqueness. A building is not compatible if it causes:

(A) A likeness to a degree to cause monotony;

(B) A difference to a degree to cause incongruity;

(C) A depreciation of neighborhood values or adjacent property values;

(D) A nuisance, compared to existing or other proposed structures or uses. Types of nuisance characteristics include but are not limited to: noise, dust, odors, glare, unsightly building exterior, unsightly exterior storage, traffic generation, signs, refuse or lack of landscaping.

COMPREHENSIVE PLAN: The Burnsville Comprehensive Plan and all maps, charts, and explanatory materials thereto, as adopted by the Burnsville city council.

CONCRETE: A construction material consisting of sand or stone, water, and cement.

CONDITIONAL USE: A land or development as defined by ordinance that would not be appropriate generally but may be allowed with appropriate restrictions as provided by official controls upon a finding that (1) certain conditions as detailed in the zoning ordinance exist, and (2) the use or development conforms to the comprehensive land use plan of the County and (3) is compatible with the existing neighborhood.

CONGREGATE RESIDENCES: Residences with communal dining facilities and services, such as housekeeping, organized social and recreational activities, transportation services, and other support services appropriate for the residents.

CONVENIENCE STORE, MOTOR FUEL STATION: A motor fuel station that offers for sale a limited amount of food and household products, which are in addition to those typically supplied at a motor fuel station.

CONVENTION HALL: A structure without kitchen facilities designed for hosting a variety of commercial or community events of large groups of people.

CROWN COVER: The ratio between the amount of land shaded by the vertical projection of the branches and foliage area of standing trees to the total area of land, usually expressed as a percentage.

CURTAIN WALL: A building façade which does not carry any dead load from the building, other than its own load and is designed to resist air and water infiltration.

DAYCARE NURSERY: Any facility or home where children under twelve (12) years of age who are not members of the family or the superior or custodian in charge:

(A) Meet or are scheduled to meet regularly for more than one day a week, for all or part of the day; and

(B) Meet either to be watched or cared for while their parent or guardian is otherwise engaged or to afford themselves opportunities for physical, social, emotional or intellectual growth.

These terms shall not include hospitals, Sunday schools, facilities under the direction of an established and accredited school system, facilities used for club or organization meetings when such club or organization regularly meets no more than once a week, or casual babysitting.

DECORATIVE BLOCK: A masonry building block of cast concrete and aggregate rock that has a split-rock, brick-like, burnished, or ribbed texture on the side to be exposed, and is available in a variety of colors. Block that has been scored to give the appearance of additional joints is not a decorative block.

DENSITY, GROSS: The quotient of the total number of dwelling units divided by the gross site area.

DENSITY, NET: An intensity measure expressed as the number of residential units per net buildable site area. It is the density on the net site area, which excludes all public roadway easements and rights-of-way, all private roadways, any part of a site excluded from the lot area calculations of the Shoreland Overlay District in chapter 8 of this title, and any additional lot area required for corner lots.

DEVELOPER: The legal or beneficial owner(s) of a lot or parcel of any land proposed for inclusion in a development, including the holder of an option or contract to purchase.

DEVELOPMENT: The construction, installation or alteration of any structure, the extraction, clearing or other alteration of terrestrial or aquatic vegetation, land or the course current or cross section of any water body or watercourse or the division of land into two (2) or more parcels.

DEVELOPMENT PERMIT: Any building permit, zoning permit, plat approval, rezoning, certification, conditional permit or variance.

DRIVE AISLE: A permanently surfaced (concrete, bituminous, or pavers) area providing vehicular access between and adjacent to parking spaces.

DRIVEWAY: A permanently surfaced (concrete, bituminous, or pavers) area providing vehicular access between a street and an off-street parking or loading area.

DWELLING: A building or portion thereof occupied or intended to be occupied exclusively for residential purposes, but not including rooms in motels, hotels, nursing homes, boarding houses, trailers, tents, trailer coaches or lodging rooms.

DWELLING, APARTMENT: An attached dwelling unit that has front access from a common entrance and hallway, and parking in a common garage structure or common area within the building.

DWELLING, ATTACHED: A dwelling which is joined to another dwelling.

DWELLING, DETACHED: A dwelling which is entirely surrounded by open space.

DWELLING, TOWNHOUSE: An attached dwelling unit that has its own front access to the outside, is not located over another unit, is separated from all other units by one or more vertical common fire-resistant walls, and has parking in a garage attached to and accessible from the unit.

DWELLING, TWO-FAMILY: A building initially constructed on a single lot containing two (2) dwelling units, each of which is totally separated from the other by an unpierced fire-resistant wall extending from ground to roof.

DWELLING UNIT: A residential unit providing complete, independent living facilities for one family, including permanent provisions for living, sleeping, eating, and cooking.

EASEMENT: Authorization by a property owner of the use by another and for a specified purpose of any designated part of his property.

EFFICIENCY APARTMENT: A dwelling unit consisting of one principal room, exclusive of bathroom, kitchen, hallway, closet or dining alcove directly off the principal room, provided that such dining alcove does not exceed one hundred twenty-five (125) square feet in area.

END USE PLAN: The exhibits and supporting documentation required in the approval of conditional use permits for land reclamation mining and soil processing operations. This plan includes a description of the proposed process for the restoration of land; the proposed volumes of subsoil and topsoil to be deposited, and the shape and contour which it will be graded to; the proposed elevations throughout the property following its restoration and the relationship between these elevations and surrounding properties, as well as existing and proposed utilities and streets; a landscape plan showing the number, species and sizes of trees and shrubs proposed for the revegetation of the property; and any other information deemed necessary by the city to assess the ultimate impact of the proposed operations on the goals, policies and objectives contained in the city's Comprehensive Plan.

ESSENTIAL SERVICES: Underground or overhead gas, electrical, steam or water transmission or distribution systems; collection, communication, supply or disposal systems including poles, wires, mains, drains, sewers, pipes, conduits, cables, fire alarm boxes, police call boxes, traffic signals, hydrants or other similar equipment and accessories in conjunction therewith, but not including buildings.

EXTERIOR STORAGE: Outdoor storage of fuel, raw materials, products, equipment and motor vehicles.

FAMILY: An individual or two (2) or more persons related by blood, marriage, guardianship or adoption living together as a single housekeeping unit; or a group of not more than four (4) persons not so related, maintaining a common household and using common cooking and kitchen facilities, or a residential program (group home) for six (6) or fewer persons as defined and licensed by the State of Minnesota Department of Human Services.

FARMER'S MARKET: Outdoor sales of fruits, vegetables, honey, flowers, plants, homemade bakery goods, cheeses, and soaps.

FLOOR AREA: The term "floor area" for the purpose of calculating the number of off-street parking spaces shall be the net usable floor area of the various floors, exclusive of hallways, utility space, restrooms, window show cases, and ornamental space not used for assembly.

GARAGE: An accessory building or accessory portion of the principal building which is used to store automotive vehicles or major recreational equipment by a user of the property.

GAZEBO: A freestanding, roofed building with completely open or screened sides used as an outdoor living area.

GENERAL FLOOR PLANS: A graphic representation of the anticipated utilization of the floor area within a building or structure but not necessarily as detailed as construction plans.

GREEN AREA: Land shown on a development plan where vegetation is planted or required to meet landscape standards of this Title.

GROUND LEVEL VIEW: The view of the building from the furthest point of the width of the right-of-way from the property line(s) that abut a street and adjoining residential lot lines.

HEALTH CLUB: A business that provides recreational services and facilities, usually for the benefit of its membership or the general public, involving aerobic exercises, strength and cardiovascular equipment, indoor or outdoor game courts, swimming pools, running tracks, massage, tanning, hair and other personal services, saunas, steam room, showers and lockers and the like that may be used at any time that the operation is open for business.

HOME OCCUPATION: The use of a residential dwelling for business, trade, or professional purposes.

HORIZONTAL PATTERNS: An artistic or decorative horizontal design embedded into a decorative concrete block or acceptable concrete panel wall through the use of brick, stone, block or other material which is incorporated into the overall design through horizontal forms.

HOTEL: Every structure or any part thereof containing four (4) or more guest rooms, kept, used as, maintained as, or advertised as, or held out to the public to be a place where sleeping accommodations are furnished to the public for periods as short as one week.

INSTRUCTION/LEARNING CENTER: A business that provides instruction in specific areas of knowledge or activities such as math, science reading, dance and martial arts, but not a public/private elementary or secondary school.

INTERIM USE: A temporary use of property until a particular date, until the occurrence of a particular event, or until the use is no longer allowed by zoning regulations.

INTERIM USE PERMIT (IUP): A permit issued by the city council in accordance with procedures specified in this title.

INTERMEDIATE CARE FACILITY: A residential facility which undertakes through its ownership or management to provide on a 24 hour per day basis, personal services and health related care and services, for each of its residents. Personal services means, in addition to housing and a minimum of two meals per day, assistance with activities of daily living, including bathing, dressing, eating, mobility and continence. Health related care and services means limited medical supervision by licensed or qualified persons, to persons who require such assistance, but who do not require the degree of care and treatment that a nursing home or hospital provides.

INTERNAL PARKING AREA: That area of the parking lot or parking area where parking stalls and the drive aisles that directly access said parking stalls are located. The area of landscaped medians internal to the parking area, rainwater gardens, fountains, infiltration basins and landscaped parking islands may be counted for the purpose of calculating internal parking area green space. The exterior perimeter of the site may not be included as part of the internal parking area green space.

KENNEL: Any place where three (3) or more dogs, cats or any combination thereof, not including offspring under seven (7) months of age, are commercially kept, boarded or offered for sale.

LARGEST WORK SHIFT: The maximum number of employees present at the facility at any one time regardless of the time period. The largest work shift may occur on a particular day of the week.

LAWN: A lawn is ground (as around a house or in a garden or park) that is covered with grass and kept mowed.

LIVING AREA: A structure or portion thereof that is used exclusively for human habitation and living facilities on a permanent, non-seasonal basis.

LOADING SPACE, OFF-STREET: Space logically and conveniently located for bulk pickups and deliveries, scaled to delivery vehicles expected to be used, and accessible to such vehicles when required off-street parking spaces are filled. Required off-street loading space is not to be included as off-street parking space in computation of required off-street parking space.

LONG-TERM CARE FACILITY: An facility that provides health care under medical supervision for twenty-four or more consecutive hours to two or more patients who are not related to the governing authority or its members by marriage, blood, or adoption.

LOT: A lot is a parcel of land of sufficient size to meet minimum zoning requirements for use and area, and to provide such yards and other open spaces. Such lot shall have frontage on an improved public street, or on an approved private street, and may consist of:

(A) A single lot of record;

(B) A portion of a lot of record;

(C) A combination of complete lots of record, of complete lots of record and portions of lots of record, or of portions of lots of record.

(D) A parcel of land described by metes and bounds.

Provided that in no case of division or combination shall any residual lot or parcel be created which does not meet the requirements of this title.

LOT AREA: The area of a horizontal plane bounded by the front, side and rear lot lines measured within the lot boundaries.

LOT, CORNER: A lot situated at the junction of, and abutting on two (2) or more intersecting streets, or a lot at the point of deflection in alignment of a continuous street, the interior angle of which does not exceed one hundred thirty-five degrees (135°).

LOT, DEPTH: The mean horizontal distance between the front lot line and the rear lot line.

LOT, INTERIOR: A lot other than a corner lot.

LOT LINE: The property line bounding a lot except that where any portion of a lot extends into the public right of way or a proposed public right of way, the line of such public right of way shall be the lot line for applying this title.

LOT LINE, FRONT: That boundary of a lot which abuts an existing or dedicated public street, and in the case of a corner lot, the lot line with the shortest dimension on a public street, except that a corner lot in a nonresidential area shall be deemed to have frontage on both streets.

LOT LINE, REAR: That boundary of a lot which is opposite the front lot line. If the rear lot line is less than ten feet (10') in length, or if the lot forms a point at the rear, the rear lot line shall be a line ten feet (10') in length within the lot, parallel to, and at the maximum distance from the front lot line.

LOT LINE, SIDE: Any boundary of a lot which is not a front lot line or a rear lot line.

LOT OF RECORD: Any validly recorded lot which at the time of its recordation complied with all applicable laws, ordinances and regulations.

LOT, THROUGH; DOUBLE FRONTED LOT: A lot which has a pair of opposite lot lines abutting two (2) substantially parallel streets, and which is not a corner lot. On a through lot, both street lines shall be front lines.

LOT WIDTH: The maximum horizontal distance between the side lot lines of a lot measured parallel to the front lot line and at the rear of the required front yard.

LOW AND MODERATE INCOME HOUSING: Low and moderate income households vary with family size. For the purpose of administering this Title, the current low and moderate income levels identified by the Metropolitan Council for both housing cost and rental shall apply.

MAJOR RECREATIONAL EQUIPMENT: Major recreational equipment includes boats and boat trailers, travel trailers, converted buses, motorized dwellings, race cars, dune buggies, cars licensed as pioneer or classic vehicles, pickup campers or coaches, (designed to be mounted on automotive vehicles) and the like.

MAJOR RENOVATIONS: All construction which repairs, remodels or alters a building ten percent (10%) or more of the existing building size.

MAJOR ROADWAYS: All roadways that are classified as a principal or minor arterial, in the Comprehensive Plan.

MANUFACTURED HOUSING: A structure, transportable in one or more sections, which in the traveling mode, is eight feet (8') or more in width or forty feet (40') or more in length, or, when erected on site, is three hundred twenty (320) or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air conditioning and electrical systems contained therein.

MANUFACTURED HOUSING PARK: Any site or tract of land upon which two (2) or more occupied manufactured homes are located.

MARINA: A place located on or immediately adjacent to a body of water where boats and other watercraft are kept, moored or stored for a consideration, and may include facilities for servicing, repairing, renting or selling watercraft and watercraft equipment or accessories.

MASONRY: A building wall construction method whereby individual bricks, stones, or concrete blocks are joined together with a mixture of cement, sand, and water.

MEDICAL WASTE TRANSFER FACILITY: A place of business engaged in the collection, containerization and shipment of medical waste, including but not limited to sharp, hazardous, and infectious substances and materials from hospitals, nursing homes, funeral homes and medical, dental and veterinary clinics. Such facility shall not include the incineration, detoxification, or reduction of such waste as a permitted, accessory, conditional, or interim use, except that such facility may include as a conditional use the decontamination of such waste through a continuous feed, dry heat autoclave system as permitted by the Minnesota Pollution Control Agency.

MINI-STORAGE: A building which contains separate, individual and private storage spaces of varying sizes leased or rented on individual leases for varying periods of time.

MINOR RENOVATIONS: Improvements made to an existing building that do not alter the size, height, or exterior wall elevations or change exterior building materials. Repairs and renovations which utilize the existing exterior materials

MODEST COST HOUSING: Housing which is built at a cost below the average housing in the community.

MOTOR FREIGHT TERMINAL: A building or area in which freight brought by motor truck is transferred and/or stored for movement in intrastate or interstate shipment by motor truck.

MOTOR FUEL STATION: A retail place of business engaged primarily in the sale of motor fuels, but also may be engaged in supplying goods and services generally required in the operation and maintenance of motor vehicles. These may include sale of petroleum products, vehicle fuels, sale and servicing of tires, batteries, automotive accessories, and replacement items, washing and lubrication services; and the performance of minor automotive maintenance and repair.

MOTOR FUEL STATION (CLASS I): A motor fuel station consisting of four (4) motor fuel dispensers or less. There shall be no more than four-hundred (400) square feet of retail sales unrelated to automobile service nor more than two (2) service bays.

MOTOR FUEL STATION (CLASS II): A motor fuel station including one or more of the following: more than four (4) motor fuel dispensers, more than four-hundred (400) square feet of retail sales unrelated to automobile service, a car wash, or more than two (2) service bays.

MOTOR HOTEL OR MOTEL: A building or group of buildings other than a hotel used primarily as a temporary residence of a motorist.

MUNICIPAL ANTENNA SITE: A location in the City of Burnsville on which is located one or more radio or television antennas available for connection and use by any person, firm or corporation in accordance with the provisions of this title.

MUNICIPALITY OR CITY: The City of Burnsville.

NON-CONFORMING USE: Use of land, buildings or structures existing at the time of adoption of this title which does not comply with all the regulations of this title or any amendments hereto governing the zoning district in which such use is located.

NON-DECORATIVE CONCRETE BLOCK: A masonry building block of cast concrete either plain or scored to give the appearance of additional joints, that has no additional surface texturing.

NOXIOUS MATTER OR MATERIALS: Material capable of causing injury to living organisms by chemical reaction, or is capable of causing detrimental effects on the physical or economic well-being of individuals.

NURSERY: An enterprise which conducts the retail or wholesale of plants grown on the site, as well as accessory items (but not power equipment such as gas or electric lawn mowers and farm implements) directly related to their care and maintenance. The accessory items normally sold are clay pots, potting soil, fertilizers, insecticides, hanging baskets, rakes and shovels.

NURSING HOME: A state licensed facility used to provide care for aged or infirm persons who require regular nursing and personal care and related services in accordance with State regulations. A nursing home may be a residential health care facility, an intermediate care facility, or a long-term care facility.

OCCUPANCY LOAD: The maximum number of persons which may be accommodated by the use as determined by its design, the Uniform Building Code or fire code regulations, whichever is greatest.

OFFICE, PROFESSIONAL OR COMMERCIAL: A building or portion of a building wherein services are performed involving predominately administrative, professional or clerical operations but where goods are not produced, sold or repaired.

OFFICE WAREHOUSE: A mix of office and warehouse uses where at least twenty-five percent (25%) of the floor area of the building is devoted to office uses.

OPEN SALES LOT: Land devoted to the display of goods for sale, rent, lease or trade where such goods are not enclosed within a building.

PANELIZED SYSTEM: Prefabricated, or factory-manufactured panels that form a structural envelope, providing insulation capacity and significantly simplify on-site framing.

PARKING LOT ISLANDS: A physically separated area from the permanently surfaced parking or driving areas which provides landscape features and helps define parking spaces.

PARKING SPACE: A permanently surfaced (concrete, bituminous, or pavers) space for one vehicle.

PATTERNS: An artistic or decorative design embedded into a concrete block or concrete panel wall or the layout or placement of brick, stone or other material, into a uniform design.

PAWNSHOP: A business that loans money on deposit or pledge of personal property or other valuable thing, or that deals in the purchasing of personal property or other valuable thing on condition of selling the same back again at a stipulated price; or that loans money secured by chattel mortgage or on personal property, taking possession of the property or any part thereof so mortgaged. Any bank, savings and loan association or credit union shall not be deemed a pawnshop.

PERFORMANCE STANDARD: Any criterion established by this title or deemed necessary by the city council to achieve the goals and objectives in the comprehensive plan.

PERSON: Includes individuals, firms, corporations, associations, trusts, partnerships and any other similar entities.

PLAIN CONCRETE BLOCK: A masonry building block of cast concrete, either plain or scored to give the appearance of additional joints, that has no additional surface texturing.

PLANNED UNIT DEVELOPMENT: A zoning district, which may include single or mixed uses, one or more lots or parcels, intended to create a more flexible, creative and efficient approach to the use of land and subject to the procedures, standards and regulations contained in this title.

PLANNING COMMISSION: The Burnsville planning commission.

PLAT: The drawing or map of a subdivision proposed for filing of record pursuant to Minnesota Statute Chapter 505 and containing all elements and requirements set forth in the city Subdivision Ordinance.

PRECAST PANEL: A building wall section of concrete poured into a form at the manufacturer's facility and shipped to the construction site for installation.

PRE-STRESSED CONCRETE PANELS: A building wall section of concrete poured into a form at the manufacturer’s facility and shipped to the construction site for installation.

PRIVATE ANTENNA: Antenna erected for noncommercial use.

PRODUCE: Farm products that are planted, maintained, and harvested by a producer or vendor.

PRODUCER: A person(s) (vendor) who owns or rents land, and plants, maintains and harvests produce.

PUBLIC VIEW: The view of any building elevation by the public from a public or private street which abuts the property.

RAIN SCREEN: An exterior weather facing surface of an exterior wall detail that stands off from the moisture resistant surface of the structural back up wall.

RAIL UNLOADING FACILITY: Any business at which railroad cars are unloaded.

RECYCLING FACILITY: Any land or structure used for salvaging operations including, but not limited to, the storage and sale of waste paper, rags, scrap metal and discarded materials and the collection, dismantlement, storage and salvage of two (2) or more unlicensed, inoperative vehicles.

RESIDENTIAL HEALTH CARE FACILITY: A facility for the frail elderly that provides on a 24 hour per day basis rooms, meals, personal care, and health monitoring services under the supervision of a professional nurse; and may provide other services, such as recreational, social, and cultural activities, financial services, and transportation.

RESTAURANT, FAST-FOOD: An establishment whose principal business is the sale of food and/or beverages in a ready-to-consume state for consumption (1) within the restaurant building, (2) within a motor vehicle parked on the premises, or (3) off the premises as carry-out orders, and whose principal method of operation includes the following characteristics: food and/or beverages are usually served in paper, plastic or other disposable containers.

RESTAURANT, STANDARD: An establishment whose principal business is the sale of food and/or beverages to customers in a ready-to-consume state, and whose principal method of operation includes one or both of the following characteristics: (1) customers, normally provided with an individual menu, are served their foods and beverages by a restaurant employee at the same table or counter at which food and beverages are consumed; (2) a cafeteria-type operation where food and beverages generally are consumed within the restaurant building.

RETAIL FOOD ESTABLISHMENT: Any fixed facility in which food or drink is offered or prepared primarily for retail sale.

RETAIL SALES: Establishments engaged in selling goods or merchandise to the general public for personal or household consumption and rendering services incidental to the sale of such goods.

RETIREMENT HOUSING: Any age-restricted residential development, other than a nursing home, that consists of attached or detached dwelling units, offering one-level living areas, common activity or recreational facilities, and independent or congregate living. Retirement housing may be an adult retirement community, a congregate residence, or an assisted living facility.

SCHOOL: Unless otherwise specifically described in the ordinances of the city or other applicable laws or regulations, the term school shall mean any building where a principal use is educational instruction.

SCREENING: A method of visually shielding or obscuring one abutting or nearby structure or use from another by fencing, walls, berms, or densely planted vegetation.

SETBACK: The minimum required distance between a sign, parking lot or the vertical wall of a building and a lot line as regulated by this title.

SEXUALLY ORIENTED BUSINESS: A sexually oriented arcade; sexually oriented bookstore, sexually oriented video store; sexually oriented cabaret; sexually oriented conversation/rap parlor; sexually oriented massage parlor; sexually oriented motel; sexually oriented motion picture theater; sexually oriented sauna; sexually oriented theater; escort agency; nude model studio; sexual encounter center; and other premises, enterprises, establishments, businesses, or places open to some or all members of the public, at or in which there is an emphasis on the presentation, display, depiction, or description of *"specified sexual activities"* or *"specified anatomical areas"* which are capable of being seen by members of the public.

(A) *Specified Anatomical Area*. Human genitals in a state of sexual arousal.

(B) *Specified Sexual Activities*. Includes any of the following:

1. The fondling or other erotic touching of human genitals, pubic region, buttocks, anus, or female breasts;

2. Sex acts, normal or perverted, actual or simulated, including intercourse, oral copulation, or sodomy;

3. Masturbation, actual or simulated; or

4. Excretory functions as part of or in connection with any of the activities set forth in subsection (B)1 through (B)3 of this definition.

SEXUALLY ORIENTED BUSINESS - ACCESSORY: The offering of retail goods for sale which are classified as sexually oriented uses on a limited scale and which are incidental to the primary activity and goods and/or services offered by the establishment. Examples of such items include the sale of sexually oriented books or magazines, or the sale and/or rental of sexually oriented motion pictures.

SEXUALLY ORIENTED BUSINESS - PRINCIPAL: The offering of goods and/or services which are classified as sexually oriented uses as a primary or sole activity of a business or establishment and include, but are not limited to the following:

(A) *Escort*. A person who, for consideration, agrees or offers to act as a companion, guide, or date for another person, or who agrees or offers to privately model lingerie or to privately perform a striptease for another person.

(B) *Escort Agency*. A person or business association who furnishes, offers to furnish, or advertises to furnish escorts as one of its primary business purposes, for a fee, tip, or other consideration.

(C) *Establishment*. Means and includes any of the following:

1. The opening or commencement of any sexually oriented business as a new business;

2. The conversion of an existing business, whether or not a sexually oriented business, to any sexually oriented business;

3. The addition of any sexually oriented business to any other existing sexually oriented business; or

4. The relocation of any sexually oriented business.

(D) *Nude Model Studio*. Any place where a person who appears in a state of nudity or displays *"specified anatomical area"* is provided to be observed, sketched, drawn, painted, sculptured, photographed, or similarly depicted by other persons who pay money or any form of consideration.

(E) *Nudity or State of Nudity*. Nudity or State of Nudity is described as follows:

1. The appearance of a human bare buttock, anus, male genitals, female genitals, or female breasts; or

2. The state of dress which fails to opaquely cover a human buttock, anus, male genitals, female genitals, or areola of the female breast.

(F) *Semi-Nude*. A state of dress in which clothing covers no more than the genitals, pubic region, and areolae of the female breast, as well as portions of the body covered by supporting straps or devices.

(G) *Sexual Encounter Center*. A business or commercial enterprise that, as one of its primary business purposes, offers for any form of consideration:

1. Physical contact in the form of wrestling or tumbling between persons of the opposite sex; or

2. Activities between male and female persons and/or persons of the same sex when one or more of the persons is in a state of nudity or semi-nude.

(H) *Sexually Oriented Arcade*. Any place to which the public is permitted or invited wherein coin-operated or slug-operated or electronically, electrically, or mechanically controlled still or motion picture machines, projectors, or other image-producing devices are maintained to show images to five (5) or fewer persons per machine at any one time, and where the images so displayed are distinguished or characterized by the depicting or describing of *"specified sexual activities"* or *"specified anatomical areas"*.

(I) *Sexually Oriented Bookstore, or Sexually Oriented Video Store*. A commercial establishment which as a principal business purpose offers for sale or rental for any form of consideration any one or more of the following:

1. Books, magazines, periodicals or other printed matter, or photographs, films, motion pictures, video cassettes or video reproductions, compact discs, computer software, digital recordings, slides, or other visual representations which depict or describe *"specified sexual activities"* or *"specified anatomical areas"*; or

(J) *Sexually Oriented Cabaret*. A nightclub, bar, restaurant, or similar commercial establishment which regularly features:

1. Persons who appear in a state of nudity; or

2. Live performances which are characterized by the exposure of *"specified anatomical areas"* or by *"specified sexual activities"*; or

3. Films, motion pictures, video cassettes, slides, compact discs, computer software, digital recordings or other photographic reproductions which are characterized by the depiction or description of *"specified sexual activities"* or *"specified anatomical areas"*.

(K) *Sexually Oriented Conversation/Rap Parlor*. A conversation/rap parlor which excludes minors by reason of age, or which provides the service of engaging in or listening to conversation, talk, or discussion between an employee of the establishment and a customer, if such service is distinguished or characterized by an emphasis on *"specified sexual activities"* or *"specified anatomical areas"*.

(L) *Sexually Oriented Massage Parlor*. A massage parlor which excludes minors by reason of age, or which provides for any form of consideration, the rubbing, stroking, kneading, tapping, or rolling of the body, if the service provided by the massage parlor is distinguished or characterized by an emphasis on *"specified sexual activities"* or *"specified anatomical areas"*.

(M) *Sexually Oriented Motel*. A hotel, motel, or similar commercial establishment which:

1. Offers accommodations to the public for any form of consideration; provides patrons with closed-circuit television transmissions, films, motion pictures, video cassettes, slides, or other photographic reproductions which are characterized by the depiction or description of *"specified sexual activities"* or *"specified anatomical areas"*; and has a sign visible from the public right-of-way which advertises the availability of this adult type of photographic reproductions; or

2. Offers a sleeping room for rent for a period of time that is less than ten (10) hours; or

3. Allows a tenant or occupant of a sleeping room to subrent the room for a period of time that is less than ten (10) hours.

(N) *Sexually Oriented Motion Picture Theater*. A commercial establishment where, for any form of consideration, films, motion pictures, video cassettes, slides, or similar photographic reproductions are regularly shown which are characterized by the depiction or description of *"specified sexual activities"* or *"specified anatomical areas"*.

(O) *Sexually Oriented Sauna*. A sauna which excludes minors by reason of age, or which provides for any form of consideration, a steam bath or heat bathing room used for the purpose of bathing, relaxing, or reducing, utilizing steam or hot air as a cleaning, relaxing, or reducing agent, if the service provided by the sauna is distinguished or characterized by an emphasis on *"specified sexual activities"* or *"specified anatomical areas"*.

(P) *Sexually Oriented Theater*. A theater, concert hall, auditorium, or similar commercial establishment which regularly features persons who appear in a state of nudity or live performances which are characterized by the exposure of *"specified anatomical areas"* or *"specified sexual activities"*.

SIGN: Any written announcement, declaration, demonstration, display, illustration, insignia, or illumination used to advertise or promote the interest of any person or persons when the same is displayed or placed out of doors in view of the general public, or inside of a building within three feet (3') of a transparent window. A sign shall be considered as a structure or a part of a structure for the purpose of applying yard and height regulations except as herein provided.

SOILS WITH VERY RAPID PERMEABILITY: Soils having a permeability rate greater than one-half (½) minute per inch.

SPECIAL SALES EVENT: Sales events such as crafts, samples, and art sales and boutiques selling handmade items, clothes, and gifts.

SPORTS ARENA: A structure where athletic sporting events are held and where accommodations for spectator viewing areas, team play, refreshments and athletic courts and/or fields are provided.

SPORTS PERFORMANCE TRAINING CENTER: A private establishment, not open to the general public, offering advanced appointment only athletic training programs for specific sports and athletic

activities often associated with athletic organizations and schools, supervised by specialized coaches present for all training sessions and where tournament and competitions may be held.

STABLE, COMMERCIAL: A building or land where horses are kept for remuneration, hire, sale, boarding, riding, or show.

STABLE, PRIVATE: Any building accessory to an existing residential, principal use that shelters horses for the exclusive use of the occupants of the premises.

STEEP SLOPES: Slopes between twelve percent (12%) and eighteen percent (18%) including all soils grouped in Dakota County Soil Survey Slope Class C.

STRUCTURE: Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures.

TEMPORARY/SEASONAL OUTDOOR SALES USES: The display or sale of the following items: Christmas trees; nursery stock, plants and related materials; garden produce; lawn, garden, patio furniture and furniture accessories; antique market not to include vehicles. Transient roadside vending is specifically not allowed.

TEXTURES: A grainy, fibrous, woven or dimensional quality to an exterior building material surface as opposed to flat or smooth surfaces.

TRADE OR BUSINESS SCHOOL: A specialized instructional establishment which provides on-site training of business, commercial, and/or trade skills such as accounting, cosmetology, data processing and computer repair. Incidental instructional services in conjunction with another use allowed in the zoning district shall not be considered a business or trade school.

TREE: Any woody plant that has at least one trunk whose diameter four feet (4') above the ground is two and one-half inches (2½") or greater.

UNADORNED/PLAIN: An exterior building material designed with little or no adornment, color impregnation, decoration, or texture.

USE, PERMITTED: A public or private use which of itself conforms with the purposes and objectives of a particular district and conforms with all requirements, regulations and performance standards of such district.

USE, PRINCIPAL: The main use of land or buildings as distinguished from accessory uses. A "principal use" may be either permitted or conditional.

USE, TEMPORARY: One established for a fixed period of time with the intent to discontinue such use upon the expiration of such time.

VARIANCE: Permission to depart from the requirements of this title.

VEGETATION: All plant growth, including without limitation, trees, shrubs, mosses and grasses.

VERTICAL PATTERNS: An artistic or decorative vertical design embedded into a decorative concrete block or acceptable concrete panel wall or the use of brick, stone, block or other material which is incorporated into the overall design through vertical forms.

VERY SHALLOW SOILS: Soils located over bedrock which lies zero feet (0') to three feet (3') below the ground surface.

VERY STEEP SLOPES: Slopes of over eighteen percent (18%) including all soils grouped in Dakota County Soil Survey Slope Class D, E, F.

VISUAL RELIEF: The incorporation of design features of a building that would include horizontal and vertical patterns, contrasting materials, colors and/or varying wall depths to prevent a continual flat expanse of wall.

WAREHOUSING: The storage of materials, goods, or equipment within an enclosed building.

WETLAND: A low area permanently or seasonably covered with shallow water including marsh, swamp, bog, wet meadow, slough or intermittent lake.

WHOLESALING: The selling of goods, materials, or equipment may be made in bulk to other businesses. No sales shall be made on the premises to the general public or individual members of a purchasing club.

WOODLAND: A group of trees at least one-half (½) acre in area and with a crown cover of fifty percent (50%) or greater.

YARD: A required open space on a lot which is unoccupied and unobstructed by a structure from its lowest ground level to the sky except as expressly permitted in this title. A yard shall extend along a lot line and at right angles to such lot line to a depth or width specified in the yard regulations for the district in which such lot is located.

YARD, FRONT: A yard extending along the full width of the front lot line between side lot lines and extending from the abutting front street right of way line to a depth required in the yard regulations for the district in which such lot is located.
YARD, REAR: A yard extending along the full width of the rear lot line between the side lot lines and extending toward the front lot line for a depth as specified in the yard regulations for the district in which such lot is located.

YARD, SIDE: A yard extending along the side lot line between the front and rear yards having a width as specified in the yard regulations for the district in which such lot is located.

[5-5-97 Amd. Sec. 2 Ord. 666]; [10-6-97 Amd. Sec. 2 Ord. 687]; [11-17-97 Amd. Sec. 2 Ord. 692]; [5-4-98 Amd. Sec. 2 Ord. 713]; [5-17-99 Amd. Sec. 2 Ord. 752]; [7-19-99 Amd. Sec. 2 Ord. 760]; [1-18-00 Amd. Sec. 2 Ord. 781]; [2-7-00 Amd. Sec. 2 Ord. 783]; [4-17-00 Amd. Sec. 2 Ord. 790]; [11-5-01 Amd. Sec. 2 Ord. 830]; [7-1-02 Amd. Sec. 2 Ord. 851]; [8-16-04 Amd. Sec. 2 Ord. 938]; [2-7-05 Sec. 4 (2) Ord 960]; [6-19-06 Amd. Sec. 2 Ord 1035]; [12-4-06 Amd. Sec. 2 Ord. 1056]; [12-18-06 Amd. Sec. 2 Ord. 1059]; [8-19-08 Sec. 2 Ord. 1132]; [12-1-08 Amd. Sec. 2 Ord 1143]; [4-6-10 Amd. Sec. 2 Ord. 1196]

CHAPTER 5

ADMINISTRATION

SECTION:

10-5-1: Development Administration; Duties
10-5-2: Development Review Committee; Duties
10-5-3: Certificate Of Occupancy
10-5-4: Variances
10-5-5: Conditional Uses
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10-5-6: Text Amendments And Zoning District Changes
10-5-7: Filing With County Recorder
10-5-8: Appeals
10-5-9: Fees
10-5-10: Certificate of Taxes Paid

10-5-1: DEVELOPMENT ADMINISTRATION; DUTIES:

(A) **The City Planner shall:**

1. Administer and enforce this title.

2. Maintain permanent and current records of this title, including but not limited to, all maps, amendments and conditional uses, variances, appeals, and applications therefore.

3. Receive, file and forward all applications for appeals, variances, conditional uses, amendments or other matters to the designated official bodies, and shall act as the official liaison between the planning commission and city council.

4. Serve as chair of the development review committee (DRC).

5. Designate appropriate city employees or consultants to act in his or her place.

(B) **The Building Official shall:**

1. Review and determine that all building permits and certificates of occupancy comply with the terms of this title.

2. Be responsible for the periodic inspection of buildings and land uses within the city to insure compliance with the terms of this title.

3. Initiate in the name of the city any appropriate actions or proceedings against any violator of this Title, as provided by law.

4. Designate appropriate city employees or consultants to act in his or her place.

10-5-2: **DEVELOPMENT REVIEW COMMITTEE; DUTIES:** The development review committee (DRC) shall consist of the city planner, director of public works/city engineer, building official, fire marshal, crime prevention officer, economic development coordinator, director of parks, recreation and natural resources. Each member may designate an appropriate city employee to act in his or her place. The DRC shall determine technical conformance of proposed developments with the requirements of this title. The DRC shall also review and make recommendations to the planning commission and city council regarding all other requests for land use related applications including but not limited to applications for variances, conditional uses, text amendments and zoning district changes. (Ord. 261, 7-18-83).

10-5-3: **CERTIFICATE OF OCCUPANCY:**

(A) No building or structure hereafter erected or moved, or that portion of an existing structure or building erected or moved shall be occupied or used in whole or in part for any purpose whatsoever until a certificate of occupancy shall have been issued by the building official stating that the building or structure complies with this title and applicable State Building Code sections.

(B) **Application:** The certificate of occupancy shall be applied for coincident with the application for a building permit, conditional use permit and/or variance, and shall be issued within ten (10) days after the building official finds the building or structure satisfactory and passed final inspection. The application shall be accompanied by a fee as established by city council ordinance.

10-5-4: **VARIANCES:**

(A) **Purpose:** The city council may grant a variance from the strict application of this title and impose conditions and safeguards on the variance so granted only in instances where their strict enforcement would cause undue hardship because of circumstances unique to the individual property under consideration, and may grant a variance only when it is demonstrated that such actions will be in keeping with the spirit and intent of this title. "Undue hardship" as used in connection with the granting of a variance means the property in question cannot be put to a reasonable use if used under conditions allowed by the official controls, the plight of the landowner is due to circumstances unique to his property not created by the landowner, and the variance, if granted, will not alter the essential character of the locality. Economic considerations alone shall not constitute an undue hardship if reasonable use for the property exists under the terms of this Title. Undue hardship also includes, but is not limited to, direct sunlight for solar energy systems. A variance shall not be granted to allow a use not otherwise permitted in the zoning district involved.

(B) **Application:** An application for a variance shall be filed with the city planner and shall state the unique circumstances claimed as a basis for the variance. The application shall contain at least the following information:

1. The signature of each owner of affected property or his agent.

2. The legal description of the property and the common address.

3. A description of the variance requested and a statement demonstrating that the variance would conform to the requirements necessary for approval.

4. The present use.

5. Any maps, drawings and plans that the city planner considers to be of value in considering the application.

(C) **Referral to Planning Commission:** The application shall be referred to the planning commission for study concerning the effect of the proposed variance upon the Comprehensive Plan, and upon the character and development of the surrounding neighborhood. The planning commission shall make a recommendation to the city council to grant or deny the variance, and may recommend imposing conditions in the granting of the variance. The conditions may include considerations such as location, character and other features of the proposed building.

(D) **Approval; Denial:** Variances require the approval of a majority vote of the entire city council. Variances may be denied by motion of the city council and such motion shall constitute a determination that the findings required for approval do not exist. No application for a variance which has been denied in whole or in part shall be resubmitted within six (6) months of the date of the order of denial, except upon grounds of new evidence or upon proof of change of conditions. The city council may impose conditions upon the granting of a variance. The conditions may include considerations such as location, aesthetics and other features of the proposed buildings.

(E) **Decision Period:** All applications shall be reviewed consistent with Minnesota Statute §15.99.

(F) **Revocation:** A violation of any condition attached to the approval of a variance shall constitute a violation of this title and shall constitute sufficient cause for the termination of the variance by the city council.

(G) **Expiration:** If the development does not proceed within one year of the date on which the variance was granted, such variance shall become void, except that, on application, the city council may extend the variance for such additional period as it deems appropriate.

10-5-5: CONDITIONAL USES:

(A) **Purpose:** "Conditional Use" means a land or development as defined by ordinance that would not be appropriate generally but may be allowed with appropriate restrictions as provided by official controls upon a finding that (1) certain conditions as detailed in the zoning ordinance exist, and (2) the use or development conforms to the comprehensive land use plan of the county and (3) is compatible with the existing neighborhood.

(B) **Application, Public Hearing, Notice and Procedure:** The application, public hearing, public notice and procedure requirements for conditional use permits shall be the same as those for amendments as provided in section 10-5-6, except that the permit shall be issued on the affirmative vote of a majority of the entire council. Although specific submittals required to complete an application for a conditional use permit may vary with the specific use and the district in which it is located, all applications for such permits must include at minimum a site plan that clearly illustrates the following: proposed land use, building mapping and functions, circulation and parking areas, planting areas and treatment, sign locations and type, basic lighting concerns, the relationship of the proposed project to neighboring uses, environmental impacts and demand for municipal services.

(C) **Standards:** The planning commission shall recommend a conditional use permit and the council shall issue such conditional use permits only if it finds that such use at the proposed location:

1. Will not be detrimental to or endanger the public health, safety, comfort, convenience or general welfare of the neighborhood or the city.

2. Will be harmonious with the general and applicable specific objectives of the city's Comprehensive Plan and this title.

3. Will be designed, constructed, operated and maintained so to be compatible in appearance with the existing or intended character of the general vicinity and will not change the essential character of that area.

4. Will not be hazardous or disturbing to existing or future neighboring uses.

5. Will be served adequately by essential public facilities and services, including streets, police and fire protection, drainage structures, refuse disposal, water and sewer systems and schools; or will be served adequately by such facilities and services provided by the persons or agencies responsible for the establishment of the proposed use.

6. Will not create excessive additional requirements at public cost for public facilities and services and will not be detrimental to the economic welfare of the community.

7. Will not involve uses, activities, processes, materials, equipment and conditions of operation that will be detrimental to any persons, property or the general welfare because of excessive production of traffic, noise, smoke, fumes, glare or odors.

8. Will have vehicular approaches to the property which do not create traffic congestion or interfere with traffic on surrounding public thoroughfares.

9. Will not result in the destruction, loss or damage of a natural, scenic or historic feature of major importance.

10. Will not depreciate surrounding property values.

(D) **Conditions:** In reviewing applications for conditional use permits, the planning commission and the council may attach whatever reasonable conditions they deem necessary to mitigate anticipated adverse impacts associated with these uses, to protect the value of other property within the district, and to achieve the goals and objectives of the Comprehensive Plan. Such conditions may include, but are not limited to, the following:

1. Controlling the number, area, bulk, height and location of such uses.

2. Regulating ingress and egress to the property and the proposed structures thereon with particular reference to vehicle and pedestrian safety and convenience, traffic flow and control, and access in case of fire or other catastrophe.

3. Regulating off-street parking and loading areas where required.

4. Utilities with reference to location availability and compatibility.

5. Berming, fencing, screening, landscaping or other facilities to protect nearby property.

6. Compatibility of appearance.

In determining such conditions, special consideration shall be given to protecting immediately adjacent properties from objectionable views, noise, traffic and other negative characteristics associated with such uses.

(E) **Denial for Noncompliance**: If the planning commission recommends denial of a conditional use permit or the council orders such denial, it shall include in its recommendation or determination findings as to the ways in which the proposed use does not comply with the standards required by this title.

(F) **Permittee:** A conditional use permit shall be issued for a particular use and not for a particular person.

(G) **Periodic Review:** A periodic review of the use may be attached as a condition of approval of a conditional use permit.

(H) **Revocation:** Failure to comply with any condition set forth in a conditional use permit, or any other violation of this title, shall be a misdemeanor and shall also constitute sufficient cause for the termination of the conditional use permit by the city council following a public hearing.

(I) **Expiration:** If substantial construction has not taken place within one year of the date on which the conditional use permit was granted, the permit is void except that, on application, the council, after receiving recommendation from the planning commission, may extend the permit for such additional period as it deems appropriate. If the conditional use is discontinued for six (6) months, the conditional use permit shall become void. This provision shall apply to conditional use permits issued prior to the effective date of this title, but the six (6) month period shall not be deemed to commence until the effective date of this title.

(J) Any minor extensions, alterations or modifications of existing buildings or structures may be authorized by the development review committee if they are consistent with the purposes and intent of the final plan. No change may increase the cube of any building or structure by more than ten percent (10%).

10-5-5A: **INTERIM USES:**

(A) **Purpose:** The purpose and intent of allowing interim uses is (1) to allow a use for a limited period of time that reasonably utilizes the property where it is not reasonable to utilize it in the manner provided in the comprehensive guide; and (2) to allow a use that is presently acceptable but that, with anticipated development will not be acceptable in the future.

(B) **Application, Public Hearing, Notice and Procedure:** The application, public hearing, public notice and procedure requirements for interim use permits shall be the same as those for zoning amendments as provided in section 10-5-6.

(C) **Standards:** The planning commission shall recommend an interim use permit and the council shall issue such interim use permits only if it finds that such use at the proposed location:

1. Meets the standards of a conditional use permit set forth in section 10-5-5 of this title.

2. Conforms to the zoning regulations, performance standards and other requirements.

3. Is allowed as an interim use in the zoning district.

4. Will terminate upon a date or event that can be identified with certainty.

5. Will not impose, by agreement, additional costs on the public if it is necessary for the public to take the property in the future.

6. Will be subjected to, by agreement with the owner, any conditions that the city council has deemed appropriate for permission of the use, including a condition that the owner will provide an appropriate financial surety to cover the cost of removing the interim use and any interim structures upon the expiration of the interim use permit.

(D) **Termination:** An interim use permit shall terminate upon the occurrence of any of the following events; whichever first occurs:

1. The date stated in the permit; or

2. A violation of conditions under which the permit was issued; or

3. A change in the city's zoning regulations which renders the use nonconforming.

10-5-6: TEXT AMENDMENTS AND ZONING DISTRICT CHANGES:

(A) **Initiation:** Amendments of this title may be initiated by:

1. A petition of the owner or owners of the property, the zoning of which is proposed to be changed.

2. A recommendation of the planning commission.

3. By action of the city council.

(B) **Application:** Except for minor amendments for which information requirements shall be established by the city planner, amendments initiated by the petition of property owners shall be filed in the planning department and include the following information:

1. A generalized location map showing the location of the proposed site in relation to the city.

2. A scale plot plan, with north indicated, of the proposed site showing all site dimensions.

3. All types of proposed uses.

4. Location of all buildings and structures on the proposed site.

5. Elevation drawings or illustrations indicating the architectural treatment of all proposed buildings and structures.

6. An abstractor's certificate showing the names and addresses of all property owners within three hundred fifty feet (350') of the outer boundaries of the proposed site.

7. Any plans for the modification of standards set by this Title or any other provision of this code.

8. Location and size of all required parking spaces.

9. Landscape plan subject to chapter 30A of this title.

10. General floor plans of all proposed buildings and structures.

11. Indication of location, size and type of facilities for the storage of trash and waste materials.

12. Design layout and size of all proposed signs.

13. Drainage plan of the proposed site.

(C) **Public Hearing; Notice and Procedure:** The planning commission shall hold at least one public hearing affording an opportunity for all parties interested to be heard and shall give not less than ten (10) days nor more than thirty (30) days notice of time and place of such hearing, and of the expected date of city council consideration, published in the designated legal newspaper for the city. Such notice shall also contain the description of the land and the proposed zoning changes. When an amendment involves changes in district boundaries of an area of five (5) acres or less, at least ten (10) days before the hearing, the city planner, on behalf of the planning commission chair, shall mail an identical notice to the owner and to each of the property owners situated wholly or partly within three hundred fifty feet (350') of the outside boundaries of the land proposed to be rezoned. When an apartment building owner is notified, a notice shall also be sent to the apartment manager for posting, and when a non-local business owner is notified, a notice shall also be sent to the local business address. The applicant shall post a sign on the property indicating a rezoning proposal is under consideration. The sign shall be posted on the property at least (10) days prior to the hearing before the planning commission. Failure to post the notice or to properly mail the notice, or failure of the property owners to receive the notice shall not invalidate the proceedings.

(D) **Action by Planning Commission:** The city council shall not rezone any land or make any other amendment to this title without having first referred it to the planning commission for their consideration and recommendation. The planning commission shall make a written report to the city council stating its findings and recommendations.

(E) **Action by City Council:** The city council shall consider the amendment at the next available city council meeting after the receipt of the report and recommendations from the planning commission. Failure to receive a report from the planning commission as herein provided shall not invalidate the proceedings or actions of the city council.

The city council may continue its consideration for further investigation. The council may also request further information from the staff and planning commission. Upon conclusion of its consideration, the city council shall consider findings for either approval, denial or approval with modification.

(F) **Approval; Denial:** This title may be amended by a (3/5) simple majority vote of the entire city council. Zoning district changes from residential classification to commercial or industrial classifications may be amended by a 4/5 vote of the entire council. All other zoning district changes may be amended by a 3/5 vote of the entire city council. Refusal to amend the title shall constitute a finding and determination that the proposed amendment is not consistent with the goals and policies of the Comprehensive Plan. No application which has been denied wholly or in part shall be reconsidered for a period of six (6) months from the date of the order of denial, except on grounds of new evidence or proof of change of conditions.

(G) **Decision Period:** All applications shall be reviewed consistent with Minnesota Statute §15.99.

10-5-7: **FILING WITH COUNTY RECORDER:** A certified copy of approved conditional use permits, interim use permits, ordinances rezoning property and variances shall be filed with the County Recorder or Registrar of Titles.

10-5-8: **APPEALS:**

(A) At any time within thirty (30) days after the city planner, development review committee or other city employee or committee makes a decision under the provisions of this title, except in connection with prosecution for violations thereof, the applicant or other person affected thereby may appeal the decision by filing a written notice stating the action appealed from and stating the specific grounds upon which the appeal is made.

(B) The planning commission shall conduct a public hearing on the appeal and make a recommendation to the city council.

(C) The city council, acting as the Board of Adjustment and Appeals, shall conduct a public hearing and make the final determination.

(D) Notice of the hearing before the planning commission and city council shall be mailed to all appellants. In all cases involving determination of district boundary lines, or interpretation of the text of the title, ten (10) days published notice of hearing in the official newspaper shall be given.

10-5-9: **FEES:** The fees required for processing applications shall be as established by the city council from time to time. In addition, the applicant shall be required to reimburse the city for all out-of-pocket expenses the city incurs in having consultants and its attorneys review the application. The city may require a deposit on the anticipated costs before processing the application.

10-5-10: **CERTIFICATION OF TAXES PAID:** Prior to the city processing or approving any land use, zoning application, or permit under the city's official controls, the applicant shall provide certification to the city that there are no delinquent property taxes, special assessments, interest, or city utility fees due for the property to which the application relates. Applications or permits shall not be processed until outstanding amounts are paid in full. Property taxes which are being paid under the provisions of a stipulation, order, or confession of judgment, or which are being appealed as provided by law, are not considered delinquent for purposes of this section provided all required payments that are due under the terms of the stipulation, order, confession of judgment, or appeal have been paid. (Ord. 1189, 1-19-10)

[7-1-02 Amd. Sec. 6 (F) Ord 851; [6-3-08 Amd, Sec, 4(E), Sec. 6(D), (E) Ord 1122]; [4-6-2010 Amd. Secs. 1(B), 2, 3, 4, 5(B), 5A(C),6(B), 6(C), 7, Ord. 1196];

CHAPTER 6

ZONING; DISTRICTS AND MAPS

SECTION:

10-6-1: Establishment of Districts
10-6-2: Map
10-6-3: Annexed Territory
10-6-4: Interpretation of District Boundaries
10-6-5: Lot Area, Lot Width and Yard Requirement Summary

10-6-1: **ESTABLISHMENT OF DISTRICTS:** The following zoning classifications are hereby established within the city.

(A) **Residential Districts:** (Ord. 1196, 4-6-10)
R-1 One Family Residential District
R-1A One Family Rural Residential District
R-2 Two Family Residential District
R-3A Medium Density Residential District
R-3B High Density Residential District
R-3C Regional Center Residential District
R-3D Manufactured Housing District (Ord. 379, 8-6-90; amd. Ord. 859, 9-16-2002)

(B) **Business Districts:**
B-1 Office Business District
B-2 Neighborhood Business District
B-3 General Business District
B-4 Highway Commercial District (Ord. 244, 11-15-82; amd. Ord. 364, 2-20-90)
CRD Commercial Recreation District (Ord. 960, 2-7-05)

(C) **Heart of The City District:** (Ord. 764, 8-18-99)
HOC-1 Heart of the City District
HOC-2 Heart of the City District

(D) **Industrial Districts:**
I-1 Industrial Park District
I-2 General Industry District
I-3 Office and Industrial Park District
GIM Gateway Industrial Medium District
GIH Gateway Industrial Heavy District (Ord. 244, 11-15-1982; Ord. 338, 3-6-1989; Ord. 862, 11-18-2002)

(E) **Special Districts:** (Ord. 1196, 4-6-10)
CD Conservancy District (Ord. 244, 11-15-82)
Environmental Overlay Districts
Flood Plain Overlay Districts
GW Gateway District
P Park District
PUD Planned Unit Development District

10-6-2: **MAP:**

(A) The location and boundaries of the districts established by this text and hereby set forth on the a map entitled "Zoning Map/City of Burnsville". The map shall be on file with the city clerk, and hereinafter referred to as the "Zoning Map". The Zoning Map and all the notations, references, and other information shown thereon shall have the same force and effect as if fully set forth herein and is thereby made a part of this title by reference.

(B) The Zoning Map dated January 20, 2004, is incorporated as a part of this ordinance and is hereby adopted as the Official Zoning Map for the City of Burnsville.

10-6-3: **ANNEXED TERRITORY:** Annexed territory shall be in the R-1 District unless special action is taken to place it in another district.

10-6-4: **INTERPRETATION OF DISTRICT BOUNDARIES:** The following rules shall be used to determine the precise location of any zone boundary shown on the official Burnsville Zoning Map.

(A) Boundaries shown as following or approximately following the limits of any municipal corporation shall be construed as following such limits.

(B) Boundaries shown as following or approximately following streets shall be construed to follow the centerlines of such streets.

(C) Boundary lines which follow or approximately follow platted lot lines or other property lines as shown on the city parcel maps shall be construed as following such lines.

(D) Boundaries shown as following or approximately following section lines, half-section lines, or quarter-section lines shall be construed as following such lines.

(E) Boundaries shown as following or approximately following railroad lines shall be construed to lie midway between the main tracks of such railroad lines.

(F) Boundaries shown as following or approximately following shorelines of any lakes shall be construed to follow the mean high waterlines of such lakes, and, in the event of change in the ordinary high waterline, shall be construed as moving with the actual mean high waterline.

(G) Boundaries shown as following or approximately following the centerlines of streams, rivers or other continuously flowing watercourses shall be construed as following the channel centerline of such watercourses taken at mean low water, and, in the event of a natural change in the location of such streams, rivers or other watercourses, the zone boundary shall be construed as moving with the channel centerline.

(H) Boundaries shown as separated from, and parallel or approximately parallel to, any of the features listed in subsections (A) through (G) above shall be construed to be parallel to such features and at such distances therefrom as are shown on the map.

(I) Appeals concerning the exact location of zoning district boundary lines shall be heard and decided in accordance with section 10-5-6 of this title.

10-6-5: LOT AREA, LOT WIDTH AND YARD REQUIREMENT SUMMARY:

	R-1A	R-1	R-2	R-3A	R-3B	R-3C	R-3D
Lot Area (Interior)	1 acre[9]	10,000	15,000	20,000[1]	18,000[2]	20,000[3]	3,600
(Corner)	1 acre[9]	12,000		22,000[1]	20,000[2]	22,000[3]	4,500
Lot Width (Interior)	120	80	100	100	100	100	40
(Corner)	130	90	100	100	100	100	50
Setback - Principal Structure[4]							
Front Yard	50	30	30	30	40 (50)	40 [50]	15
Side Yard	10	10[8]	10	30	30 (40)	30 [40]	10
Side Yard (Street)	40	20	20	30	40 (40)	40 [40]	15
Rear Yard	30	30	30	30	30 (40)	30 [40]	10
Setback – Accessory Structure							
Front Yard	50	30	30	30	40 (50)	40 [50]	15
Side Yard	5	5[8]	5	5	5 (10)	5 [10]	5
Side Yard (Street)	40	20	20	30	30 (30)	30 [30]	10
Rear Yard	8	8	8	5	5 (10)	5 [10]	5
Setback – Parking							
Front Yard	drivewa y only	driveway only	Driveway only	20 (30)	20 (40)	20 [40]	10
Side Yard	5	5	5	5 (15)	5 (15)	5 [15]	5
Side Yard (Street)	10	10	10	20 (30)	20 (40)	20 [40]	10
Rear Yard	5	5	5	5 (15)	5 (15)	5 [15]	5

(Setbacks in parentheses apply adjacent to R-1, R-1A, and R-2)
[Setbacks in brackets apply adjacent to R-1, R-1A, R-2 and R-3A]
All area measurements are in sq. ft. and all linear measurements are in feet.

[1] Plus 5,000 square feet for every dwelling unit over 4 units.
[2] Plus 3,000 square feet for every dwelling unit over 6 units.
[3] Plus 2,000 square feet for every dwelling unit over 10 units.
[4] In the R-3A, R-3B, and R-3C districts, greater setbacks apply adjacent to streets of higher carrying capacity than standard residential streets. See the appropriate section of the Zoning Ordinance.
[5] Or 1.5 times height, as measured from the nearest property line, whichever is greater.
[6] Or 0.6 (1.5) times height, as measured from the nearest property line, whichever is greater.
[7] Or 0.6 [1.5] times height, as measured from the nearest property line, whichever is greater.
[8] (a) The setback reduction is for the garage structure, and
(b) There is a minimum of (15') between neighboring structures.
[9] The minimum lot area without city sewer and water is 2 acres of dry buildable land.

	B-1	B-2	B-3	B-4
Lot Area	20,000	20,000	20,000	40,000
Lot Width	100	100	100`	150
Setback - Principal Structure				
Front Yard	30 (30)	30 (30)[1]	30 (30)[1]	40 (40)
Side Yard	10 (30)	10 (30)	10 (30)	20 (30)
Side Yard (Street)	30 (30)	30 (30)	30 (30)	40 (40)
Rear Yard	20 (20)	30 (30)	30 (30)	40 (40)
Setback - Accessory Structure				
Front Yard	30 (30)	30 (30)	30 (30)[1]	40 (40)
Side Yard	5 (30)	10 (30)	10 (30)	15 (30)
Side Yard (Street)	30 (30)	20 (30)	30 (30)	40 (40)
Rear Yard	8 (30)	8 (30)	30 (30)	40 (40)
Setback – Parking				
Front Yard	30 (30)	10 (30)	10 (30)	20 (30)
Side Yard	5 (30)	5 (30)	5 (30)	15 (30)
Side Yard (Street)	30 (30)	10 (30)	10 (30)	20 (30)
Rear Yard	8 (30)	5 (30)	10 (30)	15 (30)

(B-1, B-2 and B-3 setbacks in parentheses apply adjacent to Residential Districts. B-4 setbacks in parentheses apply adjacent to R-1, R-1A, and R-2)

[1] 30 or 1½ times the building height whichever is greater.

All area measurements are in square feet and all linear measurements in feet.

	I-1	I-2	I-3	GIM	GIH
Lot Area	40,000	40,000	40,000	40,000	40,000
Lot Width	150	100	100	150	150
Setback - Principal Structure					
Front Yard	40[1] (60)	40 (50)	40[1] (60)	40[1] (60)	40[1] (60)
Side Yard	20 (40)	15 (10)	20 (40)	20 (40)	20 (40)
Side Yard (Street)	40 (40)	40 (50)	40 (40)	40 (40)	40 (40)
Rear Yard	20 (60)	30 (50)	20 (60)	20 (60)	20 (20)
Setback - Accessory Structure					
Front Yard	40 (40)	40 (50)	40 (60)	40 (60)	40 (60)
Side Yard	10 (20)	15 (50)	10 (20)	10 (20)	10 (20)
Side Yard (Street)	40 (40)	40 (50)	40 (40)	40 (40)	40 (40)
Rear Yard	20 (20)	30 (50)	20 (20)	20 (20)	20 (20)
Setback – Parking					
Front Yard	20 (20)	10 (20)	20 (20)	20[2] (20[2])	20[2] (20[2])
Side Yard	15 (20)	5 (20)	15 (20)	15 (20)	5 (20)
Side Yard (Street)	15 (20)	10 (20)	20 (20)	20 (20)	15 (20)
Rear Yard	15 (20)	5 (20)	15 (20)	15 (20)	5 (20)

(Setbacks in parentheses apply adjacent to R-1, R-1A and R-2. A 20 foot setback is required for any structure or parking adjacent to any other residential district.)

[1] Plus 1' for every 1' of building height over 30' (maximum setback 80').
[2] 25 feet for front yard abutting TH 13, or its frontage road, or CSAH 5.

All area measurements are in square feet and all linear measurements in feet.

[1-20-04 Amd. Sec. 2 (B) Ord. 907]; [7-6-04 Amd. Sec. 5 Ord. 932]; [2-7-05 Amd. 6 (1) (B) Ord. 960]; [4-6-10 Amd. 1(A) & (E) Ord. 1196]

CHAPTER 7

GENERAL PROVISIONS

SECTION:

10-7- 1: Purpose
10-7- 2: Nonconformities
10-7- 3: Lot Provisions
10-7- 4: Accessory Buildings And Structures
10-7- 5: Required Yards And Open Space
10-7- 6: Traffic Visibility
10-7- 7: Essential Services
10-7- 8: Farming Operations
10-7- 9: Noise
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10-7-11: Toxic Or Noxious Matter
10-7-12: Odors And Air Pollution
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10-7-17: Explosives
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10-7-19: Fences
10-7-20: Maintenance
10-7-21: Exterior Storage
10-7-22: Waste Material
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10-7-24: Traffic Control
10-7-25: Emergency Vehicle Access
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10-7-27: Off-Street Loading
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10-7-29: Solar Energy Systems
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10-7-31: Animals
10-7-32: Manufactured Housing (Rep. by Ord. 328, 9-19-88)
10-7-33: Height Limitations
10-7-34: Relocated Structures
10-7-35: Demolition of Structures
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10-7-37: Public Right-Of-Way
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10-7-39: Pawnshops
10-7-40: Sexually Oriented Businesses
10-7-41: Commercial Zero Lot Line Development
10-7-42: Incidental Accessory Use Permits
10-7-43: Accessory Car Wash
10-7-44: Office-Warehouse, Office And Wholesale Showroom And Multi-Tenant Warehouse Facilities
10-7-45: Open Storage Lot
10-7-46: Open Sales/Rental Lot
10-7-47: Community Gardens Temporarily Permitted ***(Temp Ord. Expires 12-1-2010)***

10-7-1: **PURPOSE:**

(A) Excessive uniformity, dissimilarity, inappropriateness or poor quality of design in the exterior appearance of structures and the lack of proper attention to site development and landscaping in the city hinder the harmonious development of the city, impair the desirability of residences, investment or occupation in the city, limit the opportunity to attain the optimum use and value of land and improvements, adversely affect the stability and value of property, produce degeneration of conditions affecting the peace, health and welfare of the city, and destroy a proper relationship between the taxable value of property and the cost of municipal services. A primary purpose of this title is to eliminate such problems.

(B) The maintenance of certain standards is essential to insure compatible relationships between land uses within a community. All uses allowed, as either permitted or conditional uses within the city's various zoning districts, shall conform to the following general provisions and performance standards.

10-7-2: **NONCONFORMITIES:** (Ord. 1196, 4-6-10)

(A) Except as otherwise provided by law and this title, any nonconformity, including the lawful use or occupation of land or premises existing upon April 6, 2010 may be continued through repair, replacement, restoration, maintenance, or improvement, but not including expansion, unless: (Ord. 1196, 4-6-10)

1. the nonconformity or occupancy is discontinued for a period of more than one (1) year; or (Ord. 1196, 4-6-10)

2. any nonconforming use is destroyed by fire or other peril to the extent of greater than fifty percent (50%) of its estimated market value, as indicated in the records of the county assessor at the time of damage, and no building permit has been applied for within one hundred eighty (180) days of when the property is damaged. In this case, the city council may impose reasonable conditions on a zoning or building permit in order to mitigate any newly created impact on adjacent property or water body. (Ord. 1196, 4-6-10)

(B) Any subsequent use or occupancy of the land or premises shall be a conforming use or occupancy. (Ord. 1196, 4-6-10)

(C) Nothing in this title shall prevent a property owner from putting a structure in safe condition after the structure has been declared unsafe by the building inspector.

(D) Any structure which will, under this title, become nonconforming but for which a building permit has been lawfully granted prior to April 6, 2010 (the effective date of this title or of amendments thereto), may be completed in accordance with the approved plans, provided construction is started within six (6) months of the effective date of this title or amendment thereof and continues to completion within one (1) year. (Ord. 1196, 4-6-10)

(E) A lawful nonconforming use of a structure or land may be changed to a more restrictive nonconforming use. Once a structure or parcel of land has been placed in a more restrictive nonconforming use, it shall not return to a less restrictive nonconforming use.

(F) Alterations may be made to a building containing lawful nonconforming residential units when they will improve the livability thereof, provided they will not increase the number of dwelling units.

(G) Improvements may be made to existing lawful nonconforming structures, provided that such improvements shall not enlarge the structure by fifty percent (50%) or more.

(H) A nonconforming use of a structure or land shall not be moved to any other part of the parcel upon which it was conducted or located at the time of adoption or amendment to this title unless the movement will reduce the nonconformity. (Ord. 244, 11-15-1982)

(I) For nonconforming uses as a result of some properties zoned I-2, B-3, and B-4 to GIM and GIH. (see chapters 26A and 26B of this title). (Ord. 864, 11-18-2002)

(J) The city may impose upon nonconformities reasonable regulations to prevent and abate nuisances and to protect the public health, welfare or safety. (Ord. 935, 8-2-2004)

10-7-3: **LOT PROVISIONS:**

(A) A lot of record lawfully existing upon the effective date of this title in an R residential district which does not meet the requirements of this title as to area or width may be used for a single family detached dwelling purpose provided the measurements of both the area and width are each within seventy percent (70%) of the requirements of this title. The lot of record shall not be more intensively developed unless combined with one or more abutting lots or portions thereof so as to create a lot meeting the requirements of this title.

(B) Except by the use of a conditional use permit or planned unit development, not more than one principal structure shall be located on a lot of record.

10-7-4: **ACCESSORY BUILDINGS AND STRUCTURES:**

(A) No accessory building or structure shall be constructed on any lot prior to the time of construction of the principal building to which it is accessory.

(B) No accessory building or structure shall exceed the height of the principal building or structure. However, in no case shall such accessory building exceed fifteen feet (15') in height with ten foot (10’) side walls in the R-1 district, and twenty feet (20’) in height in the R-1A district.

(C) In the R-1 district accessory buildings and structures identified in item (L) of this section and not exceeding five hundred (500) square feet of floor area each are allowed as follows: (Ord. 1196, 4-6-10)

1. Accessory buildings and structures may not exceed five hundred (500) square feet of floor area each, except for swimming pools and sport courts which may not exceed one thousand (1,000) square feet. An accessory building on a lot with an existing garage, and swimming pool or sport court may not exceed two hundred twenty five (225) square feet.

2. If a lot has a home with an attached garage, one (1) gazebo and one (1) additional accessory building, and one (1) swimming pool or sport court is permitted; (Ord. 1196, 4-6-10)

3. If a lot has a home with a detached garage, one (1) gazebo and one (1) additional accessory building, or one (1) swimming pool or sport court in addition to the existing detached garage is permitted. (Ord. 1196, 4-6-10)

4. If a lot has a home without an attached garage or detached garage, one (1) garage, one (1) gazebo and one (1) additional accessory building, or one (1) swimming pool or sport court is permitted. (Ord. 1196, 4-6-10)

(D) In the R-1A district, accessory buildings or structures identified in item (L) of this section shall be allowed as follows: (Ord. 1196, 4-6-10)

1. Lots less than two (2) acres in size shall follow the same requirements as in the R-1 district.

2. Lots of two (2) acres in size and greater shall be limited to one per acre and no accessory building or structure shall exceed one thousand (1,000) square feet of floor area.

(E) Accessory buildings exceeding the number and square footage permitted in the R-1 and R-1A districts shall require a conditional use permit.

(F) No accessory structure or building except detached garages shall be located nearer the front lot line than the principal building or structure on that lot. This includes portable recreational structures such as trampolines and play sets.

(G) All accessory buildings on through lots located in R districts shall satisfy the principal structure front yard setback requirements.

(H) No cellar, basement, tent, trailer or accessory building shall at any time be used as an occupied dwelling.

(I) No accessory building or structure, unless an integral part of the principal building, shall be erected, altered or moved within five feet (5') of the principal building.

(J) Carports when added to the principal building shall comply with the setback requirements for the principal structure and when freestanding shall comply with the setbacks and size requirements for accessory buildings. Carports must be constructed of materials to match the principal building and may not be constructed of temporary materials such as canvas and/or plastic, etc.

(K) A zoning permit is required for the construction of an accessory building or structure less than one hundred twenty (120) square feet in floor area and more than fifty (50) square feet in floor area.

(L) For purposes of items (C) and (D) of this section, the following are considered accessory structures and accessory buildings: (Ord. 1196, 4-6-10)

Accessory Structures	Accessory Buildings
Gazebo	Detached garage
Sport Court	Pool house
Swimming pools	Shed
Trampoline	

10-7-5: **REQUIRED YARDS AND OPEN SPACE:**

(A) No yard or other open space shall be reduced in area or dimension so as to make such yard or other open space less than the minimum required by this title, and if the existing yard or other open space as existing is less than the minimum required, it shall not be further reduced.

(B) No required yard or other open space allocated to a building or dwelling group shall be used to satisfy yard, other open spaces, or minimum lot area requirements for any other building.

(C) The following shall not be considered to be encroachments on yard requirements:

1. Ornamental Features And Other Extensions: Chimneys, flues, belt courses, leaders, sills, pilasters, lintels, ornamental features, mechanical devices, cornices, eaves, gutters and the like, provided they do not extend more than two and one-half feet (2½') into the yard and off street parking as hereinafter required.

2. Yard Lights And Nameplates: Yard lights and nameplate signs for one and two family dwellings, lights for illuminating parking areas, loading areas or yards for safety and security purposes, provided the direct source of light is not visible from the public right of way or adjacent residential property may be located to within five feet (5') of the front lot line.

3. Fences: Front yard fences which do not exceed three and one-half feet (3½') in height or as required elsewhere in this title and terraces, steps, stoops and similar structures, which do not extend above the height of the ground floor level of the principal building and extend to a distance of less than two feet (2') from any lot line.

4. In Side or Rear Yards Only: Bays not to exceed a depth of two feet (2') nor to contain an area of more than twenty (20) square feet, fire escapes not to exceed a width of three feet (3'), fences and walls not to exceed a height of eight feet (8') above grade and open off-street parking. In no case shall a deck, balcony, uncovered porch or similar outdoor living space be located nearer than five feet (5') from a side or eight feet (8') from the rear line. Fences and walls in excess of eight feet (8') may be allowed by conditional use permit.

5. Rear Yard Only: Balconies, accessory structures except that no structure shall be closer than eight feet (8') from the rear lot line, breezeways, detached outdoor picnic shelters and recreational equipment, except as regulated hereinafter.

6. In Side Yards Only: Accessory structures except that no accessory structure shall be closer than five feet (5') from any side lot line.

(D) No accessory equipment such as air conditioning cooling structures or condensers which generate noise shall be located in a required side yard except for side yards abutting streets where equipment is fully screened from view except by conditional use permit.

(E) Through lots in any district shall have a required front yard on each street.

(F) In the B and I districts, where the average depth of at least two (2) existing front yards for buildings within one hundred fifty feet (150') of the lot in question are less or greater than the minimum front yard depth required for the district, required front yards shall not be less than the average depth of such existing front yards; however, the depth of a front yard shall not be less than twenty feet (20') nor be required to exceed fifty feet (50').

(G) In any R district, where the average depth of at least two (2) existing front yards for buildings within one hundred fifty feet (150') of the lot in question and within the same block front is less or greater than the minimum front yard depth required for the district, the required front yard

shall not be less than the average depth of such existing front yard; however, the depth of a front yard shall not be less than twenty feet (20') nor be required to exceed fifty feet (50').

(H) The maximum driveway and vehicle parking coverage between the front of a dwelling and the front lot line shall be thirty five percent (35%). This applies to any single or two family dwelling lots, regardless of the zoning district. The requirement is calculated on the area between the front of the dwelling and the front lot line, regardless of the dwelling's setback. In the situation of a corner lot, through or double fronted lot this applies to any yard area with the driveway access to the street. Lots located within a shoreland district shall also comply with Section 10-8-10 (C) (5) of this title.

(I) The required interior side yard for the principal structure on a single-family residential lot may be reduced by a residential conditional use permit for a garage stall addition, if the city council finds that the following standards have been met:

1. The reduction of the setback requirement is for the addition of a garage stall to an existing, single-stall attached garage of less than four hundred forty (440) square feet in floor area.

2. There are no other garage stalls or structures on the lot, and the garage stall addition will bring the existing single-stall garage into conformance with the minimum requirements of subsections 10-7-26(D)(11) and 10-12-1(D) of this title.

3. The side yard may be reduced as follows:

a. The interior side yard setback requirement may be reduced to a minimum of two feet (2') for a single-stall addition to an attached single-stall garage provided that the structure on the adjoining lot will be at least ten feet (10') from the addition, excluding any roof overhangs.

b. If the adjoining structure is also a single-stall garage, the setback requirement shall not be reduced to less than five feet (5') to allow for the future expansion of the adjacent, nonconforming garage.

c. In no case shall a roof overhang be closer than two feet (2') to the lot line.

4. The reduced side yard will not interfere with any drainage or utility easement. If the proposed reduction in setback requirements will encroach into an existing drainage or utility easement, the applicant must obtain a vacation of the easement.

5. The reduced side yard will work toward the preservation of trees or unique physical features of the lot or area, including steep slopes.

6. The reduced side yard will not obstruct traffic visibility or cause a public safety problem.

7. The single garage stall addition cannot reasonably be attached to another portion of the existing residence because of the floor plan of the residence.

8. The reduction of the setback requirement is based upon a specific need or circumstance which is unique to the property in question and which, if approved, will not set a precedent which is contrary to the intent of this subsection.

10-7-6: **TRAFFIC VISIBILITY:** No fences, structures, vending machine or planting shall be permitted to exceed thirty inches (30") in height within any front or side yard areas on a corner lot which may interfere with the visibility across the corner. A minimum sight triangle shall be established on each corner lot at every street intersection through which motorists shall have reasonable unobstructed view. The minimum sight triangle is a triangle located at the corner of intersecting streets. The adjacent sides shall be located along the curb line or along the gutter line of streets without curb and gutter, and shall be fifty feet (50') in length. The third side shall be a straight line joining the end points of the adjacent sides. The city may order removal of vision obstructions located within the minimum sight triangle.

10-7-7: **ESSENTIAL SERVICES:** Essential services shall be permitted as authorized and regulated by state law and the provisions of this title, it being the intention that such are exempt from the application of this title.

10-7-8: **FARMING OPERATIONS:**

(A) All farms currently in existence will be permitted to continue operation subject to the following conditions:

1. Agriculture, excepting commercial animal farms, fur farms, kennels and poultry farms, but including truck gardening and other horticultural uses, is a permitted use in the district in which an existing operation is located; provided that any new private stable or other new building in which farm animals are kept shall be a distance of one hundred feet (100') or more from any other lot in an R district.

2. Limited sales of products produced may be conducted on the premises from a roadside stand, but such stand shall not exceed twelve feet (12') in height of five hundred (500) square feet in floor area, and no portion of any such stand shall be located or erected nearer than fifty feet (50') to any public street.

(B) Farming is a conditional use of all land in all zoning districts which is not a farm on the effective date of this title.

10-7-9: **NOISE:** Noise shall be muffled or otherwise controlled so as not to become a nuisance. Noise levels shall be regulated by the standards of the Minnesota Pollution Control Agency.

10-7-10: **SMOKE AND PARTICULATE MATTER:** The ambient air quality standards of the Minnesota Pollution Control Agency shall apply to the release of airborne materials within the city.

10-7-11: **TOXIC OR NOXIOUS MATTER:** The Minnesota Pollution Control Agency standards governing toxic or noxious matter shall apply.

10-7-12: **ODORS AND AIR POLLUTION:** The Minnesota Pollution Control Agency standards shall apply.

10-7-13: **NUISANCES:** No land, existing building or proposed structure shall be used or occupied in any manner creating dangerous, noxious or otherwise objectionable conditions which could adversely affect the surrounding area.

10-7-14: **RADIATION AND ELECTRICAL EMISSIONS:** No activities shall be permitted that emit dangerous radioactivity beyond enclosed areas. There shall be no electrical disturbance (except from domestic household appliances) adversely affecting the operation at any point of any equipment including, but not limited to, radio and television reception other than that of the creator of the disturbance.

10-7-15: **VIBRATION:** Any use creating periodic earth-shaking vibrations, such as may be created from a drop forge shall be prohibited if such vibrations are perceptible beyond the lot line of the site on which the use is located. The standard shall not apply to vibrations created during the process of construction.

10-7-16: **GLARE OR HEAT:** Any use requiring an operation producing an intense heat or light transmission shall be performed with the necessary shielding to prevent such heat or light from being detectable at the lot line of the site on which the use is located. Lighting in all instances shall be diffused or directed away from R districts and public streets.

10-7-17: **EXPLOSIVES:** Any use requiring the storage, use or manufacturing of products which could decompose by detonation shall be located not less than four hundred feet (400') from any R district line provided that this section shall not apply to the storage or use of liquefied petroleum or natural gas for normal residential or business purposes.

10-7-18: **SCREENING AND BUFFERS:** Screening requirements of this title shall be satisfied through the use of buildings, berms, solid fences, walls, planting screens, evergreen trees, hedges or some combination thereof. If the topography, existing vegetation, permanent structure or other features create a barrier which meets the standards of this section, they may be substituted.

(A) **Screening Fence Or Wall:** A screening fence or wall shall be constructed of attractive, permanent finished materials, compatible with those used in the construction of the principal structure. Such screens shall be at least six feet (6') in height and provide a minimum opaqueness of one hundred percent (100%).

(B) **Planting Screens:** Planting screens shall fully irrigated, consist of healthy, hardy plants, at least six feet (6') in height and designed to provide a minimum year round opaqueness of eighty percent (80%) at the time of installation whenever screening or buffering is required.

(C) **Buffer Areas:** Buffer areas shall be provided wherever business and/or industrial uses are located adjacent to or across the street from residential uses. Buffer areas shall separate parking areas, driveways and structures from residential uses and contain the following:

1. A berm, fence, evergreen trees, hedge, or combination thereof of not less than eighty percent (80%) opaque and not less than six feet (6’) in height at the time of installation, except

adjacent to a street where a landscaped buffer not less than three feet (3') nor more than four feet (4') in height, shall be installed and maintained. All landscaped buffer areas shall be irrigated.

(D) **Headlight Screening:** In business and industrial districts, the light from automobile headlights and other on site sources shall be screened whenever it may be directed onto residential windows.

(E) **Maintenance:**

1. Screen fences and walls which are in disrepair shall be repaired.

2. Planting screens shall be maintained in a neat, healthful condition in accordance with section 10-30A-3(J) of this title. Plantings which have died shall be promptly replaced in accordance with a landscape and/or screening plan approved by the city for the site.

(F) **Compliance:**

1. All new development or full redevelopment of a site shall comply with the screening requirements of this section.

2. All redevelopment that results in disturbance of one half (1/2) acre or more or the addition of five thousand (5,000) square feet of impervious surface shall comply with the screening requirements of this section.

3. Existing uses shall comply with the screening requirements listed in this section within three (3) years of notice by the director of community development and with the maintenance requirements within three (3) weeks of receiving notice. Compliance by existing uses shall not be required if the city determines either that because of the unique character of the existing use compliance is not needed to promote the welfare of the city or that compliance is not reasonably possible because of the existing development.

4. The obligation to establish new screening shall be joint when businesses abut multi-family uses and districts.

10-7-19: **FENCES:** Fences shall be permitted in all yards subject to the following:

(A) **Permits:**

1. Building permits are required for fences that are taller than six (6) feet. (Ord. 1196, 4-6-10)

(B) **Locations:** Fences shall be located entirely upon the private property of the persons constructing the fence unless the owner of the property adjoining agrees, in writing, that such fence may be erected on the division line of the respective properties. The city may require the owner of property with an existing fence to establish the boundary line of his property by a survey.

(C) **Construction:** Fences shall be constructed in a workmanlike manner and of substantial material reasonably suited for its intended purpose.

(D) **Maintenance:** Every fence shall be maintained on both sides in a condition of good repair and shall not be allowed to become or remain in a condition of disrepair or danger, or constitute a nuisance, public or private. Any such fence which is, or has become dangerous to the city health or welfare, is a public nuisance, and the city may commence proper proceedings for the abatement thereof.

(E) **Electric Fences:** Electric fences shall not be permitted except for agricultural purposes and for the control of deer in residential gardens, provided that garden fencing shall comply with the following standards:

1. The fence shall be electrified using only a UL listed fence controller, or an equivalent approved by the city electrical inspector.

2. The fence may consist of multiple strands of electrified wire, but at least one (1) strand shall be installed at a height between thirty (30) and thirty six inches (36”) inches above the ground and marked with warning signs that are no less than eight (8) square inches in size and that are attached to the wire no less than ten feet (10’) apart.

3. The fence shall not be located in the front yard as defined in section 10-4-2 of this title.

4. The fence shall be located only around the perimeter of each garden or freestanding flower bed to be protected, up to the property line, and shall in no instance be used as perimeter fencing for the property.

5. The fence, including the wires, shall not exceed the height limitations of subsections (G)1 and (G)2 of this section.

(F) **Barbed Wire Fences:** Barbed wire fences shall only be permitted on farms or for special security requirements by conditional use permit.

(G) **Residential Fencing and Screening:**

1. Except as provided herein, fences outside the buildable area of a lot may not exceed six feet (6') in height.

2. Except as provided herein, fences within the buildable area of a lot or in the case of the rear lot line at least ten feet (10') from the rear lot line, may not exceed eight feet (8') in height.

3. Fences extending across front yards shall not exceed three and one-half feet (3½') in height and shall be at least seventy-five percent (75%) open space for passage of air and light.

(H) **Swimming Pool Protection**: Pool barrier and screening requirements shall comply with title 4, chapter 6 of this code.

(I) **Business and Industrial Fencing:**

1. Business and industrial fences may be erected up to eight feet (8') in height. Fences in excess of eight feet (8') shall require a conditional use permit.
2. Business and industrial fences with barbed wire security arms a minimum of six feet (6') in height (measured without the security arm) may be allowed by conditional use permit. The security arm shall be angled in such a manner that it extends only over the property of the permit holder and does not endanger the public. Such security fencing shall not be located along a property line abutting a residential use.

(J) **Special Purpose Fences:** Fences for special purpose and fences differing in construction, height or length may be permitted in any district by conditional use permit. Findings shall be made that the fence is necessary to protect, buffer or improve the premises.

10-7-20: **MAINTENANCE:** All structures, and property shall be maintained in a manner compatible with adjacent properties, consistent with the goals and objectives of the comprehensive plan and as required by this code. All property owners shall be responsible for keeping their land free of waste material, all noxious weeds, grasses exceeding the height limits specified in section 7-1-11, nuisances as specified in the city code or other laws, and other problems potentially detrimental to the general health, safety and welfare. This obligation of property owners shall include their land that is subject to public easements, including road right of ways.

10-7-21: **EXTERIOR STORAGE:** In all districts exterior storage is prohibited except as permitted by the underlying zoning district.

(A) Exterior storage areas shall be one hundred percent (100%) screened from ground level view around the perimeter of the storage area. Screening shall be consistent with section 10-7-18 of this title.

10-7-22: **WASTE MATERIAL:** Waste material shall not be washed or dumped into the public storm sewer system or the sanitary sewer system without a permit from the city. If the permit is not granted, a method of disposal shall be devised which shall not require continuous land acquisition for permanent operation and will not cause a detrimental effect to the adjacent land. Should the waste be of a solid form rather than fluid, the storage area shall be so located and fenced as to be removed from public view. In all districts, all waste material, debris, refuse, garbage materials not currently in use for construction or otherwise regulated herein shall be kept in an enclosed building or properly screened according to the special minimum requirements of the zoning district.

10-7-23: **DRAINAGE:** No land shall be developed and no use shall be permitted that results in water runoff causing flooding or erosion on adjacent properties. Runoff shall be properly channeled into a storm drain, watercourse, ponding area or other suitable facility.

10-7-24: **TRAFFIC CONTROL:**

(A) Traffic generated by any use shall be channelized and controlled in a manner that will avoid congestion on public streets, safety hazards or excessive traffic through residential areas.

(B) Traffic into and out of all business and industrial uses or areas shall be forward moving with no backing onto streets or pedestrian ways.

(C) No access drive to any lot shall be located within twenty feet (20’) of any two (2) intersecting street right of way lines.

(D) A traffic study shall be provided required under any of the following conditions as directed by the by the city engineer.

1. A development proposal that generates traffic beyond the existing traffic level and results in more than one hundred (100) trips in any peak hour and is within one-half (1/2) mile of a roadway or intersection with a Level of Service E or F as determined by the city engineer.

2. A development proposal that generates two hundred fifty (250) trips in the peak hour and/or twenty five hundred (2,500) trips daily.

3. The city engineer determines a traffic study is necessary to identify potential traffic conflicts or safety impacts.

10-7-25: EMERGENCY VEHICLE ACCESS:

(A) **Purpose:** The purpose of this section is to facilitate the rapid and effective extinguishment of fires and the provision of emergency services by insuring that all premises that the fire department and other emergency public rescue and other safety departments are called upon to protect will be readily accessible for effective emergency service operations.

(B) Every use permitted by this title shall provide access for fire vehicles and emergency apparatus from a public street, except structures with less than three (3) dwellings. Emergency access shall be provided as required by the Burnsville Uniform Fire Code and regulations adopted by the city.

(C) **Fire Lane Standards:** A fire lane shall comply with the following standards:

1. The fire lane shall provide clear, unobstructed access for vehicles and apparatus at all times.

2. Signs prohibiting parking or standing of motor vehicles shall be required.

3. Fire lanes shall be at least twenty feet (20') in width. The fire chief shall have the authority to require additional width in order to insure adequate fire or rescue operation.

(D) **Alternatives To Fire Access Roadways and Fire Lanes:** The requirements for fire access roadways and fire lanes may be modified when an approved fire protection system or systems, as defined by the Burnsville Uniform Fire Code, are installed if, in the opinion of the fire chief, fire fighting and rescue operations are not impaired.

10-7-26: GENERAL PARKING AND ACCESS REQUIREMENTS:

(A) **Purpose:** Regulation of off street parking is to alleviate congestion of the public streets and to promote the safety and general welfare of the public by establishing minimum requirements for off street parking and the loading and unloading of vehicles and/or containers in accordance with the use of various parcels of land and structures. (Ord. 1196, 4-6-10)

(B) **Compliance:**

1. Permits Prior to Effective Date: Structures or uses for which a building permit has been issued prior to August 19, 2008 (the effective date of this section) shall be exempt from the parking requirements in this section if the structure is completed within six (6) months after the effective date of this section.

2. All new development, full redevelopment, and all redevelopment that results in disturbance of one half (1/2) acre or more or the addition of five thousand (5,000) square feet of impervious surface shall comply with the requirements of this section.

3. Change in Use: A change in use or occupancy shall require adequate parking for the new use. If the new use calls for less parking, the extra parking stalls may be removed by the owner. If the new use calls for additional parking, it shall be provided.

(C) **Application of Off-Street Parking Regulations:** The regulations and requirements set forth in this section shall apply to off street parking facilities in all zoning districts.

(D) **Site Plan Drawing:** All applications for a building or occupancy permit, shall be accompanied by a site plan drawn to scale showing dimensions, indicating the location and number of off-street parking and loading spaces, the location of snow storage areas, green space calculations and building occupancy on which the parking has been calculated.

(E) **General Provisions:**

1. **Calculating Parking Space:**

a. When the calculation of the number of required off street parking spaces results in a fraction, each fraction of one-half (1/2) or more shall constitute another space.

b. When computing total number of parking spaces required for a use, individual activities within the use will be calculated separately and added together to arrive at the total required parking spaces for each specific use proposed.

c. Places of Public Assembly. In stadiums, churches and other places of public assembly in which patrons or spectators occupy benches, pews or other similar seating facilities, each twenty two inches (22") of such seating facility shall be counted as one seat for the purpose of determining required parking.

2. **Maintenance:** All parking areas and driveways shall be maintained in a safe and proper manner. The owner shall not allow weeds to grow or surface materials to become deteriorated. (Ord. 1196, 4-6-10)

3. **Alternative Parking CUP:** The city recognizes reuse of sites and that the strict interpretation of the parking standards of this section may not be appropriate for each specific use or lot. Therefore, the city council may approve alternative parking standards through the conditional use permit process provided the applicant can demonstrate, based upon documented parking studies and site specific analysis that a need exists to provide more or fewer parking stalls than the maximum or minimum parking standards or to deviate from pervious paving/paver system standards. Factors to be considered in such determination include (without limitation), national parking standards, parking standards for similar businesses or land uses, size of building, type of use, number of employees, expected volume and turnover of customer traffic and expected frequency and number of delivery or service vehicles and appropriate soils and/or site conditions to support pervious paving/paver systems.

(F) **Design Standards:**

1. Access to parking areas shall provide an adequate means of access to a public street via a driveway. The driveway access shall not exceed twenty-four feet (24') in width at the public street right of way line and shall be so located so as to cause the least interference with traffic movement. In the event of a median divided driveway or service entrance for large trucks, the width may exceed /twenty four feet (24’) if the design and location is approved by the city engineer. All public parking areas shall have access off of private driveways and not directly off

a public street. All driveway access points onto public rights of way shall be allowed only by approval from the appropriate governmental regulating body in accordance with the current standards for driveway locations based upon street classification.

a. Driveways and Private Roadways: Minimum widths are as follows:

1) Two-way traffic: Twenty four feet (24').

2) One-way traffic and fire lanes: Twenty feet (20'). (Ord. 1196, 4-6-10)

3) Drive-up window lanes not necessary for fire truck access: Fourteen feet (14').

4) Private roadways in townhouse developments: Twenty four feet (24') with no parking and thirty feet (30') with guest parking on one side.

5) Private driveways in townhouse developments: Sixteen feet (16') at the public or private roadway connection.

b. Parking Spaces: All surface parking spaces shall be served adequately by parking lot drive aisles. The standards for parking lot drive aisle width in the following table do not apply to required fire lanes. (Ord. 1196, 4-6-10)

Angle	Stall Dimensions	Parking Lot Drive Aisle Width
90 degrees	9 x 18	24 feet (two-way traffic)
60 degrees	9 x 18	18 feet (one-way traffic)
45 degrees	9 x 18	14 feet (one-way traffic)
Parallel	11 x 20	24 feet (two-way traffic)
		20 feet (one-way traffic)
Stacking	14 x 18	14 feet
Residential garage	11 x 20	

2. **Parking Area Landscaping and Green Space:** To break up the appearance of large impervious areas, all parking lots in business and industrial zoning districts shall be subject to the following design and landscape standards:

a. Landscaped parking lot islands shall be required at the beginning and end of each parking row to break up longer rows.

b. Medians shall have a landscaped area at least nine feet (9') in width.

c. Parking spaces and rows shall be organized to provide consolidated landscaped areas and opportunity for on-site stormwater management.

d. The amount of internal parking lot green space shall comply with the requirements of chapter 10-30A for the underlying zoning district where the parking area is located. The total area calculated for landscaping within the parking lot is calculated as part of the overall greenspace requirement for the site.

3. **Pedestrian Circulation:** All parking lot designs shall be well planned to minimize conflicts between vehicular and pedestrian traffic.

a. Parking areas shall include a direct and continuous pedestrian walkway network within and adjacent to parking lots to connect building entrances, parking courts, public sidewalks, transit stops, and other pedestrian destinations.

b. All pedestrian walkways within a parking lot shall include a clear division from vehicular circulation areas and be delineated by a change in grade, landscaping and/or a change in surface materials. Pavement markings alone shall not satisfy this requirement.

c. Trees shall be provided on at least one side of pedestrian walkways.

d. Where pedestrian walkways cross access driveways and other major drive aisles, crossings shall be clearly marked and sight distance for both pedestrians and vehicles shall be unobstructed.

e. For projects that propose head-in parking stalls to abut a sidewalk, the minimum sidewalk width shall be six feet (6') and pervious paving/paver systems shall be installed unless it is determined by the city engineer that the site is not suitable for said systems due to soil or other site specific conditions that will not allow for the proper function and/or maintenance of the pervious paving/pavers.

f. Parking stalls shall not be located where they obstruct doorways, driveways, or pedestrian walkways.

g. All handicap stalls shall be located in close proximity to entrance areas and shall not be hindered by inappropriately located curb cuts, catch basins, or other improvements.

4. **Parking Area Requirements:**

a. Parking areas greater than fifty thousand (50,000) square feet shall be divided both visually and functionally into smaller parking courts.

b. On site snow storage areas shall be identified on all development plans and said area shall not be located within required parking stalls or areas that will destroy required landscaping.

c. Rainwater and snowmelt shall be managed consistent with city storm water management requirements.

5. **Surfacing:** The entire parking area including parking stalls, aisles and driveways shall be surfaced with concrete, bituminous, pavers, or pervious paving/paver systems provided appropriate soils and site conditions exist for the pervious systems to function. The city engineer shall make the final determination if soils are conducive for use of pervious paving/paver systems. The use of pervious paving/paver systems is encouraged for pedestrian walkways, overflow parking areas, snow storage areas, within raised medians and islands, emergency vehicle lanes and other low traffic areas. Pervious paving/paver systems shall be required for all parking spaces that exceed the minimum parking standards of this section unless it can be documented that soils or conditions exist that will impede the function of the pervious system. The owner shall provide soils information to demonstrate to the satisfaction of the city engineer that appropriate conditions exist for the pervious paving/paver systems to function and the owner shall enter into a maintenance agreement to ensure ongoing maintenance and operation of all pervious paving/paver systems. This requirement also applies to open sales lots, open rental lots, and

outdoor storage or display areas. Other materials such as decorative rock, gravel, sand, or bare soil are prohibited.

6. **Signs and Pavement Marking:** Signs located in any parking area necessary for orderly operation of traffic movement are allowed when consistent with chapter 30 of this title.

a. All parking spaces shall be clearly marked with white paint on the pavement except upon approval of the community development director.

b. Handicap parking must comply with current state requirements. All markings shall be consistent with the Minnesota Manual on Uniform Traffic Control Devices.

7. **Curbing:** All open off-street parking areas in business and industrial districts shall have a six inch (6") nonsurmountable concrete curb around the perimeter of the parking area and driveways.

a. As part of a conditional use permit or planned unit development application for an open sales lot a reduced curb height may be requested. The design shall not be less than a four inch (4”) nonsurmountable concrete curb and must be approved by the city engineer.

b. In R-3 districts, the boundaries of all parking areas shall have a six inch (6”) nonsurmountable concrete curb. Private roadways may have surmountable curbs. Driveways to individual garages from the roadway in townhouse developments do not require curbing.

8. **Lighting:** Any lighting in an off street parking area shall be shaded or diffused so as to reflect the light away from adjoining property and adjacent traffic areas. All light fixtures must be a downcast style unless specifically approved by the community development director.

9. **Use of Parking Area:**

a. Required off street parking space in all districts shall not be used for open storage, or sale of goods, or for the storage of vehicles which are inoperable, for lease, rent or sale or the stockpiling of snow, debris, or materials.

b. Off street parking in R-1, R-1A, R-2 and R-3 districts shall be limited to the following:

1) The use of persons residing on the premises and their visitors.

2) The number of passenger vehicles may not exceed the number that can be garaged and parked off street on driveways.

3) One commercially licensed vehicle of twenty two feet (22') or less in length shall be allowed if used by the resident for transportation to their job on a daily basis.

4) The parking and storage of recreational vehicles as regulated by the standards under title 6, chapter 10 of the city code.

5) Parking not in compliance with standards 1) through 4) above may be allowed only by conditional use permit. Under no circumstances shall parking facilities accessory to residential structures be used for open air storage of commercial vehicles.

c. Parking and Storage of Certain Vehicles: Automotive vehicles or trailers of any kind or type without current license plates shall not be parked or stored on any residentially zoned property other than in completely enclosed buildings.

10. **Screening:** Any off street parking area containing more than six (6) parking spaces, any part of which is within thirty feet (30') of an adjoining residential zone and any driveway to a parking area containing at least six (6) spaces within fifteen feet (15') of an adjoining residential zone shall be screened according to section 10-7-18 of this title.

(G) **Number of Spaces Required:**

1. **Parking shall be provided according to the following schedule:**

Single-Family and Two-Family Dwelling Units: Two (2) enclosed garage spaces per dwelling unit with a minimum of 220 square feet per space required.

Townhouse Dwelling Units: Two (2) enclosed garage spaces and two (2) driveway spaces per unit. The minimum garage space size is two hundred twenty (220) square feet.

Apartment Dwelling Units: One and one-half (1.5) parking spaces for each efficiency and one bedroom unit and two and one-fourth (2.25) parking spaces for units with two (2) or more bedrooms. A minimum of one of the required parking spaces per unit shall be an enclosed garage space. A land area requirement credit of three hundred (300) square feet toward the satisfaction of lot area requirements shall be given for each garage space under the principal building, i.e. in R-3B requirement is one thousand seven hundred (1,700) square feet per unit vs. two thousand (2,000) square feet per unit.

Guest Parking: One-half (0.5) space per townhouse or apartment unit, distributed throughout the development, in addition to the required parking per unit.

2. **Special Residential:**

Assisted Living Facility: One-half (1/2) space per unit.

Day Care Nursery: One space per teacher/employee on the largest work shift, plus one off-street loading space per six (6) students.

Group Dwellings: One space per sleeping room or for every four (4) beds.

Monasteries, Convents: One space per six (6) residents, plus one space per employee on the largest work shift, plus one space per five (5) chapel seats if the public may attend services.

Nursing Homes: One space per six (6) patient beds, plus one space per employee on the largest work shift.

Nursing Home Other than Assisted Living Facility: One space per six (6) patient beds, plus one space per employee on the largest work shift.

Retirement Housing: For apartment dwelling units, one space per unit with a minimum of half of the required spaces as enclosed garage spaces. The development shall include a proof-of-parking area sufficient to meet the parking requirements for apartment buildings in subsection 10-7-26(G)(1) of this section, unless the city council determines that the development is not likely to be converted to non-age restricted housing in the foreseeable future. Townhouse dwelling units shall comply with the requirements of 10-7-26(G) of this section.

3. **Commercial:**

a. **General Standards:**

Except as specifically designated below: one space per one hundred fifty (150) square feet of floor area of customer sales and service, plus one space per two hundred (200) square feet of storage and/or office floor area, or, if the use has more than one hundred thousand (100,000) square feet of floor area, five and one-half (5.5) spaces per one thousand (1,000) square feet of floor area.

b. **Other Commercial Uses:**

Banks: One space per two hundred (200) square feet of floor area, plus six (6) off street stacking spaces per drive-through lane.

Beauty and Barber Shops: Three (3) spaces per operator or one space per one hundred (100) square feet of floor area, whichever is greater, plus one space per employee on the largest work shift.

Car Wash: Four (4) off street stacking spaces per drive-through car wash. The bay inside the car wash shall not be considered a stacking space.

Convenience Grocery: (With or without gasoline sales) One space per one hundred (100) square feet of floor area. Spaces at pump island may count towards total parking requirement.

Fleet Parking: One space per company vehicle shall be provided in addition to the total parking requirement.

Funeral Homes: One space per four (4) visitor seats.

Furniture and Appliance Store: One parking space for each five hundred (500) square feet of floor area in the principal structure, plus one space per employee on the largest work shift.

Gas Station (No convenience grocery): One space per pump plus one (1) space per employee. With service garage; include three (3) additional spaces per service bay. Parking areas at the pump islands may be counted as parking spaces.

Grocery or Supermarket: One space per one hundred (100) square feet of floor area of customer sales and service, plus one space per two hundred (200) square feet of floor area of storage.

Hotel or Motel: One space per room or suite, plus one space per employee on the largest work shift, plus one space per three (3) persons to the maximum occupancy load of each public meeting and/or banquet room, plus fifty percent (50%) of the spaces otherwise required for accessory uses (e.g., restaurants and bars).

Mini-Storage: Two (2) parking spaces per dwelling unit or employee area plus one (1) space per six thousand (6,000) square feet of indoor storage area.

Outdoor Storage and/or Display of Retail Merchandise: One space per two thousand (2,000) square feet of outdoor storage or display area in addition to the total parking required on the site for the individual use.

Private Clubs: One space per three (3) persons to the maximum capacity of the facility plus one per employee on the largest work shift.

Repair Services: One space per three hundred (300) square feet of floor area, plus one space per employee on the largest work shift.

Restaurant, Accessory: For restaurants that are proposed to be located within an existing shopping center, office or other multiple occupancy building, one-half (1/2) space per the number of patrons at maximum occupancy load of the restaurant, plus one (1) space per one hundred (100) square feet of floor area or one space per three (3) patron seats, whichever is greater, plus one space per employee on the largest work shift.

Restaurant, Fast Food: One space per fifty (50) square feet of floor area, plus one space per employee on the largest work shift, plus six (6) off street stacking spaces per drive-through lane.
Restaurant, Standard: One space per three (3) patron seats or one space per one hundred (100) square feet of floor area whichever is greater, plus one space per employee on the largest work shift.

Shopping Centers (1 - 49,999) Square Feet: Minimum of five and one-half (5.5) spaces with a maximum of six (6) spaces per one thousand (1,000) square feet plus 1 space per two hundred (200) square feet of office and storage areas.

Shopping Center, (50,000 - 100,000) Square Feet: Minimum of four (4) spaces with a maximum of four and one-half (4.5) spaces per one thousand (1,000) square feet of floor area.

Shopping Center, (100,001 and larger) Square Feet: Minimum of four and one-half (4.5) spaces, with a maximum of five (5) spaces per one thousand (1,000) square feet of floor area.

Taverns, Dance Halls, Night Clubs and Lounges: One space per fifty (50) square feet of floor area, plus one space per employee on the largest work shift.

Vehicle Repair and Maintenance Services: One space per eight hundred (800) square feet of floor area, plus one space per employee on the largest work shift.

4. **Office:**

a. **General Standard:**

Office Buildings and Professional Offices Having Less than Six Thousand (6,000) Square Feet of Floor Area: Minimum of five (5) spaces, with a maximum of five and one half (5.5) spaces per one thousand (1,000) square feet of floor area.

Office Buildings and Professional Offices Having Six Thousand (6,000) Square Feet or more of Floor Area: Minimum of three and one half (3.5) spaces, with a maximum of four (4) spaces per one thousand (1,000) square feet of floor area.

b. **Other Office Uses:**

Medical Offices: Five (5) spaces per doctor, plus one space per employee on the largest work shift.

Veterinary Office With Enclosed Kennels and/or Pens: Three (3) spaces per doctor, plus one space per employee on the largest work shift.

5. **Industrial:**

a. **General Standard:**

Minimum of one space per employee on the largest work shift plus one space per company vehicle regularly stored on premises, plus additional spaces that may be required depending upon the specific use.

b. **Other Industrial Uses:**

Fleet Parking: One space per company vehicle will be provided in addition to the total parking requirement.

Manufacturing Use Standard: At least four (4) off street parking spaces, plus one additional space per each eight hundred (800) square feet of floor area. One additional off-street parking space shall be provided for each two thousand five hundred (2,500) square feet or fraction thereof of land devoted to outside storage.

Recycling Centers: One space per ten thousand (10,000) square feet of land area, plus one space per employee on the largest work shift.

Truck Terminals: One space per employee on the largest work shift, plus one space per truck normally parked on the premises, plus one space per three (3) patrons to the maximum capacity.

Warehouse over fifteen thousand (15,000) square feet of floor area, storage handling of bulk goods: one space per two thousand (2,000) square feet of floor area.

Warehouse under fifteen thousand (15,000) square feet, one space for each five hundred (500) square feet of floor area.

6. **Institutional:**

a. **General Standard:** One space per three (3) patrons at the maximum occupancy load, plus one space per employee on the largest work shift, plus one space per fleet vehicle.

b. **Other Institutional Uses:**

Camps, Day or Youth: One space per employee on the largest work shift, plus one space per camp vehicle normally parked on the premises.

Cemetery: One space per employee.

Church/Temple/Chapel: One space per three (3) seats of maximum capacity.

Community and Recreation Center: One space per two hundred fifty (250) square feet of floor area, or one space per four (4) patrons at the maximum occupancy load, whichever is greater, plus one space per employee on the largest work shift.

Hospital: Two (2) spaces per three (3) patient beds, plus one space per employee on the largest work shift.

Libraries and Museums: One space per two hundred fifty (250) square feet of floor area or one space per four (4) seats at the maximum occupancy load, whichever is greater, plus one space per employee on the largest work shift.
Schools:

1) **Elementary and Junior High:** One space per staff member on the largest shift, plus one space per two (2) classrooms.

2) **Senior High:** One space per staff member on the largest shift, plus one space per five (5) students.

3) **College or Trade School:** One space per staff member on the largest shift, plus one space per two (2) students of the largest class attendance period.

7. **Recreational:**

a. **General Standards:** One space per four (4) expected patrons at the maximum occupancy load.

b. **Other Recreational Uses:**

Bowling Alley: Five (5) spaces per lane, plus one space per employee on the largest work shift.

Golf Courses: Five (5) spaces per green, plus one space per employee on the largest shift, plus fifty percent (50%) of the spaces otherwise required for any accessory uses (e.g., bars, restaurants).

Golf Driving Range: One space per tee, plus one space per employee on the largest work shift.

Health Clubs and Athletic Facilities: One-half (½) space per the number of patrons at maximum occupancy load of the indoor areas, plus one space per five hundred (500) square feet of designated outdoor activity space, plus one space per employee on the largest work shift.

Marina: Two (2) spaces per boat slip, plus one space per employee. Marinas with launch ramps shall require additional parking consistent with city and DNR approvals which depend upon the size of the facility allowed.

Miniature Golf: One and one-half (1.5) spaces per hole, plus one space per employee on the largest work shift.

Pool Hall and Arcades: One space per four (4) patrons at the maximum occupancy load of the facility, plus one space per employee on the largest work shift, plus one space per one hundred (100) square feet of kitchen, dining, or snack bar area.

Skating Rink, Ice or Roller: One space per three hundred (300) square feet of floor area, plus one space per employee on the largest work shift.

Sports Performance Training Center: One space per two hundred fifty (250) square feet of activity area or one space per four (4) patrons at the maximum occupancy load, whichever is greater, plus one space per employee on the maximum work shift.

Swimming Facility: One space per seventy five (75) square feet of water area, plus one space per employee on the largest shift.

Tennis, Racquetball, Handball Courts: Four (4) spaces per court, plus one space per employee on the largest work shift.

Theater: One space per four (4) patrons at the maximum occupancy load of the facility inclusive of both indoor and outdoor capacity, plus one space per employee on the largest work shift.

(H) **Joint Parking Facilities:** Required parking facilities serving two (2) or more uses may be located on the same lot or in the same structure except in R-1 Districts provided that the total number of parking spaces furnished shall be not less than the sum total of the separate requirements for each use during any peak hour parking period when the parking facility is used at the same time by two (2) or more uses. The Development Review Committee (DRC) may approve a reduction to the number of parking spaces required for joint use facilities provided the applicant can demonstrate through site specific analysis and/or documented parking studies that less parking demand will be generated. Conditions required for joint use are:

1. The proposed joint parking space is within four hundred feet (400') of the use it will serve.

2. The applicant shall show that there is not substantial conflict in the principal operating hours of the two (2) or more buildings or uses for which joint use of off street parking facilities is proposed.

3. A properly drawn legal instrument executed by the parties concerned for joint use of off street parking facilities shall be filed as a deed restriction on both properties in the recorder's office of Dakota County.

(I) **Off-Premise Street Parking Facilities:** Off-premises street parking facilities, as a principal use of the property, are allowed in B-3 and B-4 districts or by PUD.

When an off premise parking lot is used in conjunction with the required parking and/or a principal use, the city shall require the owner to maintain the required number of off street parking spaces during the existence of said principal use. No such parking facilities at its closest point shall be located more than one hundred feet (100') from the site of the principal use nor more than four hundred feet (400') from the principal building on the site. Setbacks for off premise parking lots shall be consistent with setbacks for parking in that district and the total amount of landscaped green area shall also comply with green space area percentages in that district as well.

(J) **Proof of Parking:** In order to accomplish the comprehensive plan's goal of reducing the construction of unnecessary impervious surfacing, developed to service institutional, business and industrial uses, the city may allow reductions in the number of required parking spaces to be installed under one or more of the following circumstances:

1. The facility is well served by mass transit and/or has an organized car-pool or van-pool program; or

2. The unique characteristics of the proposed use are such that it will generate a need for less parking than the ordinance standard.

All requests for reductions in the amount of required parking to be installed shall be accompanied by a plan showing where the total required parking spaces can be added on the lot, if necessary, up to the total amount required by the ordinance, without requiring a variance.

(K) **Parking Ramps:** Parking ramps are permitted uses in B-3 and B-4 commercial zoning districts and in all industrial zoning districts. Parking ramps shall comply with the setback requirements for principal structures. Structure design and exterior facade building materials shall be compatible with the surrounding buildings. The city encourages parking ramps in order to reduce large spans of surface parking, to provide additional landscaped areas, and to promote efficient and maximum use of the property.

1. Parking ramps or enclosed parking lots shall be periodically inspected and maintained by the owner so as to ensure structural integrity and public safety.

2. Lighting of the interior of the ramp or structure shall meet the standards contained in "Horizontal Luminances’ for parking facilities as adopted by the "Illuminating Engineering

Society Handbook of North America," 1987 edition. All exterior lighting shall comply with previously established city requirements.

3. All ramps and enclosed parking lots shall be in compliance with the Minnesota State Fire Code and Building Code regulations. Fire suppression equipment shall include a phone or push-button or sound-activated alarm on each floor of the parking facility. Such equipment shall be strategically located, visibly marked and be handicapped accessible.

4. All facilities shall be maintained in a clean and sanitary manner, including the removal of all hazardous and nonhazardous obstacles, so as to avoid the appearance of clutter.

5. Proper maintenance is essential to security. Therefore, management shall be responsible for checking for abandoned vehicles, or the storage of items such as off-season equipment, construction materials, crates or other materials, and the removal of these materials.

10-7-27: **OFF STREET LOADING:** Any of the following uses with a gross floor area of six thousand (6,000) square feet or more which requires deliveries or shipments must provide off street loading facilities in accordance with the requirements specified below unless a conditional use permit is granted:

(A) Every retail establishment, industrial or manufacturing use, warehouse, wholesale use, freight terminal, railroad yard, hospital or sanitarium having a gross floor area of six thousand (6,000) square feet or more shall provide off-street loading facilities as follows:

Gross Floor Area In Square Feet	Number of Berths
6,000 - 24,999	1
25,000 - 74,999	2
75,000 - 150,000	3

For each additional one hundred thousand (100,000) square feet (or fraction thereof) of gross floor area, one additional space shall be provided.

(B) Every public assembly use, such as auditoriums, convention halls, exhibitions halls, stadiums or sports arenas, with a gross floor area of greater than one hundred thousand (100,000) square feet shall provide a minimum of one off street loading space.

(C) Welfare institutions, funeral homes, restaurants and hotels with a gross floor area of greater than thirty thousand (30,000) square feet and offices with a gross floor area of one hundred thousand (100,000) square feet or more shall provide a minimum of one off street loading space.

(D) Off-street loading space shall be at least ten feet by twenty five feet (10' x 25'), excluding area for maneuvering vehicles.

(E) At no time shall any part of a truck or van be allowed to extend into the right of way of a public street while the truck or van is being loaded or unloaded.

(F) Whenever loading and service areas are adjacent to or across the street from residential uses, interior parking lot circulation shall be arranged in such a way as to route service vehicle traffic away from residential uses.

(G) All loading and service areas shall meet screening requirements of section 10-7-18 of this title.

10-7-28: **EARTH SHELTERED BUILDINGS:** The city recognizes the need to encourage the use of energy efficient development alternatives. In order to insure compatibility with adjoining conventional development, additional review shall be required as follows:

(A) Single-family and two-family residential units having required living area below grade shall provide signatures indicating awareness from abutting or affected landowners and shall be reviewed by the planning commission prior to the issuance of a building permit.

(B) Multiple family and commercial/industrial development projects will be subject to receiving a conditional use permit prior to issuance of a building permit.

10-7-29 **SOLAR ENERGY SYSTEMS:**

(A) In all residential districts, solar energy collection devices and similar equipment shall conform to the same yard area requirements as the principal structure.

(B) In all B and I districts, nonpassive solar energy collection devices and similar equipment or structures shall be screened on all sides so as not to be visible from public streets or adjoining property, or shall be designed to be compatible with architectural treatment of the principal structure. Such screening shall be designed and constructed of a material that is compatible with the principal building.

10-7-30: **ELECTRICAL CUSTOMER GENERATION AND COGENERATION SYSTEMS:**

(A) Wind-powered generators utilizing towers shall be sited so that the tower is located a distance equal to its height from the nearest property line.

(B) Noise incidental to wind generators and similar equipment shall meet Minnesota Pollution Control Agency Standards.

(C) Prior to the issuance of a building permit for a customer generation system or a cogeneration system, the applicant shall provide proof of liability insurance coverage and a letter from the utility company providing service stating that the system plan has been reviewed and approved for construction and contained the proper safety features so as not to create a hazard.

10-7-31: **ANIMALS:**

(A) General: Except as otherwise provided for in this title, all animals shall be allowed as permitted uses in any zoning district provided they do not constitute a nuisance and comply with all other City and State ordinances, laws and regulations.

(B) Care of Animals: Animals kept within any zoning district shall be subject to the following minimum requirements:

1. The size, number, species, facilities for and location of animals kept shall be maintained so as not to constitute a danger or nuisance by means of odor, noise or other nuisance characteristics.

2. Animals kept in pet shops or kennels shall be kept in accordance with regulations for such facilities in addition to the regulations provided by this title.

10-7-32: **MANUFACTURED HOUSING:** (Rep. by Ord. 328, 9-19-88)

10-7-33: **HEIGHT LIMITATIONS:** Height limitations set forth elsewhere in this title may be increased fifty percent (50%) when applied to the following structures:

Belfries.

Chimneys.

Church spires.

Cooling towers.

Cupolas and domes which do not contain usable space.

Elevator penthouses.

Fire and hose towers.

Flag poles.

Monuments.

Observation towers.

Parapet walls extending not more than three feet (3') above the limiting height of the building. (Ord. 1196, 4-6-10)

Smokestacks.

Water towers.

Wind powered generators.

Height in excess of those allowed under this section and other sections shall be by conditional use permit.

On any buildable lot situated downhill from the curb line elevation of the adjacent street, the average curb line elevation shall be used in the application of the height limitation provisions of this title.

10-7-34: **RELOCATED STRUCTURES:** No structure shall be moved onto a lot or parcel without a permit. The director of community development shall issue a permit upon finding that the structure and proposed location complies with all current zoning, subdivision and building code requirements.

10-7-35: **DEMOLITION OF STRUCTURES:** Demolition of structures shall not be permitted without a permit. The director of community development shall issue a permit upon finding that:

(A) The demolition will be done in a safe manner.

(B) The debris will be disposed of properly.

10-7-36: **EXTERIOR LIGHTING:**

(A) All exterior lighting shall be designed and arranged so as to not direct any illumination upon or into any contiguous residential districts.

(B) No exterior lighting shall be arranged and designed so as to create direct viewing angles of the illumination source by pedestrian or vehicular traffic in public right of way.

(C) Lenses, deflectors, shields, louvers and prismatic control devices shall be used so as to eliminate nuisance and hazardous lighting.

(D) Reflected glare from exterior lighting or from high temperature processes such as combustion of welding shall not be directed into any adjoining property. Reflected glare or spill light from all exterior lighting shall not exceed five-tenths (0.5) foot-candle measured on the property line when adjoining residential zones and one foot-candle measured on the property line when such line adjoins a similar zone and land use. Lighting fixtures for new and renovated outdoor sports and recreational facilities that adjoin residential uses shall be designed to eliminate reflected glare and spill light from the bottom one-third (1/3) of the reflector, and to shield the view of the arc tube from the residential property.

(E) Pole lighting shall be downcast and shielded on all faces. Wall pack lighting shall be downcast and shielded on all faces.

(F) Headlights shall be screened as required in section 10-7-18 of this title.

10-7-37: **PUBLIC RIGHT OF WAY:** No privately owned structure, sign or vending machine may be located on a public right of way with the exception of:

(A) Newspaper vending machines which are allowed if they comply with any other applicable ordinance, law or regulation, and as long as they are not located within the minimum sight triangle described in section 10-7-6 of this title. They shall be secured to prevent them from being moved. They may not, however, be secured to trees, public signs, telephone poles or fire hydrants.

(B) Bus benches, shelters and transit facilities provided they comply with title 8 of this code.

10-7-38: **LP GAS EXCHANGE CONTAINER DISPLAYS:**

(A) **Permit required:** No person shall display LP gas exchanges without first having received a permit as provided in this section.

(B) **Permit Application:** The application for a permit issued under this section shall include a site plan which adequately shows the location and relationship to structures, driveways, sidewalks, gas pumps and other display items.

(C) **Permit Fee:** The permit fee shall be $25.00. The permit fee shall be paid in full before the application is accepted. The permit fee is nonrefundable.

(D) **Duration:** Permits issued under this section shall be for a period not to exceed three (3) years and shall require a renewal fee of ten dollars ($10.00).

(E) **Permit Holder:** Each permit shall only be issued to the applicant if he is the owner of the property or authorized in writing by the owner to apply for the permit. The permit shall run with the land.

(F) **Performance Standards:** The community development director may issue a permit if the applicant demonstrates that the following performance standards will be met:

1. The application is consistent with the goals and objectives of the comprehensive plan.

2. The cylinder exchange shall be located in a cabinet approved by the city. Said cabinet shall be secured.

3. The location of the unit shall be:

a. Ten feet (10') or greater from doors or operable windows.

b. Twenty five feet (25') or greater from gas pumps.

c. Five feet (5') or greater from inflammable materials or combustion sources (firewood, petroleum-based products and sources of sparks such as electric motors on vending machines, air conditioners, etc.).

4. No displays shall be permitted in required parking or driveway areas, landscape areas, required setback areas, or any right of way or other public property. Displays may be permitted on sidewalks, only if they leave at least four feet (4') of sidewalk width available to pedestrians.

5. The display shall not be located within a dumpster enclosure.

6. Exchanges shall be protected by curbing or posts.

7. Cabinets shall contain inflammable and no smoking warning signs. No additional signage will be permitted other than that required by law.

8. No more than one cylinder exchange container shall be located at each site.

(G) **Denial for Non-Compliance:** If the community development department denies a permit, it shall include findings as to the ways in which the proposed use does not comply with the standards required by this title. The applicant may appeal the decision to the city council.

(H) **Revocation:** Failure to comply with any performance standard or any other violation of this title shall be a misdemeanor and shall also constitute sufficient cause for the termination of the permit by the city council following a public hearing.

10-7-39: **PAWNSHOPS:** Pawnshops are prohibited in all zoning districts unless specifically listed as a permitted or conditional use.

10-7-40: **SEXUALLY ORIENTED BUSINESSES:**

(A) **Purpose:** The purpose of this section is to establish provisions for the opportunity as well as control of sexually oriented businesses within the city.

(B) **General:** "Sexually oriented businesses" as defined in this ordinance shall be subject to the following general provisions.

1. Activities classified as obscene as defined by Minnesota statutes section 617.241 are prohibited.

2. Sexually oriented businesses, either principal or accessory, shall be prohibited from locating in any building which is also used for residential purposes.

3. Sexually oriented businesses, either principal or accessory, shall be prohibited from locating in any building which is also licensed to sell intoxicating liquor, non-intoxicating malt liquor or wine.

4. A sexually oriented business which does not qualify as a sexually oriented business-accessory, shall be classified as a sexually oriented business principal.

(C) **Sexually Oriented Business Principal:**

1. Sexually oriented business principal shall be located at least seven hundred feet (700'), as measured in a straight line from the closest point of the property line of the building upon which the sexually oriented business principal is located, from the property line of residentially zoned property.

2. Sexually oriented business-principal shall be located at least one thousand feet (1000'), as measured in a straight line from the closest point of the property line of the building upon which the sexually oriented business principal is located, from the property line of:

a. Another sexually oriented business principal.

b. Schools.

c. Churches.

d. Daycares.

3. Sexually oriented business principal activities, as defined by this ordinance, shall be classified as one use. No two (2) sexually oriented business principal shall be located in the same building or upon the same property and each business shall be subject to subsection (C)2a of this section.

(D) **Sexually Oriented Business Accessory:**

1. Sexually oriented business accessory shall:

a. Comprise no more than ten percent (10%) of the floor area of the establishment in which it is located; provided that the maximum floor area used for sexually oriented business accessory may not exceed one thousand (1,000) square feet.

b. Comprise no more than twenty percent (20%) of the gross receipts of the entire business operation.

c. Not involve or include any activity except the sale or rental of merchandise.

2. Sexually oriented business accessory shall be restricted from and prohibit access to minors by the physical separation of such items from areas of general public access:

a. Movie Rentals. Display areas shall be restricted from general view and shall be located within a separate room, the access of which is in clear view and under the control of the persons responsible for the operation or shall be in catalogs under the direct control and distribution of the operator.

b. Magazines. Publications classified or qualifying as sexually oriented shall not be physically accessible to minors and shall be covered with a wrapper or other means to prevent display of any material other than the publication title.

3. Sexually oriented business accessory activities, including sale or display of instruments, devices or paraphernalia which are used or designed for use in connection with specified sexual activities, shall be prohibited at any public show, movie, caravan, circus, carnival, theatrical or other performance or exhibition presented to the general public where minors are admitted.

(E) **Not Applicable:** Minnesota statutes section 617.242 shall not apply.

10-7-41: COMMERCIAL ZERO LOT LINE DEVELOPMENT:

(A) **Requirements:** To facilitate separate ownership, leasehold, or financing of parts of an existing single principle building and additions thereto, a commercial zero lot line development is allowed as a permitted use in business and industrial zoning districts, provided that the following requirements are met:

1. The development site for the building shall consist of two (2) or more lots of record, and each said lot shall meet the minimum lot area and width requirements of this title.

2. The building and parking lot shall comply with the setback requirements of this title for all non-zero lot lines of the site.

3. No more than two (2) lot lines of any lot shall be used as zero lot lines for the building.

4. The building shall comply with all applicable building codes in title 4 of this code, and each separately owned portion of the building shall comply with the applicable existing requirements. No building shall be located over any recorded easement.

5. The design elements, colors, materials, signage, and architectural style of the building shall be consistent on all elevations, and the landscaping and parking lot shall be maintained in a consistent manner throughout the development.

6. For conversions of existing buildings to commercial zero lot line developments through divisions and single additions, the parking requirements in this chapter and the landscaping requirements in chapter 30A of this title need not be met on each lot, provided that said requirements are met on the aggregate development site. For phased additions to existing buildings, the applicable parking and landscaping requirements shall be met on each lot.

(B) **Review:** All commercial zero lot line developments shall be subject to a site plan review and plat approval to assure compliance with the requirements of this title.

(C) **Agreements:**

1. The owners of all portions of the building shall include draft copies of the following documents with their applications for site plan and plat approval:

a. A maintenance agreement for the continued maintenance of the building, parking lot, landscaping, and all other portions of the site, to assure uniform appearance, maintenance and repair;

b. A reconstruction and remodeling agreement to assure architectural consistency for the building.

c. A cross-access agreement for all shared parking lots and driveways; and

d. A party wall agreement for the use, ownership, and maintenance of each party wall.

2. Prior to the issuance of building permits, the owners shall provide the city with recorded copies of said agreements and the final plat.

10-7-42: INCIDENTAL ACCESSORY USE PERMITS:

(A) **Definitions:** The following words and terms whenever used in this ordinance shall have the meanings stated in this section.

Incidental Accessory Use: Temporary indoor use of a structure not related to the principal use. This excludes special promotional or sales events related to the business on site or special events with advertising as permitted in section 10-30-5 of this title.

Incidental Accessory Use Permit: A permit from the city for the temporary indoor use of a structure not related to the principal use.

(B) **Application:** Any incidental accessory use of a structure requires prior city review of the health and safety aspects of the temporary use. Applicants must supply information concerning:

1. The type of event.

2. Date/times of events.

3. The number of expected persons attending the event.

4. A plan or plans detailing:

   a. Fire exits and equipment for the building.
   b. Restroom facilities.
   c. Available on site and off site parking.
   d. Square footage of building and proposed uses.

5. Indicate if beer/wine, or liquor will be served or allowed on site.

6. Current contact information

No fee shall be charged for the permit or review. The permit may restrict the numbers of persons that may use the structure or facilities for the proposed temporary use based on the number/availability of restrooms, building exits, and/or parking. All trash related to the incidental accessory use must be removed within forty eight (48) hours of the end date of the permit.

(C) **Parking:** The parking required for the incidental accessory use shall be consistent with the requirements of section 10-7-26 of this title for number of stalls required for the temporary use proposed. If adequate parking is not available entirely on site, then shared parking for properties within one hundred feet (100') of the lot may be considered. Written approval from the property owner sharing their parking must be provided. On street parking is not allowed to count towards required parking for the temporary use.

(D) **Duration:** Incidental accessory use permits are valid only for the dates/time set forth in the permit up to three (3) consecutive days (72 hours) for one permit. No more than three (3) permits may be issued for one property during the calendar year. Permits issued throughout the year must be at least thirty (30) days apart.

(E) **Revocation or Denial**: Violation of the terms and conditions of any permit shall constitute a violation of the zoning code and may be the basis for revocation of any permit or the denial of future permits for the property or applicant.

10-7-43: **ACCESSORY CAR WASH:**

(A) Accessory car wash uses shall be allowed only if permitted in the underlying zoning district and are subject to the following provisions and restrictions:

1. Car wash stacking requirements shall be regulated as provided in section 10-7-26 of this title.

2. No more than one car wash bay shall be allowed.

3. The car wash shall be designed to be an integral part of the principal building or if freestanding shall be designed with the same materials as the principal structure.

4. Accessory car washes shall not be installed within existing multi-tenant buildings.

5. Neither the car wash or accessory vacuum shall be located within three hundred feet (300') of any residential use unless completely screened or located across an arterial or major collector roadway from the residential use.

6. Accessory car washes shall meet the screening requirements of section 10-7-18 of this title.

10-7-44: **OFFICE WAREHOUSE, OFFICE AND WHOLESALE SHOWROOM, AND MULTI TENANT WAREHOUSE FACILITIES:**

(A) Office-warehouse, office and wholesale showroom and multi tenant warehouse facilities shall be allowed only if permitted in the underlying zoning district and are subject to the following provisions and restrictions:

1. No such use shall be allowed in an office-warehouse or tenant space of an office-warehouse facility where noise associated with loading activities or business operations will have an adverse impact on adjacent residential uses.

2. Each office-warehouse or wholesale showroom building shall be architecturally designed and constructed with permanent finished building materials so as to be compatible with adjacent development and the city's building standards. The overall appearance of the building shall be that of an office rather than a warehouse.

3. The allowable percentage of floor area devoted to the office function shall be established at the time of approval and ample space be allotted on the site to accommodate the parking area required to service it.

4. All loading and service areas shall meet the screening requirements of section 10-7-18 of this title.

5. Whenever such developments abut or are across the street from residential uses, their interior road patterns shall be arranged in such a way as to rout service vehicle traffic away from residential uses.

10-7-45: **OPEN STORAGE LOT:**

(A) Open storage lots shall be allowed only if permitted in the underlying zoning district and are subject to the following provisions and restrictions:

1. Shall have a principal structure on the lot where the open storage area is located.

2. All open storage shall be one hundred percent (100%) screened, at a minimum of six feet (6') in height in business districts and eight feet (8') in height in industrial districts, at the time of installation from ground level view around the perimeter of the open storage area.

3. Screening shall be provided pursuant to section 10-7-18 of this title.

4. Storage of materials shall not exceed the height of the screening provided.

5. A cross-sectional drawing shall be provided that illustrates sight lines of the open storage area from ground level view of adjacent properties and from the furthest point of the width of the right-of-way from the property line(s) that abut a street.

6. A minimum of fifty percent (50%) of the open storage area shall consist of pervious pavement/paver systems subject to the approval of the city engineer.

7. All non-storage parking areas shall comply with the parking lot landscape requirements in section 10-7-26 of this title.

8. Delivery and loading hours shall be limited to 7:00 a.m. to 10:00 p.m. for all open storage lots that abut or are across the street from a residential use.

10-7-46: **OPEN SALES/RENTAL LOT:**

(A) Open sales/rental lots shall be allowed only if permitted in the underlying zoning district and are subject to the following provisions and restrictions:

1. Shall have a principal structure on the lot.

2. Headlights shall be one hundred percent (100%) screened from adjacent property lines and the public right of way.

3. Open rental and sales lots shall only be considered for vehicles of a noncommercial nature.

4. Parking lot landscaping shall comply with all requirements of section 10-7-26 of this title.

5. A minimum of eight percent (8%) of the interior of the sales lot shall be landscaped. Said landscaping shall count toward meeting the overall site green space requirement identified by section 10-30A of this title, for the underlying zoning district.

6. No auctions shall be permitted.

7. No outdoor speaker systems shall be permitted for uses that abut or are across the street from residential uses.

8. All parking spaces in excess of the minimum number required by section 10-7-26 of this title shall be surfaced with pervious paving/paver systems subject to the approval of the city engineer. In the event soils, topography or other conditions are not appropriate for pervious systems alternate surface materials may be used as approved by the city engineer.

9. Delivery and loading hours shall be limited to the hours of 7:00 a.m. and 10:00 p.m. for all open sales/rental lots that abut or are across the street from a residential use.

10. Accessory car wash/vacuums shall be subject to the requirements of section 10-7-43 of this title.

10-7-47: ***COMMUNITY GARDENS TEMPORARILY PERMITTED: (Ord. Expires 12-1-2010)***

(A) Community gardens are permitted in any zoning district as follows:

1. Community gardens may be the principle or an accessory use on a parcel.

2. Signage is not permitted except for a six (6) square foot identification sign.
3. Fences are permitted consistent with section 10-7-19 of this chapter.

4. Compost bins are permitted as regulated by title 7, chapter 10 of this code.

5. Any trees removed shall be in compliance with section 10-8-9 (Woodland Protection) of this title.

(B) ***Enforcement:*** *The city may enforce this ordinance by injunction or any other appropriate civil remedy in any court of competent jurisdiction.*

(C) ***Separability:*** *Every section, provision or part of this ordinance is declared separable from every section, provision or part of this ordinance. If any section, provision or part of this ordinance is adjudged to be invalid by a court of competent jurisdiction, such judgment shall not invalidate any other section, provisions or part of this ordinance.*

(D) ***Duration:*** *This ordinance shall take effect upon its approval by the city council (May 4, 2010) and shall remain in effect until December 1, 2010.*

[5-5-97 Amd Sec. 26 (B) (4, 5), (D) (6, 11) (E) Ord. 666]; [6-2-97 Amd Sec. 19 Ord. 673]; [12-15-97 Amd Sec. 36 (D) Ord. 699]; [10-6-97 Add Sec. 41 Ord. 687]; [11-17-97 Amd Sec. 37 , Add Sec. 42 Ord. 692]; [4-17-00 Amd Sec. 4(B), 4(C) Ord. 790]; [9-18-00 Amd Sec. 26 (D) (8) (c) Ord 811]; [7-1-02 Amd Sec. 2 (E), Sec. 36, Sec. 38 (F) (3) (a) Ord. 851]; [11-18-02 Add. Sec. 2 (M) Ord. 864]; [7-6-04 Amd Sec. 4 (C), (D), (I) Ord. 932]; [8-2-04 Amd Sec. 2 Ord. 935]; [2-21-06 Sec. 26 (D) (1.) Ord 1016]; [6-19-06 Sec. 26 (J) Ord 1035]; [8-21-06 Amd Sec. 26 (B) (2), (6); Add Sec. 26 (B) (9); Amd. Sec. 26 (D) (1); Amd. Sec. 26 (D) (4); Amd. Sec. 26 (F) (2); Amd. 26 (G) (1) Ord. 1044]; [12-4-06 Amd Add Sec. 43 Ord. 1056]; [12-18-06 Amd Sec. 37, Delete Sec. 42 Ord. 1059]; [9-17-07 Amd Sec. 4 (C-J); Sec. 19 (H) Ord. 1092]; [12-3-07 Amd Sec. 40, add E. Ord. 1104]; [5-5-08 Amd Sec. 26 (D) (6) Ord. 1116]; [8-19-08 Amd. Secs. 18, 20, 21, 24, 26, 27, 36, Add 43, 44, 45, 46 Ord. 1132]; [10-21-08 Amd. Sec. 20 Ord. 1140]; [12-16-08 Amd. Sec. 5 (H) Ord 1147]; [5-5-09 Amd. Sec. 24 (D) Ord. 1158]; [6-2-09 Amd. Sec. 37 (B) Ord. 1166]; [4-6-10 Amd. Secs. 2, 4(C), 4(D), 4(L), 19(A), 26(A, E, F), 33 Ord. 1196]

INTERIM ORDINANCES:

Community Garden Ordinance expires 12-1-2010.

CHAPTER 8

ENVIRONMENTAL OVERLAY DISTRICTS

SECTION:

10-8- 1: General Provisions for All Overlay Districts
10-8- 2: Definitions
10-8- 3: Legislative Findings and Purpose
10-8- 4: Overlay District Administration
10-8- 5: Wetlands Overlay District Standards
10-8- 6: Soil Erosion Overlay District Standards
10-8- 7: Restrictive Soils Overlay District Standards
10-8- 8: Controlling Erosion and Sediment from Land Disturbing Activities
10-8- 9: Woodland Protection Standards
10-8-10: Shoreland Overlay District
10-8-11: Other General Conditions
10-8-12: Time of Permit; Extensions; Renewals
10-8-13: Responsibility; Effect

10-8-1: GENERAL PROVISIONS FOR ALL OVERLAY DISTRICTS:

(A) **Purpose and Intent:** Overlay districts established by this title are created for the purpose of protecting environmentally sensitive areas within designated areas of the city.

(B) **Scope:** These districts shall overlay the established zoning districts so that any parcel of land lying in an overlay district shall also lie in one or more of the established zoning districts. Land within an overlay district shall be subject to the requirements established in this title, as well as restrictions and requirements established by other applicable ordinances and regulations of the city. Within each adopted overlay district all uses shall be permitted in accordance with the regulations for the underlying zoning district(s); provided, however, that such uses must satisfy the additional requirements established in this title before development will be allowed.

(C) **Establishment of Districts:** The following overlay districts are hereby established:

1. Wetlands Overlay District.

2. Soil Erosion Overlay District.

3. Restrictive Soils Overlay District.

4. Woodland Overlay District.

5. Shoreland Overlay District.

6. Stormwater Overlay District.

(D) **District Boundaries:** This title shall apply to the Wetlands, Soil Erosion, Restrictive Soils, and Shoreland Overlay Districts which are specifically delineated on the official Environment Overlay District Maps of the city, which are incorporated herein by reference. For purposes of

this title the Woodland and Stormwater Management Overlay Districts shall encompass the entire city.

10-8-2: **DEFINITIONS:** For purposes of this chapter, the following words and phrases are defined as follows:

ACCESSORY STRUCTURE: Any building or improvement subordinate to a principal use.

BLUFF: A topographic feature such as a hill, cliff, or embankment having the following characteristics (an area with an average slope of less than eighteen percent (18%) over a distance for fifty feet (50') or more shall not be considered part of the bluff):

A. Part or all of the feature is located in a shoreland area;

B. The slope rises at least twenty five feet (25') above the ordinary high water level of the waterbody;

C. The grade of the slope from the toe of the bluff to a point twenty five feet (25') or more above the ordinary high water level averages thirty percent (30%) or greater; and

D. The slope must drain toward the waterbody.

BLUFF IMPACT ZONE: A bluff and land located within twenty feet (20') from the top of a bluff.

BUFFER STRIP: An area of nondisturbed ground cover abutting a wetland that may not be mowed, cut, or fertilized, which is left undisturbed to filter sediment, materials, and chemicals.

BUILDING ACTIVITY AREA: The area on the lot where building activity shall take place, including the entire area affected by building and grading activities related to the approved construction.

BUILDING LINE: A line parallel with the front lot line or the ordinary high water level at the required setback beyond which a structure may not extend.

CLEAR-CUTTING: The removal of an entire stand of trees.

COMMERCIAL USE: The principal use of land or buildings for the sale, lease, rental, or trade of products, goods, and services.

COMMISSIONER: The Commissioner of the Department of Natural Resources.

COMPACTION: Reducing the bulk of soil in a tree's critical root zone (within the drip line) by rolling, tamping and compression.

CROWN COVER: The ratio between the amount of land shaded by the vertical projection of the branches and foliage area of standing trees to the total area of land, usually expressed as a percentage.

CUTTING: Cutting means felling or removal of a tree or any procedure (including root removal) the result of which is to cause the death or substantial destruction of a tree. Cutting does not include normal pruning and trimming.

DECK: A horizontal, unenclosed platform with or without attached railings, seats, trellises, or other features, attached or functionally related to a principal use or site and at any point extending more than three feet (3') above ground.

DESIGN STORM: The 1.5 inch design storm is based on USDA NRCS methods for a storm having a 24 hour duration, Type II Distribution and antecedent moisture conditions 2 (AMC-2)

DEVELOPMENT: The construction, installation or alteration of any structure, the extraction, clearing or other alteration of terrestrial or aquatic vegetation, land or the course current or cross section of any water body or watercourse or the division of land into two (2) or more parcels.

DEVELOPMENT PERMIT: Building permit, subdivision approval, rezoning, interim use permit, conditional use permit, and variance.

DIMENSIONAL REQUIREMENT: A minimum/maximum setback, yard requirement, or structure height or size established in the zoning ordinance.

DRIP LINE: An imaginary vertical line, which extends from the outermost branches of a tree's canopy to the ground.

DUPLEX, TRIPLEX AND QUAD: A dwelling structure on a single lot, having two (2), three (3), and four (4) units, respectively, being attached by common walls and each unit equipped with separate sleeping, cooking, eating, living, and sanitation facilities.

EROSION: The general process by which soils are removed by flowing surface or subsurface wind or water.

EXTRACTIVE USE: The use of land for surface or subsurface removal of sand, gravel, rock, industrial minerals, other nonmetallic minerals, and peat not regulated under Minnesota Statutes, sections 93.44 to 93.51.

GROSS SOIL LOSS: The average annual total amount of soil carried from one acre of land by erosion.

HARDSHIP: The same as that term is defined in Minnesota Statutes, Chapter 462, and Section 10-5-4 (A) of this title.

IMPERVIOUS SURFACE: The portion of the buildable parcel which has a covering which does not permit water to percolate into the natural soil. Impervious surface shall include, but not be limited to, buildings, all driveways and parking areas (whether paved or not), sidewalks, patios, swimming pools, tennis and basketball courts, covered decks, porches, and other structures. Open, uncovered decks are not considered impervious for the purposes of this ordinance. The use of patio blocks, paver bricks or class 5 gravel material are considered impervious surfaces as a majority of water runs-off the surface rather than being absorbed into natural soils underneath..

INDUSTRIAL USE: The use of land or buildings for the production, manufacture, warehousing, storage, or transfer of goods, products, commodities, or other wholesale items.

INTENSIVE VEGETATION CLEARING: The complete removal of trees or shrubs in a contiguous patch, strip, row, or block.

ORDINARY HIGH WATER LEVEL (OHWL): Boundary of public waters and wetlands at an elevation delineating the highest water level which has been maintained for a sufficient period of time to

leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the ordinary high water level is the elevation of the top of the bank of the channel. For reservoirs and flowages, the ordinary high water level is the operating elevation of the normal summer pool.

POORLY DRAINED SOILS: Soils located where the water table is permanently or seasonably three feet (3') or less from the ground surface.

PRINCIPLE STRUCTURE: Any building or appurtenance, including decks, which is used to conduct the principle land use of the lot on which it is located except aerial or underground utility lines, such as sewer, electric, telephone, telegraph, gas lines, towers, poles, and other supporting facilities.

PUBLIC WATERS: Any waters as defined in Minnesota Statutes, section 103G, subdivisions 14 and 15.

PUBLIC WATERS WETLANDS: All types 3, 4, and 5 wetlands, as defined in United States Fish and Wildlife Service Circular No. 39 (1971 edition), not included within the definition of public waters, as defined in Minn. Stat. § 103G.005, Subd. 15, that are two and one-half (2½) or more acres in size.

REMOVE OR REMOVAL: The actual physical removal, or the effective removal through damaging, poisoning or other direct or indirect action resulting in, or likely to result in, the death of the tree.

RETENTION FACILITY: A facility which provides storage of storm water runoff and controlled release of the runoff during and after a flood or storm.

SEDIMENT: Suspended matter carried by water, sewage or other liquids.

SEMIPUBLIC USE: The use of land by a private, nonprofit organization to provide a public service that is ordinarily open to some persons outside the regular constituency of the organization.

SENSITIVE RESOURCE MANAGEMENT: The preservation and management of areas unsuitable for development in their natural state due to constraints such as shallow soils over groundwater or bedrock, highly erosive or expansive soils, steep slopes, susceptibility to flooding, or occurrence of flora or fauna in need of special protection.

SETBACK: The minimum horizontal distance between a structure, sewage treatment system, or other facility and an ordinary high water level, sewage treatment system, top of a bluff, road, highway, property line, or other facility.

SEWAGE TREATMENT SYSTEM: A septic tank and soil absorption system or other individual sewage treatment system as described and regulated in chapter 11 and Section 10-8-10(C)(8) of this chapter.

SEWER SYSTEM: Pipelines or conduits, pumping stations, and force main, and all other construction, devices, appliances, or appurtenances used for conducting sewage or industrial waste or other wastes to a point of ultimate disposal.

SHALLOW SOILS: Soils located over bedrock which lies three feet (3') to five feet (5') below the ground surface.

SHORE IMPACT ZONE: Land located between the ordinary high water level of a public water and a line parallel to it at a setback of fifty percent (50%) of the required structure setback.

SHORELAND: Land located within the following distances from public waters: One thousand feet (1,000') from the ordinary high water level of a lake, pond, or flowage; and three hundred feet (300') from a river or stream, or the landward extent of a floodplain designated by ordinance on a river or stream, whichever is greater. The limits of shorelands may be reduced whenever the waters involved are bounded by topographic divides which extend landward from the waters for lesser distances and when approved by the commissioner.

SIGNIFICANT HISTORIC SITE: Any archaeological site, standing structure, or other property that meets the criteria for eligibility to the National Register of Historic Places or is listed in the State Register of Historic Sites, or is determined to be an unplatted cemetery that falls under the provisions of Minnesota Statutes, section 307.08. A historic site meets these criteria if it is presently listed on either register or if it is determined to meet the qualifications for listing after review by the Minnesota state archaeologist or the director of the Minnesota Historical Society. All unplatted cemeteries are automatically considered to be significant historic sites.

SOIL: The upper layer of earth which may be dug or plowed; the loose surface material of the earth in which vegetation normally grows.

SOILS WITH HIGH FROST ACTION POTENTIAL: Soils which are susceptible to changes in volume during period of frost.

SOILS WITH HIGH SHRINK-SWELL POTENTIAL: Soils which are susceptible to changes in physical volume when moistened.

SOILS WITH LOW PERMEABILITY: Soils which have permeability rate greater than sixty (60) minutes per inch.

SOILS WITH RAPID PERMEABILITY: Soils having a permeability rate between five (5) minutes per inch and one-half (½) minute per inch.

SOILS WITH VERY RAPID PERMEABILITY: Soils having a permeability rate greater than one-half (½) minute per inch.

STEEP SLOPE: Land where agricultural activity or development is either not recommended or described as poorly suited due to slope steepness and the site's soil characteristics, as mapped and described in available county soil surveys or other technical reports, unless appropriate design and construction techniques and farming practices are used in accordance with the provisions of this chapter. Where specific information is not available, steep slopes are lands having average slopes over twelve percent (12%), as measured over horizontal distances of fifty feet (50') or more, that are not bluffs.

STRUCTURE: Any building or appurtenance, including decks, except aerial or underground utility lines, such as sewer, electric, telephone, telegraph, gas lines, towers, poles, and other supporting facilities.

SUBDIVISION: Land that is divided for the purpose of sale, rent, or lease.

SURFACE WATER-ORIENTED COMMERCIAL USE: The use of land for commercial purposes, where access to and use of a surface water feature is an integral part of the normal conductance of business. Marinas, resorts, and restaurants with transient docking facilities are examples of such use.

TOE OF THE BLUFF: The lower point of a fifty foot (50') segment with an average slope exceeding eighteen percent (18%).

TOP OF THE BLUFF: The higher point of a fifty foot (50') segment with an average slope exceeding eighteen percent (18%).

TREE: Any perennial woody plant having a main trunk and a distinct crown. See also – definition of vegetation.

TREE PRESERVATION AREAS: Areas identified on a site plan where no construction or vegetation removal activity can occur, except undesirable trees and vegetation approved by the city forester.

UNDEVELOPED PROPERTY: Any property within the city on which no development (as defined in 10-4-2) has occurred.

VARIANCE: The same as that term as defined or described in Minnesota Statutes, Chapter 462, and sections 10-4-2 and 10-5-4 (A) of this title.

VEGETATION: All plant growth, including without limitation, trees, shrubs, mosses and grasses. See also – definition of tree.

VEGETATION, NATIVE: The pre-settlement group of plant species native to the North American continent which were not introduced as a result of European settlement.

VERY SHALLOW SOILS: Soils located over bedrock which lies zero feet (0') to three feet (3') below the ground surface.

VERY STEEP SLOPES: Slopes over eighteen percent (18%) including all soils grouped in County Soil Survey Class D, E, F.

WATER-ORIENTED ACCESSORY STRUCTURE OR FACILITY: A small, above ground building or other improvement, except stairways, fences, docks, and retaining walls, which, because of the relationship of its use to a surface water feature, reasonably needs to be located closer to public waters than the normal structure setback. Examples of such structures and facilities include boathouses, gazebos, screen houses, fish houses, pump houses, and detached decks.

WETLANDS: Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water, excluding public waters wetlands. For purposes of this definition, wetlands must have the following three attributes:

(A) have a predominance of hydric soils;

(B) are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions; and

(C) under normal circumstances support a prevalence of such vegetation.

WOODLAND: Any tree or stand of trees and other associated vegetation to include understory trees, shrubs, grasses, and leaf litter.

10-8-3: LEGISLATIVE FINDINGS AND PURPOSE:

(A) **Wetlands Overlay District.** Wetlands and public waters wetlands help maintain water quality, serve to reduce flooding and erosion, act as sources of food and habitat for a variety of fish and wildlife, and are an integral part of the community's natural landscape. Wetlands provide the aesthetic benefits

of open space and can be used to provide a natural separation of land uses. It is the intent of this overlay district to establish a policy of sound stewardship through coordination of regulations, which conserve, protect, enhance, and result in the no net loss of these environmentally sensitive resources. In addition, it is the intent of the city to promote the restoration of degraded wetlands. This overlay district is adopted in part to implement the Wetland Conservation Act of 1991 (Minn. Laws 1991, chapter 354, as amended), and the accompanying rules of the Minnesota Board of Water and Soil Resources (Minn. Rules chapter 8420, as amended).

(B) **Soil Erosion Overlay District:** There are areas within the city which, due to steep slopes or unstable soils, create ecological problems including siltation and pollution of water bodies and streams due to excessive erosion and runoff and present threats to the public safety in the form of landslide and mudslide dangers. Therefore, the purposes of this title are:

To promote the public safety by minimizing the hazards of steep slopes and unstable soils and promote public health by reducing the siltation and pollution of water bodies and streams, and promote the general welfare by preserving significant features of the natural character of slopes and conditioning development in a manner that minimizes the above enumerated threats to the health, safety and welfare of the citizens of the city.

(C) **Restrictive Soils Overlay District:** Areas within the city are characterized by certain soil types, slopes and water levels which, without proper corrective action, are unsuitable for development. Inappropriate development in those areas increases soil erosion and sedimentation, the introduction of toxic materials into groundwater, encourages pollution, destroys ecological and natural resources, and requires expenditures of public funds to correct deficiencies thereby acting to the detriment of the health, safety and welfare of the citizens of Burnsville. Therefore, the purposes of this title are:

To provide for the regulation of development on restrictive soils in such a way as to minimize the risk of environmental damage and to protect private home owners and governmental units from incurring high maintenance and capital costs resulting from the necessity to correct deficiencies encountered as a result of development on poorly suited soils.

(D) **Woodland Overlay District:** The preservation of trees and woodlands within the city is critical to the health, safety and welfare of the citizens of the city, as well as those of the metropolitan area. Existing and potential development within the city and the metropolitan area has the effect of reducing and in some cases eliminating wooded areas, which, if preserved and maintained, serve important ecological, recreational and aesthetic functions to the benefit of present and future residents of the city. Therefore, the purposes of this title are:

To preserve woodlands and trees on individual sites, protect the safety of the residents by preventing wind and water erosion, slope instability and rapid runoff, promote the health of the residents by absorption of air pollutants, contaminants and noise; increasing rainfall infiltration to the water table, provide a diversified environment for many kinds of animals and plants necessary for wildlife maintenance and important to the aesthetic values and recreational requirements of the area and promote energy conservation by shading buildings in the summer and breaking winds in the winter.

(E) **Shoreland Overlay District:**

1. **Statutory Authorization:** This shoreland ordinance is adopted pursuant to the authorization and policies contained in Minnesota Statutes, Chapter 103F, Minnesota

Regulations, Parts 6120.2500 - 6120.3900, and the planning and zoning enabling legislation in Minnesota Statutes, chapter 462.

2. **Policy:** The uncontrolled use of shorelands of Burnsville, Minnesota, affects the public health, safety and general welfare not only by contributing to pollution of public waters, but also by impairing the local tax base. Therefore, it is in the best interests of the public health, safety and welfare to provide for the wise subdivision, use and development of shorelands of public waters. The legislature of Minnesota has delegated responsibility to local governments of the state to regulate the subdivision, use and development of the shorelands of public waters and thus preserve and enhance the quality of surface waters, conserve the economic and natural environmental values of shorelands, and provide for the wise use of waters and related land resources. This responsibility is hereby recognized by Burnsville, hereinafter referred to as "the city."

3. **Jurisdiction:** The shoreland overlay district provisions of this chapter shall apply to the shorelands of the public water bodies as classified in Section 10-8-10(B) of this chapter. Pursuant to Minnesota Regulations, Parts 6120.2500 - 6120.3900, no lake, pond, or flowage less than ten (10) acres in size in municipalities need to be regulated in a local government's shoreland regulations. A body of water created by a private user where there was no previous shoreland may, at the discretion of the city, be exempt from this chapter.

4. **Compliance:** The use of any shoreland of public waters; the size and shape of lots; the use, size, type and location of structures on lots; the installation and maintenance of water supply and waste treatment systems, the grading and filling of any shoreland area; the cutting of shoreland vegetation; and the subdivision of land shall be in full compliance with the terms of this Chapter and other applicable regulations.

(F) **Stormwater Overlay District:** The management of stormwater run-off from land is critical to the health, safety and welfare of the citizens of the city. Quality and quantity of run-off directly affects the ecological and physical environments including soil erosion, flooding, water pollution and aquatic life. Therefore, the purposes of this title are:

To accommodate anticipated development while controlling the quality and quantity of stormwater run-off and properly managing and protecting surface ground water resources and thereby implement the Water Resources Management Plan and set forth stormwater management performance standards which apply to all land disturbance activities.

Specific purposes are to further the maintenance of safe and healthful conditions; prevent and control the adverse effects of stormwater, prevent and control soil erosion, prevent and control water pollution, protect spawning grounds, fish and aquatic life; control exceedance of the safe capacity of existing drainage facilities and receiving water bodies; prevent undue channel erosion; control increases in the scouring and transportation of particulate matter; prevent conditions that endanger downstream property; and control building sites, placement of structures, areas of impervious surface and promote sound economic growth.

10-8-4: OVERLAY DISTRICT ADMINISTRATION:

(A) **Administration:** Except as hereinafter provided, no one may perform any development in a Stormwater, Woodlands, Wetlands, Soil Erosion or Restrictive Soils Overlay District or obtain a development permit, without first having demonstrated that the proposed activity will meet or exceed the additional performance standards contained in this title. Any application for a

development permit on land which is covered, in whole or in part, by this title shall include a site plan. Other engineering data, such as surveys, soil studies, and other descriptive information, may also be required at the direction of the city. A specific description of the type, amount and location of the development, and a description of the ecological characteristics of the natural features contained on the property, as well as the conservation plan describing actions to be taken to mitigate detrimental effects of development may also be required. When the proposed development includes the construction or alteration of a structure, eight (8) sets of plans shall be submitted with the application.

(B) **Exceptions:**

1. **Emergency Work Necessary to Preserve Life or Property:** A person may commence emergency work necessary to preserve life or property, provided that within ten (10) days following the commencement of that activity, he/she submit a site plan for review along with any other information, requested by the city necessary to determine if the performance standards contained in this title were met.

If upon this review it is determined that all of the performance standards were not met, a plan shall be submitted and implemented (following city approval) to restore the natural resources to meet the intent of the performance standards contained in this title.

2. **Repair or normal maintenance.**

(C) **Conditional Use:** An applicant of a proposed development whose development does not comply to the letter with one or more of the standards in chapter 8, but meets the spirit of the standards, may apply to the city council for a conditional use permit, pursuant to Section 10-5-5. The applicant shall demonstrate that the standards of section 10-5-5 have been met, and that the proposed development adheres to the purposes of the overlay district standards. The planning commission and city council may attach conditions they deem necessary to protect the overlay district and insure that the intent and purpose of the overlay district is accomplished.

(D) **Enforcement:** The city manager, or his or her designee, is responsible for the administration and enforcement of this chapter. Any violation of the provisions of this chapter or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of variances or conditional and interim uses) shall constitute a misdemeanor and shall be punishable as defined by law. Violations of this chapter can occur regardless of whether or not a permit is required for a regulated activity pursuant to section 10-8-10(A)(1) of this chapter.

(E) **Interpretation:** In their interpretation and application, the provisions of this chapter shall be held to be minimum requirements and shall be liberally construed in favor of the city and shall not be deemed a limitation or repeal of any other powers granted by state statutes.

(F) **Abrogation and Greater Restrictions:** It is not intended by this chapter to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter imposes greater restrictions, the provisions of this chapter shall prevail. All other provisions of this title inconsistent with this chapter are hereby repealed to the extent of the inconsistency only.

(G) **Definitions:** Unless specifically defined in sections 10-4-2 and 10-8-2 of this title, words or phrases used in this chapter shall be interpreted so as to give them the same meaning as they have in common usage and so as to give this chapter its most reasonable application. For the purpose

of this chapter, the words "must" and "shall" are mandatory and not permissive. All distances, unless otherwise specified, shall be measured horizontally.

10-8-5: **WETLANDS OVERLAY DISTRICT STANDARDS:** No development shall be allowed or development permit issued unless the council finds that the proposed development complies with the following standards:

(A) **State Regulations:** The Wetland Conservation Act of 1991 (Minn. Laws 1991 chapter 354, as amended) and that accompanying rules of the Minnesota Board of Water and Soil Resources (Minn. Rules chapter 8420, as amended) are incorporated herein by this referenced.

(B) **Delineation of Wetlands:** Wetlands shall be subject to the requirements established herein, as well as restrictions and requirements established by other applicable city ordinances and regulations. The standards and requirements set forth in this chapter shall not be construed to allow anything otherwise prohibited in the zoning district where the wetland area is located.

A wetland is land that meets the definition of "wetlands" set forth in this chapter. Wetland boundaries and wetland types as established by officially adopted city maps shall be prima facie evidence of the location and type of wetland. If an applicant questions whether a wetland exists or disputes its delineation, the applicant shall have the burden to supply detailed information for review supporting the applicant's position. The applicant shall provide appropriate technical information, including but not limited to, topographical survey and soil data deemed necessary for the city to determine the exact wetland boundary. The city shall make a determination of the delineated wetland boundary or if the boundaries need to be corrected on city plans and maps based upon the data that is supplied. Data for wetland determination shall be certified by a qualified wetland consultant. The applicant may appeal the city's determination of the wetland boundary and type to the city council. Wetland boundaries shall be identified by permanent monumentation acceptable to the city. In residential subdivisions, a monument is required for each lot. In other situations, a monument is required for each 300 feet of wetland boundary.

(C) **No Net Loss:** To achieve no net loss of wetland areas and public values, except as provided under section (O) of this section, or authorized by a wetland alteration permit issued by the city, a person may not drain, grade, fill, remove healthy native vegetation, or otherwise alter or destroy a wetland of any size or type. Any alteration to a wetland, permitted by a wetland alteration permit, must be fully mitigated so that there is no net loss of wetlands.

(D) **Standards:** The following standards apply to all land within and abutting a wetland:

1. Septic and soil absorption system must be setback a minimum of seventy-five (75) feet from a wetland.

2. The lowest ground floor elevation shall be a minimum of two feet (2’) above the elevation of the wetland boundary.

3. Docks shall be elevated six (6) to eight (8) inches above the water surface.

4. Access across a wetland shall be by means of a boardwalk or dock and only upon approval of a wetland alteration permit.

5. The MPCA Urban Best Management Practices shall be followed.

6. The standards of the city's Wetland Protection and Management Plan shall be followed.

(E) **Wetland Buffer Strips and Setbacks:**

1. A buffer strip shall be maintained abutting all wetlands and public waters wetlands in accordance with the following table:

Wetland Classification	Principal and Accessory Structure Setback (feet)	Permanent Buffer Strip Average Width (feet)	Minimum Permanent Buffer Zone Width (feet)	Percent Native Vegetation
Protection	50	50	30	Entire
Improvement	35	35	25	Entire
Management	25	25	20	Majority
Management II	None	20	20	Majority

2. Buffer strip vegetation shall be established and maintained in accordance to the following requirements:

a. Plant species shall be selected from wetland and upland plants to provide habitat for various species of wildlife.

b. The dimensions of the buffer strips may be adjusted by the city based upon the quality of the wetland and public waters wetland, local topographic conditions, and the type and design of development being proposed.

c. The use of a meandering buffer strip to maintain a natural appearance is encouraged.

(F) **Wetland Alteration:** An applicant for a permit to alter a wetland shall adhere to the following principles in descending order of priority:

1. Filling must be consistent with the city's Wetland Protection and Management Plan and the Water Resources Management Plan;

2. Minimizing the impact by limiting the degree or magnitude of the wetland activity and its implementation;

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected wetland activity and its implementation;

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the activity; and

5. Filling in wetland areas must be mitigated in accordance with the requirements of this chapter and the city's Wetland Protection and management Plan.

A permit shall not be issued unless the proposed development complies within the mitigation provisions of subsection (K) of this section as well as the standards, intent, and purpose of this section.

(G) **Permit Required:** Drainage, grading, filling, removal of healthy native vegetation, or otherwise altering or destroying a wetland and any land within the minimum permanent buffer zone as shown in

section E of this chapter of a delineated wetland boundary requires a permit. Activity in a wetland requiring a permit includes, but is not limited to:

1. Construction of new streets and utilities.

2. Creation of ponds or dams and alterations of the natural drainageways of watercourses. This shall only be allowed as part of a mitigation project, or to restore or improve the function and value of the wetland.

3. Installation of boardwalks.

4. Discharge of stormwater runoff in a manner that impacts the wetland.

(H) **Filling:** When a permit is issued allowing filling in a wetland, the following standards shall be followed:

1. Filling must be consistent with the Water Resources Management Plan.

2. Filling shall not cause the total natural nutrient stripping capacity of the wetland to be diminished to an extent that is detrimental to any area river, lake, or stream.

3. Only fill free of chemical pollutants and organic wastes may be used.

4. Filling in wetlands will not be permitted during waterfowl breeding season or fish spawning season, unless it is demonstrated to the city's satisfaction that the wetland is not used for waterfowl breeding or fish spawning.

5. Filling in wetland areas must be mitigated in accordance with the requirements of this chapter.

(I) **Dredging/Excavation/Grading:** When a wetland alteration permit is issued allowing dredging, excavating, or grading in a wetland, the following standards shall be followed:

1. The dredging will not have a net adverse effect on the ecological and hydrological characteristics of the wetland.

2. It shall be located as to minimize the impact on vegetation.

3. It shall not adversely change water flow.

4. The size of the dredged area shall be limited to the minimum required for the proposed action.

5. Disposal of the dredged material is prohibited within the wetland, except to create islands that have been approved by the city as part of the mitigation plan.

6. Disposal of any dredged material shall include proper erosion control and nutrient retention measures.

7. Dredging in any wetland is prohibited during waterfowl breeding season or fish spawning season, unless it is demonstrated to the city's satisfaction that the wetland is not used for waterfowl breeding or fish spawning.

8. Dredging in wetlands must be mitigated in accordance with the requirements of this title if the activity results in a loss of functional wetland. Dredging to create water quality improvement basins may be allowed by the city where reasonable alternatives are not available or where the wetland is of low quality and designated for this purpose by the city's Wetland Protection and Management Plan and the Water Resources Management Plan.

(J) **Storm Water Runoff:** When a permit is issued allowing storm water runoff to discharge directly into a wetland, the following standard shall be followed:

1. Storm water runoff from a development may be directed to the wetland if permitted by the city's Wetland Protection and Management Plan and the Water Resources Management Plan. Sheet flow and other overland drainage of runoff shall be encouraged.

(K) **Mitigation:**

1. **Mitigation Intent.** Where wetland alteration is approved and mitigation is required, mitigation must result in an improvement to the wetland function and value. Mitigation plans must address water quality, improvement, and maintenance of pre-existing hydrological balance and wildlife habitat. The wetland function and value will include improvement of water quality, maintaining hydrological balance, and provision of wildlife habitat. Mitigation will be performed at ratios required by state law to achieve replacement of the wetland function and value.

2. **Mitigation Standards.** Mitigation of wetlands for function and value should be restored, created, and enhanced to have the following characteristics:

a. Relatively stable water levels subject to natural fluctuations.

b. Pretreatment of inflow waters to improve quality.

c. High level of upland/lowland intermingling.

d. A ratio of open water to aquatic vegetation between 1:1 and 1:2.

e. High degree of intermingling of open water and aquatic vegetation.

f. High level of plant species diversity.

g. Restoration of native plant species in upland and lowland areas.

h. Undisturbed upland/lowland edge (i.e., buffer).

i. Meandered wetland edge.

j. Irregular bottom contours - mix of shallow and deep water.

k. Shallow side and bottom slopes - preferable 10:1 to 30:1 around and within wetland; steeper slopes may be used to provide open water and greater vegetation variability.

3. **Mitigation Techniques.**

a. Mitigation shall be performed at a ratio required by state law.

b. Mitigation shall result in no net loss to the wetland function and value. The wetland function and value will include improvement of water quality, maintaining hydrological balance, and provision of wildlife habitat.

c. Mitigation shall provide a buffer strip as set forth in this chapter. The buffer strip acreage may be included in the total acreage for mitigation purposes to the extent allowed pursuant to Minnesota Rules 8420.0540.

d. Mitigation shall maintain or enhance the wetland hydrological balance through the following:

1) Restoration of drained or partially drained wetlands.

2) Restoration of degraded wetlands.

3) Creation of new wetlands.

e. If storm water is channeled into a wetland, mitigation shall provide for pretreatment of water prior to it entering the wetland to improve water quality.

f. The buffer strip landscape shall provide for wildlife cover and utilize a diversity of native flora (i.e., trees, shrubs, grasses, herbaceous plants) to encourage wildlife diversity, provide visual variety, and provide nesting and food for wildlife.

g. Wetland mitigation should be undertaken on-site. If this is not feasible as demonstrated to the city, mitigation should occur in accordance with the requirements of the Wetland Conservation Act.

4. **Construction Management and Long Term Wetland Maintenance:**

a. The permit holder shall follow the urban best management practices to minimize direct impacts due to erosion and construction practices and to safeguard wildlife habitat.

b. The permit holder shall conduct a monitoring program in accordance with the requirements of the Wetland Conservation Act. A letter of credit in the amount of the estimated construction costs of the mitigation plan from the permit holder shall be held to ensure compliance. The letter of credit shall be in the form approved by the city and shall be from an FDIC insured local bank. The letter of credit may be reduced to twenty five percent (25%) if the city approves the mitigation construction and the permit holder provides the city with as-built plans showing compliance with the approved mitigation plans. At the end of the monitoring period, the city will release the last twenty five percent (25%) of the letter of credit if the permit holder demonstrates compliance with the designed wetland as-built plans.

Where feasible, the city shall require the permit holder to satisfy long term management requirements.

(L) **Application and Issuance of Permit.**

1. The applicant for a permit shall furnish the information required by the city including, but not limited to, a site plan, topographic data, hydrological data, and an assessment of the functions and value of the impacted wetland (MnRAM assessment) for the review of a wetland alteration permit application. The director of parks, recreation and natural resources shall use discretion regarding the

level and complexity of information required to review the request. A wetland alteration permit shall not be issued without having been first reviewed by city staff and approved by the city council following requirements and time schedules of Minnesota Rules 8420.0230. The applicant shall have the burden of proving that the proposed use or activity complies with the purpose, intent, and other provisions of this chapter. The city council may establish reasonable conditions which are specifically set forth in the permit to ensure compliance with requirements contained in this title. Such conditions may, among other matters, limit the size, kind, or character of the proposed work; require the construction of other structures; require replacement of vegetation and wetland function and value; establish required monitoring procedures and maintenance activity; state the work over time; require the alteration of the site design to ensure buffering; and require the provision of a performance security.

2. The director of parks, recreation and natural resources or designee shall serve on the technical evaluation panel. Decisions under this ordinance must not be made until after receiving the determination of the technical evaluation panel regarding wetland public values, location, size, and/or type if the city council, the landowner, or a member of the technical evaluation panel asks for such determinations. This requirement does not apply to wetlands for which such data is included in an approved comprehensive wetland protection and management plan per Minnesota Rules 8420.0650. The city council may seek and consider recommendations, if any, made by the technical evaluation panel in making replacement plan decisions.

3. Decisions made under this ordinance concerning implementation of the Wetland Conservation Act may be appealed to the Board of Water and Soil Resources under Minnesota Rules 8420.0250.

4. The application for a permit under this chapter shall be accompanied by a permit fee to be determined by the city council.

(M) **Inspection Of Work:** The city may cause inspection of work for which a wetland alteration permit is issued, at the applicant's expense, to be made periodically during the course of such work and shall cause final inspection to be made following the completion of the work.

(N) **Expiration And Renewal Of Permit:**

1. Unless other time periods are specified by the city council, the person issued a wetland alteration permit shall begin and complete the development authorized by the permit within one (1) year after the date the city council approves the permit application.

2. The permittee shall provide written notice to the city twenty four (24) hours prior to the commencement and completion of the development project. No project shall be deemed to have been completed until approved by the city after receipt of notice of completion.

3. If the permittee fails to commence work on the development within the time specified in this section, the permit shall be void. The city council may renew a void permit at its discretion. If the city council does not renew the permit, the holder of the void permit may make original application for a new permit.

4. The permittee may make written application to the city council for an extension of the time to commence work, but only if the permittee submits the application prior to the date already established to commence work. The application of an extension shall state the reasons the permittee requires an extension.

(O) **Exemptions**. Activities exempted by Minnesota Rules 8420.0122 shall be exempted from the provisions of this title. However, certificates of exemption must be obtained from the city prior to starting work. Applications for certificates of exemption will be reviewed and approved by the director of parks, recreation and natural resources or designee. Applications that are denied may be appealed by the applicant to the city council

10-8-6: **SOIL EROSION OVERLAY DISTRICT STANDARDS:** No development shall be allowed or development permit issued unless the city council finds that the proposed development complies with the following standards:

(A) No development shall be permitted on very steep slopes of forty percent (40%) or more.

(B) During construction and until such time as final control measures are fully implemented and established, adequate development practices will be maintained to insure that gross soil losses (expressed in terms of tons per acre per year) shall not exceed five (5) tons per acre per year during construction or two (2) tons per acre per year during construction when the site is adjacent to a water body or watercourses; and one-half (½) ton per acre per year after the construction activities are completed. This shall be determined by using the U.S. Natural Resources Conservation Service Technical Guide or another commonly accepted soil erosion methodology approved by the city.

(C) The development shall comply with the requirements in section 10-8-8 of this chapter.

(D) A forty foot (40') building setback shall be maintained along the Minnesota River bluffs. The bluffline is defined as the point at which the slope gradient exceeds forty percent (40%).

10-8-7: **RESTRICTIVE SOILS OVERLAY DISTRICT STANDARDS:**

(A) No development shall be allowed or development permit issued unless the city council finds that the proposed development complies with the following requirements:

1. No on-site sewage disposal system shall be permitted on poorly drained soils, shallow soils, soils with low permeability, or soils with rapid permeability unless the permit applicant proves that a conventional soil system will be successfully modified, installed and maintained, such that the restrictive conditions will be overcome.

2. No residential development shall be permitted on poorly drained soils, somewhat poorly drained soils, very shallow soils, soils with high shrink-swell or high frost action potential, or very steep or steep slopes unless the applicant proves construction techniques capable of overcoming the restrictive condition will be used.

3. Industrial uses requiring the bulk storage of chemicals will not be allowed on wet or very wet soils, very shallow soils, or soils with very rapid or rapid permeability areas.

4. No solid waste or hazardous waste disposal shall be permitted in soils with very rapid or rapid permeability or soils over fractured carbonate bedrock.

(B) The certification of plans and specifications as adequate to overcome the restrictive condition by a professional engineer, registered in the State of Minnesota, and experienced and knowledgeable in soils and soils mechanics, shall be acceptable as evidence with regard to the city's and the applicant's meeting of requirements (A)1 and (A)2 above.

10-8-8: CONTROLLING EROSION AND SEDIMENT FROM LAND DISTURBING ACTIVITIES:

(A) **Purpose:** The purpose of this section is to control or eliminate stormwater pollution along with soil erosion and sedimentation within the city. It establishes standards and specifications for conservation practices and planning activities designed to minimize stormwater pollution, soil erosion and sedimentation.

(B) **Compliance:** Any person, firm, sole proprietorship, partnership, corporation, state agency, or political subdivision proposing a land disturbance activity that involves ninety (90) or more cubic yards of earth work shall comply with the requirements of this section. The city engineer may require that any land disturbing activity that does not meet the above requirements but has the potential for generating stormwater pollution due to erosion and sediment control issues be required to comply with portions of this section.

(C) **General Criteria for Erosion and Sediment Control:** The general criteria identified in this chapter are minimum city requirements for controlling erosion and sedimentation from "land disturbing activities." These general criteria do not replace the requirement for individually developed erosion and sediment control plans; however, they do establish minimum standards of soil conservation practice which apply to all land disturbing projects.

Nothing in the general criteria shall limit the right of the city to impose additional or more stringent standards for controlling erosion and sedimentation during the plan approval and construction process up to and including final stabilization. The city may waive or modify any of the general criteria which are deemed inappropriate or too restrictive for site conditions.

(D) **Stormwater Pollution Prevention Plan (SWPPP):** A SWPPP shall be submitted to the city for approval. No land shall be disturbed until the plan is approved by the city and conforms to the standards set forth herein:

1. **Minimum SWPPP Requirements:** The SWPPP shall comply with the most recent regulations of the Minnesota Pollution Control Agency’s (MPCA’s) NPDES/SDS permit program, where applicable. The SWPPP shall include, at minimum, the following information:

a. An existing conditions site plan that includes the following:

1) Existing topography and land cover.
2) Identification of all natural and artificial water features, including, but not limited to lakes, ponds, streams, wetlands, detention areas and stormwater conveyance systems. The normal water level and 100 year flood elevations shall be shown for all water features.
3) Watershed drainage areas.
4) Location of steep and very steep slopes.
5) Location of utilities and easements.

b. A proposed conditions site plan that includes the following:

1) Proposed grading and land cover, including temporary stock piles and construction limits.
2) Location of all proposed stormwater treatment devices, including but not limited to ponds, rain gardens, swales, underground systems, pervious payment and stormwater conveyance systems. The normal water level and 100 year flood elevations shall be shown for all stormwater treatment devices.
3) Locations of proposed runoff control, erosion prevention, sediment control, and temporary and permanent soil stabilization measures.
4) Proposed watershed drainage areas.
5) Location of proposed utilities and easements.

c. Specifications that include the following:

1) Identification of individuals responsible for implementation of the SWPPP.
2) Description and details of the proposed erosion, sediment and stormwater pollution control devices.
3) Schedule indicating the time of the construction activities, implementation, maintenance, and removal of erosion and sediment control measures, and permanent site stabilization measures.
4) Information on the type of soils at the site.

d. Additional information as requested by the city engineer.

2. **SWPPP Performance Standards and Design Criteria:** The erosion and sediment control measures shall conform to the practices as contained in the most recent version of the MPCA's Best Management Practices (BMPs) manual "Protecting Water Quality in Urban Areas" and shall comply with the most recent regulations of the MPCA's NPDES/SDS permit program, where applicable, unless otherwise indicated. The following minimum standards and criteria shall apply:

a. Construction Scheduling: Construction activities shall be scheduled to lessen the impact on erosion and sediment creation and minimize the amount of exposed soil at any one time. Sediment control measures must be in place and inspected prior to issuance of permits.

b. Protection of Adjacent Property: Soil shall be prevented from being deposited onto adjacent properties, rights-of-way, public storm drainage systems, wetlands and non-disturbed portions of the construction site.

c. Soil Stabilization: Measures must be taken as soon as practicable to stabilize the soil in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than fourteen (14) days after construction activity in that portion of the site has temporarily or permanently ceased.

d. Slopes: Slopes shall not be steeper than 3:1.

e. Off-Site Sediment Tracking and Dust Control: Measures must be taken to minimize off site vehicle tracking of sediment onto paved surfaces and the generation of dust. Sediment that is tracked off site must be removed at the end of each day or more

frequently as determined by the city. Sediment shall be removed from roads by shoveling or sweeping and be transported to a sediment controlled disposal area.

f. Soil Stockpiles. Soil stockpiles must be a minimum of twenty five feet (25') from all roads, water features, drainage channels, or stormwater inlets. Stockpiles must also be stabilized and protected with erosion and sediment control measures to prevent soil loss.

g. Storm Sewer Inlet Protection: All storm drainage inlets receiving runoff from the construction site shall be protected with sediment control measures. The inlet protection shall remain in place until final stabilization of the site has been achieved.

h. Storm Sewer Outlet Protection: All required energy dissipation measures must be installed within twenty-four (24) hours of connection to a surface water.

3. Inspection and Maintenance: The applicant shall be responsible for the inspection and maintenance of the site. All inspection and maintenance practices shall comply with the most recent regulations of the MPCA's NPDES/SDS permit program.

4. Modification of Plans. The SWPPP may be amended as necessary upon submittal of a written application to the city and written approval from the city.

(E) **Financial Securities:** The applicant shall provide securities as required by city policy number 2.050. If the applicant fails to comply with the approved SWPPP, or in the event of an emergency, the city may take such action as it deems appropriate to control erosion and sediment and charge the costs to the applicant. If the applicant does not reimburse the city for any cost incurred for such work to remedy erosion and sediment concerns within ten (10) days, the city may drawn down the required security to pay the costs.

(F) **Right of Entry and Inspection:** The applicant shall allow the city and its authorized representatives, upon presentation of credentials to:

1. Enter upon the permitted site for the purpose of obtaining information, examination of records, conducting investigations or surveys.

2. Bring such equipment upon the permitted development as is necessary to conduct such surveys and investigations.

3. Examine and copy any books, papers, records, or memoranda pertaining to activities or records required to be kept under the terms and conditions of this permitted site.

4. Inspect the stormwater pollution control measures.

5. Sample and monitor any items or activities pertaining to stormwater pollution control measures.

6. Correct deficiencies in erosion and sediment control.

(G) **Notification of Non-Compliance:** The city shall notify the permit holder of any complaints per city policy number 2.050.

(H) **Failure to Comply:** Should an applicant fail to comply with any requirement of this section, the city may take the following actions:

1. Withhold the scheduling of inspections and/or the issuance of a Certificate of Occupancy.

2. Revoke any permit issued by the city to the applicant for the site or project in question.

3. Follow established procedures on issuing warnings or violation summons as deemed appropriate by the city.

4. Correct the deficiency or hire contractors to correct the deficiency and draw down the required security to pay for the costs and to assess the property for any deficiency between the costs of correction and the amount of financial security.

(I) **Abrogation and Greater Restrictions:** It is not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this section imposes greater restrictions, the provisions of this section shall prevail.

10-8-9: **WOODLAND PROTECTION STANDARDS:** No development shall be allowed or development permit issued within the City of Burnsville until the council finds that the development will comply with the following:

(A) To the extent possible, woodlands shall be preserved by locating structures in existing clearings and by the use of other innovation design technique. Variances may be granted to developers when granting of such will help protect and preserve a woodland.

(B) **Undeveloped Land.** No coniferous trees six feet (6') or taller or deciduous trees four inches (4") or greater in diameter as measured at four and one half feet (4 ½') above the ground shall be removed from undeveloped property without a tree removal permit, or as part of a city approved development of the property. A woodland evaluation worksheet is required on all new development projects. Any trees removed prior to development, through a Tree Removal Permit, shall be included in future woodland removal calculations. For purposes of calculating woodland values, trees in existence as of 11/15/82 (date of original Woodland Ordinance) shall be included. While development shall retain the maximum amount of woodland possible, it is recognized that a certain amount of woodland removal is an inevitable consequence of the urban development process.

The threshold of clearing for each zoning district, beyond which reforestation shall be required, is as follows: (Ord. 1196, 4-6-10)

Zoning District	*Woodland Removal Threshold
R-1, R-1A	40%
R-2, R-3A, R-3B, R-3C, R-3D	50%
B-1, B-2	50%
B-3, B-4	60%
I-1, I-2, I-3, GIM, GIH	60%

*Applies only to deciduous trees 4" or greater in diameter at 4½' feet above the ground and coniferous trees 6' feet or taller.

(C) **Developed Land.** Property owners may remove trees, (unless restricted by a CUP or PUD or other development agreement) under the following circumstances:

1. In all zoning districts, any deciduous trees less than four inches (4”) in diameter, at four and a half (4 ½”) above the ground, and any dying or dead trees. No permit is required.

2. On residential lots under two (2) acres any tree. No permit is required.

3. On residential lots of two (2) or more acres, and all other zoning districts, up to the tree removal threshold identified in Section “B.” Removal of trees requires a tree removal permit and reforestation for trees removed beyond the identified thresholds.

(D) Trees, which are committed to preservation through permit or agreement, shall be surveyed by the developer or landowner. A replacement value for each tree will be determined by the city using the city's Shade Tree Evaluation Method. Letter of credit for the value of trees which are to be preserved beyond the removal threshold under this chapter shall be at the rate of one and one-half (1½) times the determined valuation.

The city’s standard letter of credit form shall be used. The letter(s) of credit will be released when the following conditions are met:

1. Eighteen (18) months has passed from the end of construction (determined by the issuance of a certificate of occupancy) in the area for which the letter(s) of credit were collected. (Ord. 1196, 4-6-10)

2. An inspection by city staff has verified that the trees which were to be preserved are in good condition.

Exceptions to the above will be considered if unique circumstances exist. Exceptions must be reviewed and approved by both the city forester and planning staff.

(E) The city may permit additional tree removal by requiring reforestation in adjacent areas such as yard setbacks, outlots, or parklands. A tree removal permit to exceed the identified removal threshold will only be issued after review by the city forester and planning staff to ensure that the best available layout has been used to preserve significant trees and woodland areas. Reforestation shall occur in an amount equal to 1.5 times the value of the trees removed beyond the tree removal threshold. The value of the trees removed shall be determined by the shade tree evaluation method. Reforestation plans shall not include the use of any of the tree species which are currently on the city’s list of “Species Which Do Not Meet Reforestation Requirements.” No more than 25% of the reforestation plan shall consist of any one species, including shrubs provided on any related landscape plan.

(F) Grading, contouring, paving, compaction of soils, or any excavation or trenching shall not occur within the dripline of tree preservation areas. Such activity has a detrimental effect on the aeration and permeability of the soils and causes permanent damage to the primary root zone of trees.

(G) Measures shall be taken to protect and preserve the woodlands as described in the city's “Practical Guide to Preventing Construction Damage to Trees.”

(H) Notwithstanding the above, the removal of dead or dying trees seriously damaged by storm, other acts of nature, or disease is not prohibited. Trees removed due to acts of nature do not require reforestation.

(I) **Construction Sites.** No movement and placement of equipment or materials storage shall be permitted outside the building activity area or in the tree preservation area. All buildings and driveways shall be located to avoid tree damage consistent with minimum building setback requirements of the zoning ordinance. The tree preservation area shall be temporarily fenced (with highly visible 4' high fencing) by the developer during all construction so that all trees in the tree preservation area shall be preserved. The city manager or designee shall have the authority to stop construction on the site until adequate barriers have been constructed. If a barrier is constructed on the site and is not adequately maintained in a manner, which protects the tree preservation area, the city manager or designee shall have the authority to stop construction until the barrier is repaired.

(J) Permits authorizing removal of trees may be issued by the city manager or designee in circumstances when the issuance of such a permit is found to be consistent with the purpose of this section.

In all cases of permit application, the city manager or designee shall use reasonable interpretations of the circumstances in determining whether or not the permit should be issued.

(K) **Appeals.** The property owner may appeal to the planning commission and city council any decision made by the city manager or other city official under the provisions of this section within thirty (30) days of the decision being rendered.

10-8-10: SHORELAND OVERLAY DISTRICT:

(A) **Administration:**

1. **Permits required:**

a. A permit is required for the construction of buildings or building additions (and including such related activities as construction of decks and signs), the installation and/or alteration of sewage treatment systems, and those grading and filling activities not exempted by section 10-8-10(C)(3) of this chapter. Application for a permit shall be made to the city manager, or his or her designee, on the forms provided. The application shall include the necessary information so that the city manager, or his or her designee, can determine the site's suitability for the intended use and that a compliant sewage treatment system will be provided.

b. A permit authorizing an addition to an existing structure shall stipulate that an identified nonconforming sewage treatment system, as defined by section 10-8-10(C) (8) of this chapter, shall be either brought into compliance or eliminated according to the provisions of chapter 11 of this title.

2. **Certificate of Zoning Compliance:** The city manager, or his or her designee, shall issue a certificate of zoning compliance for each activity requiring a permit as specified in section 10-8-10(A)(1) of this chapter. This certificate shall specify that the use of land conforms to the requirements of this chapter. Any use, arrangement, or construction at variance with that authorized by permit shall be deemed a violation of this chapter and shall be punishable as provided in section 10-8-4(D) of this chapter.

3. **Variances:**

a. Variances may only be granted in accordance with Minnesota Statutes 462 and section 10-5-4 of this title as applicable. A variance may not circumvent the general purposes and intent of this chapter. No variance may be granted that would allow any use that is prohibited in the zoning district in which the subject property is located. Conditions may be imposed in the granting of a variance to ensure compliance and to protect adjacent properties and the public interest. In considering a variance request, the city council must also consider whether the property owner has reasonable use of the land without the variance, whether the property is used seasonally or year-round, whether the variance is being requested solely on the basis of economic considerations, and the characteristics of development on adjacent properties.

b. In order to preserve water quality, the city will require a natural vegetated buffer strip on riparian lots as a mitigation measure with any variances granted. This includes variances to the OHWL setback, other setbacks and yard requirements, impervious surface, etc. The buffer strip must run parallel to and extend landward from the OHWL, with an average width of no less than twenty feet (20'). The buffer strip must be planted with native vegetation as approved by the city, and must not be mowed, cut or fertilized. A pervious twenty foot (20') wide, or twenty percent (20%) of the lot width at the shoreline (whichever is less) walkway or path may be established across the width of the buffer strip to allow access to a beach, dock or other amenity. If a beach is established landward of the OHWL, the buffer strip can be moved further landward to accommodate it.

c. The city council shall hear and decide requests for variances in accordance with the rules that it has adopted for the conduct of business. When a variance is approved after the Department of Natural Resources has formally recommended denial in the hearing record, the notification of the approved variance required in section 10-8-10-(A)(4)(b) below shall also include the city council's summary of the public record/testimony and the findings of facts and conclusions which supported the issuance of the variance.

d. For existing developments, the application for a variance must clearly demonstrate whether a conforming sewage treatment system is present for the intended use of the property. The variance, if issued, must require that a nonconforming sewage treatment system be either brought into compliance or eliminated according to the provisions of chapter 11 of this title.

4. **Notifications to the Department of Natural Resources:**

a. Copies of all notices of any public hearings and reviews to consider variances, amendments, or conditional and interim uses under local shoreland management controls must be sent to the commissioner or the commissioner's designated representative and postmarked at least ten (10) days before the hearings. Notices of hearings to consider proposed subdivisions/plats must include copies of the subdivision/plat.

b. A copy of approved amendments and subdivisions/plats, and final decisions granting variances or conditional and interim uses under local shoreland management controls must be sent to the commissioner or the commissioner's designated representative and postmarked within ten (10) days of final action.

(B) **Shoreland Classification System and Land Use Districts:**

1. **Shoreland Classification System:** The public waters of the city have been classified below consistent with the criteria found in Minnesota Regulations, Part 6120.3300, and the Protected Waters Inventory Map for Dakota County, Minnesota.

a. The shoreland area for the waterbodies listed in sections 10-8-10(B)(1)(b) and 10-8-10(B)(1)(c) shall be as defined in section 10-8-2 and as shown on the Official Zoning Map. The shorelands of the city are hereby designated as Shoreland Overlay District.

b. Lakes:

MnDNR ID No.	MnDNR Classification	Name
19-0021	Recreational Development (RD)	Alimagnet
19-0024	Natural Environment (NE)	Wood Park
19-0025	Natural Environment (NE)	Keller
19-0027	Recreational Development (RD)	Crystal
19-0028	Natural Environment (NE)	Twin
19-0032	Natural Environment (NE)	Horseshoe
19-0033	Natural Environment (NE)	Earley
19-0083	General Development (GD)	Black Dog

Note: Sunset Lake does not have a DNR designation. It is not required to be regulated by the MnDNR.

c. Rivers:

Name	Classification	Location
Minnesota River	Transition	35W Bridge to Savage
Minnesota River	Transition	35W Bridge to Eagan
Unnamed Black Dog Lake	Tributary	From: Sect. 24, Twp. 27, RNG. 24W To: Basin 83
One Mile Creek	Tributary	From: Sect. 24, Twp. 27, RNG. 24W To: Sect. 24, Twp. 17, RNG. 24W
Unnamed Tributary	Tributary	From: Sect. 26, Twp. 27, RNG. 24W To: Basin 110

2. **Land Use District Descriptions:**

a. Criteria for designation: The land use districts in section 10-6-1, and the delineation of a land use district's boundaries on the Official Zoning Map, must be consistent with the goals, policies, and objectives of the Comprehensive Land Use Plan and the following criteria, considerations, and objectives:

1) preservation of natural areas;

2) present ownership and development of shoreland areas;

3) shoreland soil types and their engineering capabilities;

4) topographic characteristics;

5) vegetative cover;

6) in-water physical characteristics, values, and constraints;

7) recreational use of the surface water;

8) road and service center accessibility;

9) socioeconomic development needs and plans as they involve water and related land resources;

10) the land requirements of industry which, by its nature, requires location in shoreland areas; and

11) the necessity to preserve and restore certain areas having significant historical or ecological value.

b. Land use district descriptions: The land use districts provided in section 10-6-1, and the allowable land uses therein for the given classifications of waterbodies, shall be properly delineated on the Official Zoning Map for the shorelands of the city. These land use districts are in conformance with the criteria specified in Minnesota Regulation, Part 6120.3200, Subp. 3.

(C) **Zoning and Water Supply/Sanitary Provisions:**

1. **Lot Area and Width Standards:** The lot area standards (in square feet) and lot width standards (in feet) for single, duplex, triplex and quad residential lots created after the date of enactment of this ordinance for the lake and river/stream classifications are the following:

a. Lake Standards:

Lot Area (Sq. Ft.):	NE	RD	GD
Lots with Shoreline:			
Single	40,000	20,000	15,000
Single (unsewered)	2 acres	2 acres	2 acres
Duplex	70,000	35,000	26,000
Triplex	100,000	50,000	38,000
Quad	130,000	65,000	49,000
All Others:			
Single	20,000	15,000	10,000
Single (unsewered)	2 acres	2 acres	2 acres
Duplex	35,000	26,000	17,500
Triplex	52,000	38,000	25,000
Quad	65,000	49,000	32,500

Lot Width (Ft.):	NE	RD	GD
Lots with Shoreline:			
Single	125	80	80

Single (unsewered)	200	200	200
Duplex	225	135	135
Triplex	325	195	195
Quad	425	255	255
All Others:			
Single	125	80	80
Single (unsewered)	200	200	200
Duplex	220	135	135
Triplex	315	190	190
Quad	410	245	245
Principle and Accessory Structure Setback from OHWL (Ft.)	150*	75	50
Total Impervious Surface Area	25%	25%	25%
Total Building Height (Ft.)	35	35	35

*Earley Lake and Keller Lake shall remain at 100 ft. from OHWL.

b. River/stream lot width standards: There is no minimum lot size requirements for rivers and streams. The lot width standards for single, duplex, triplex and quad residential developments for the river/stream classifications are:

	Transition	Tributary
Single	250	100
Duplex	375	150
Triplex	500	200
Quad	625	250

c. Special provisions:

1) Only land above the ordinary high water level of public waters can be used to meet lot area standards. The lot width is the horizontal distance between the side lots lines, measured on a straight line that is as perpendicular to the side lot lines as possible, and that is parallel with the front lot line, as defined in section 10-4-2 of this title. The width standard must be met at both the ordinary high water level and at the building line. For lots with irregular front lot lines and/or shorelines, the width shall be measured on a straight line that is as perpendicular to the side lot lines as possible, and that is no closer to the front lot line and/or the shoreline than any portion of the building line and/or the ordinary high water level, respectively. The sewer lot area dimensions in section 10-8-10(C)(1)(a) of this chapter can only be used if publicly owned sewer system service is available to the property.

2) Subdivisions of duplexes, triplexes, and quads on NE lakes must also meet the following standards:

a) each building must be set back at least two hundred feet (200') from the ordinary high water level;

b) each building must have public sanitary sewer and water service;

c) watercraft docking facilities for each lot must be centralized in one (1) location and serve all dwelling units in the building; and

d) no more than twenty five percent (25%) of a lake's shoreline can be in duplex, triplex, or quad developments.

3) Mooring facilities for seven (7) or more watercraft are prohibited on all lakes. Marinas are only permitted along rivers as regulated by the underlying zoning district.

d. Structure and On-site Sewage System Setbacks (in feet) from Ordinary High Water Level*. Setbacks are measured from the closest point of the OHWL to the closest point of the structure.

Lakes	Unsewered	Sewered	System
Natural Environment (NE)	150	150	150
Recreational Development (RD)	100	75	75
General Development (GD)	75	50	50
Rivers			
Transition	150	150	100
Tributary and Urban	100	50	75

*One water-oriented accessory structure designed in accordance with section 10-8-10(C)(2) of this chapter may be set back a minimum distance of twenty feet (20') from the ordinary high water level.

e. Additional Structure Setbacks. The following additional structure setbacks apply, regardless of the classification of the waterbody:

Setback From	Setback (in feet)
top of bluff	30
unplatted cemetery	50
right-of-way line of federal, state, or county highway (Ord. 1196, 4-6-10)	50
right-of-way line of town road, public street, or other roads or streets not classified	30

f. Bluff Impact Zones: Structures and accessory facilities, except stairways and landings, must not be placed within bluff impact zones.

g. Uses Without Water-oriented Needs: Uses without water-oriented needs must be located on lots or parcels without public waters frontage, or, if located on lots or parcels with public waters frontage, must either be set back double the normal ordinary high water level setback or be substantially screened from view from the water by vegetation or topography, assuming summer, leaf-on conditions.

2. **Design Criteria for Structures:**

a. High Water Elevations: Structures must be placed in accordance with floodplain and the Burnsville Water Resources Management Plan (WRMP) regulations applicable to the site. (Ord. 1196, 4-6-10)

b. Water-oriented Accessory Structures: Each lot may have one (1) water-oriented accessory structure and one open play structure such as a swing set or slide, but not a swimming pool or sport court not meeting the normal structure setback in section 10-8-10(C)(1)(a) of this chapter if this water-oriented accessory structure complies with the following provisions:

1) the structure or facility must not exceed ten feet (10') in height, exclusive of safety rails, and cannot occupy an area greater than one hundred twenty (120) square feet. The roof may be used as a deck with safety rails, but must not be enclosed or used as a storage area;

2) the setback of the structure or facility from the ordinary high water level must be at least twenty feet (20') and the setback from the side lot line shall be at least ten feet (10’);

3) the structure or facility must be treated to reduce visibility as viewed from public waters and adjacent shorelands by vegetation, topography, increased setbacks or color, assuming summer, leaf-on conditions;

4) detached decks must not exceed eight feet (8’) above grade at any point as measured to the floor of the deck; and

5) the structure or facility must not be designed or used for human habitation and must not contain water supply or sewage treatment facilities.

c. Stairways, Lifts, and Landings. Stairways and lifts are the preferred alternative to major topographic alterations for achieving access up and down bluffs and steep slopes to shore areas. Stairways and lifts must meet the following design requirements:

1) stairways and lifts must not exceed four feet (4') in width on residential lots. Wider stairways may be used for commercial properties and public open-space recreational properties.

2) landings for stairways and lifts on residential lots must not exceed thirty two (32) square feet in area. Landings larger than thirty two (32) square feet may be used for commercial properties and public open-space recreational properties.

3) canopies or roofs are not allowed on stairways, lifts, or landings;

4) stairways, lifts, and landings may be either constructed above the ground on posts or pilings, or placed into the ground, provided they are designed and built in a manner that ensures control of soil erosion;

5) stairways, lifts, and landings must be located in the most visually inconspicuous portions of lots, as viewed from the surface of the public water assuming summer, leaf-on conditions, whenever practical; and

6) facilities such as ramps, lifts, or mobility paths for physically handicapped persons are also allowed for achieving access to shore areas, provided that the dimensional and performance standards of subsections (1) to (5) above are complied with in addition to the requirements of Minnesota Regulations, Chapter 1340.

d. Significant Historic Sites: No structure may be placed on a significant historic site in a manner that affects the values of the site unless adequate information about the site has been removed and documented in a public repository.

e. Steep Slopes: The city manager, or his or her designee, must evaluate possible soil erosion impacts and development visibility from public waters before issuing a permit for construction of sewage treatment systems, roads, driveways, structures, or other improvements on steep slopes. When determined necessary, conditions must be attached to issued permits to prevent erosion and to preserve existing vegetation screening of structures, vehicles, and other facilities as viewed from the surface of public waters, assuming summer, leaf-on conditions.

f. Height of Structures: All structures in residential districts, except churches, must not exceed thirty five feet (35') in height.

3. **Shoreland Alterations:** Alterations of vegetation and topography will be regulated to prevent erosion into public waters, fix nutrients, preserve shoreland aesthetics, preserve historic values, prevent bank slumping, and protect fish and wildlife habitat.

a. Vegetation Alterations:

1) Vegetation alteration necessary for the construction of structures and sewage treatment systems and the construction of roads and parking areas regulated by section 10-8-10(C)(4) of this chapter are exempt from the vegetation alteration standards that follow.

2) Removal or alteration of vegetation is allowed subject to the following standards:

a) Intensive vegetation clearing within the shore and bluff impact zones and on steep slopes is not allowed. Intensive vegetation clearing for forest land conversion to another use outside of these areas is allowable as an interim use if an erosion control and sedimentation plan is developed and approved by the soil and water conservation district in which the property is located.

b) In shore and bluff impact zones and on steep slopes, limited clearing of trees and shrubs and cutting, pruning, and trimming of trees is allowed to provide a view to the water from the principal dwelling site

and to accommodate the placement of stairways and landings, picnic areas, access paths, beach and watercraft access areas, and permitted water-oriented accessory structures or facilities, provided that:

(1) the screening of structures, vehicles, or other facilities as viewed from the water, assuming summer, leaf-on conditions, is not substantially reduced;

(2) along rivers, existing shading of water surfaces is preserved; and

(3) the above provisions are not applicable to the removal of trees, limbs, or branches that are dead, diseased, or pose safety hazards.

b. Topographic Alterations/Grading and Filling:

1) Grading and filling and excavations necessary for the construction of structures, sewage treatment systems, and driveways under validly issued construction permits for these facilities do not require the issuance of a separate grading and filling permit. However, the grading and filling standards in this Section must be incorporated into the issuance of permits for construction of structures, sewage treatment systems, and driveways.

2) Public roads and parking areas are regulated by section 10-8-10(C)(4) of this chapter.

3) Notwithstanding Subsections (1) and (2) above, a grading and filling permit shall be required for:

a) the movement of more than ten (10) cubic yards of material on steep slopes or within shore or bluff impact zones; and

b) the movement of more than ninety (90) cubic yards of material outside of steep slopes and shore and bluff impact zones.

4) The following considerations and conditions must be adhered to during the issuance of construction permits, grading and filling permits, conditional and interim use permits, variances and subdivision approvals:

a) grading or filling in any type 2, 3, 4, 5, 6, 7, or 8 wetland must be evaluated to determine how extensively the proposed activity would affect the following functional qualities of the wetland*:

(1) sediment and pollutant trapping and retention;

(2) storage of surface runoff to prevent or reduce flood damage;

(3) fish and wildlife habitat;

(4) recreational use;

(5) shoreline or bank stabilization; and

(6) noteworthiness, including special qualities such as historic significance, critical habitat for endangered plants and animals, or others.

*This evaluation must also include a determination of whether the wetland alteration being proposed requires permits, reviews, or approvals by other local, state, or federal agencies such as a watershed district, the Minnesota Department of Natural Resources, or the United States Army Corps of Engineers. The applicant shall be so advised.

b) alterations must be designed and conducted in a manner that ensures only the smallest amount of bare ground is exposed for the shortest time possible;

c) mulches or similar materials must be used, where necessary, for temporary bare soil coverage, and a permanent vegetation cover must be established as soon as possible;

d) methods to minimize soil erosion and to trap sediments before they reach any surface water feature must be used;

e) altered areas must be stabilized to acceptable erosion control standards consistent with the field office technical guides of the local soil and water conservation districts and the United States Soil Conservation Service;

f) fill or excavated material must not be placed in a manner that creates an unstable slope;

g) plans to place fill or excavated material on steep slopes must be reviewed by qualified professionals for continued slope stability and must not create finished slopes of thirty percent (30%) or greater;

h) fill or excavated material must not be placed in bluff impact zones;

i) any alterations below the ordinary high water level of public waters must first be authorized by the commissioner under Minnesota Statutes, section 103G.245;

j) alterations of topography must only be allowed if they are accessory to permitted, conditional, or interim uses and do not adversely affect adjacent or nearby properties; and

k) placement of natural rock riprap, including associated grading of the shoreline and placement of a filter blanket, is permitted if the finished slope does not exceed three feet (3') horizontal to one foot (1') vertical,

the landward extent of the riprap is within ten feet (10') of the ordinary high water level, and the height of the riprap above the ordinary high water level does not exceed three feet (3').

5) Connections to public waters. Excavations where the intended purpose is connection to a public water, such as boat slips, canals, lagoons, and harbors, must be controlled by local shoreland controls. Permission for excavations may be given only after the commissioner has approved the proposed connection to public waters.

4. **Placement and Design of Roads, Driveways, and Parking Areas:**

a. Public and private roads and parking areas must be designed to take advantage of natural vegetation and topography to achieve maximum screening from view from public waters. Documentation must be provided by a qualified individual that all roads and parking areas are designed and constructed to minimize and control erosion to public waters consistent with the field office technical guides of the local soil and water conservation district, or other applicable technical material.

b. Roads, driveways, and parking areas must meet structure setbacks and must not be placed within bluff and shore impact zones, when other reasonable and feasible placement alternatives exist. If no alternatives exist, they may be placed within these areas, and must be designed to minimize adverse impacts.

c. Public and private watercraft access ramps, approach roads, and access-related parking areas may be placed within shore impact zones provided the vegetative screening and erosion control conditions of this subpart are met. For private facilities, the grading and filling provisions of section 10-8-10(C)(3)(b) of this chapter must be met.

5. **Stormwater Management:**

a. Land development shall comply with the Water Resources Management Plan as regulated in section 10-8-11 Environmental Overlay District chapter of this ordinance.

b. Impervious Surface: A City of Burnsville Impervious Surface Worksheet must be submitted with all planning development applications or building permits or land activity that increases impervious surface to a level that exceeds twenty five percent (25%) of the lot. The worksheet will be reviewed by the City Engineer to ensure compliance with the ordinance.

1) Impervious surface coverage limits shall apply to all riparian lots and non-riparian lots where fifty percent (50%) or more of the lot area lies within the Shoreland Overlay District. If a lot is subject to the impervious surface coverage limits, the entire lot must comply with the limits.

2) Maximum impervious surface coverage of all lots is twenty five percent (25%) of the lot area, however, impervious surface may be increased as follows if the proposed development mitigates additional stormwater run-off to a level consistent with twenty five percent (25%) impervious surface coverage under a 1.5 inch rainfall design storm.

Zoning District	Permitted: Maximum Impervious Surface with Mitigation	Conditional Use Permit Required: Maximum Impervious Surface With Mitigation
R-1, R-1A and R-2	30%	N/A
R-3A, R-3B, R-3C and R-3D	30%	50%
B-1, B-2, B-3, B-4	30%	75%
I-1, I-2, I-3, GIM and GIH	30%	75%

6. **Special Provisions for Commercial, Industrial, Public/Semipublic, and Extractive Uses and Mining of Metallic Minerals and Peat.**

a. Standards for Commercial, Industrial, Public, and Semipublic Uses:

1) Surface water-oriented commercial uses and industrial, public, or semipublic uses with similar needs to have access to and use of public waters may be located on parcels or lots with frontage on public waters. Those uses with water-oriented needs must meet the following standards;

a) in addition to meeting impervious coverage limits, setbacks, and other zoning standards in this chapter, the uses must be designed to incorporate topographic and vegetative screening of parking areas and structures;

b) uses that require short-term watercraft mooring for patrons must centralize these facilities and design them to avoid obstructions of navigation and to be the minimum size necessary to meet the need; and

c) uses that depend on patrons arriving by watercraft may use signs and lighting to convey needed information to the public, subject to the following general standards:

(1) no advertising signs or supporting facilities for signs may be placed in or upon public waters. Signs conveying information or safety messages may be placed in or on public waters by a public authority or under a permit issued by the county sheriff;

(2) signs may be placed, when necessary, within the shore impact zone if they are designed and sized to be the minimum necessary to convey needed information, and to comply with the requirements of chapter 30 of this title. They must only convey the location and name of the establishment and the general types of goods or services available. The signs must not contain other detailed information such as product brands and prices, must not be located higher than ten feet (10') above the ground, and must not exceed thirty two (32) square feet in size. If illuminated by

artificial lights, the lights must be shielded or directed to prevent illumination out across public waters; and

(3) other outside lighting may be located within the shore impact zone or over public waters if it is used primarily to illuminate potential safety hazards and is shielded or otherwise directed to prevent direct illumination out across public waters. All outside lighting must comply with section 10-7-36 of this title. This does not preclude use of navigational lights.

2) Uses without water-oriented needs must be located on lots or parcels without public waters frontage, or, if located on lots or parcels with public waters frontage, must either be set back double the normal ordinary high water level setback or be substantially screened from view from the water by vegetation or topography, assuming summer, leaf-on conditions.

b. Extractive Use Standards:

1) Site Development and Restoration Plan: An extractive use site development and restoration plan must be developed, approved, and followed over the course of operation of the site. The plan must address dust, noise, possible pollutant discharges, hours and duration of operation, and anticipated vegetation and topographic alterations. It must also identify actions to be taken during operation to mitigate adverse environmental impacts, particularly erosion, and must clearly explain how the site will be rehabilitated after extractive activities end.

2) Setbacks for Processing Machinery. Processing machinery must be located consistent with setback standards for structures from ordinary high water levels of public waters and from bluffs.

c. Mining of Metallic Minerals and Peat: Mining of metallic minerals and peat, as defined in Minnesota Statutes, sections 93.44 to 93.51, may be allowed as an interim use provided the provisions of Minnesota Statutes, sections 93.44 to 93.51, and chapter 9 of this title are satisfied.

7. **Conditional and Interim Uses:** Conditional and interim uses allowable within shoreland areas shall be subject to the review and approval procedures, and criteria and conditions for review of conditional and interim uses established in sections 10-5-5 and 10-5-5(A) of this title. The following additional evaluation criteria and conditions apply within shoreland areas:

a. Evaluation Criteria: A thorough evaluation of the waterbody and the topographic, vegetation, and soils conditions on the site must be made to ensure:

1) the prevention of soil erosion or other possible pollution of public waters, both during and after construction;

2) the visibility of structures and other facilities as viewed from public waters is limited;

3) the site is served by public water and sanitary sewer service; and

4) the types, uses, and numbers of watercraft that the project will generate are compatible in relation to the suitability of public waters to safely accommodate these watercraft.

b. Conditions Attached to Conditional and Interim Use Permits: The city council, upon consideration of the criteria listed above and the purposes of this chapter, shall attach such conditions to the issuance of the conditional and interim use permits as it deems necessary to fulfill the purposes of this chapter. Such conditions may include, but are not limited to, the following:

1) increased setbacks from the ordinary high water level;
2) limitations on the natural vegetation to be removed or the requirement that additional vegetation be planted; and

3) special provisions for the location, design, and use of structures, sewage treatment systems, watercraft launching and docking areas, and vehicle parking areas.

4) Buffer strips on riparian lots that run parallel to and extend landward from the OHWL, with an average width of no less than twenty feet (20’). The buffer strip must be planted with native vegetation as approved by the city, and must not be mowed, cut or fertilized. A pervious twenty foot (20’) wide, or twenty percent (20%) of the lot width at the shoreline (whichever is less) walkway or path may be established across the width of the buffer strip to allow access to a beach, dock or other amenity. If a beach is established landward of the OHWL, the buffer strip can be moved further landward to accommodate it.

8. **Water Supply and Sewage Treatment**:

a. Water Supply: Any public or private supply of water for domestic purposes must meet or exceed standards for water quality of the Minnesota Department of Health and the Minnesota Pollution Control Agency.

b. Sewage Treatment: Any premises used for human occupancy must be provided with an adequate method of sewage treatment, as follows:

1) Publicly-owned sewer systems must be used where available.

2) All private sewage treatment systems must meet or exceed the provisions of chapter 11 of this title and the Minnesota Pollution Control Agency's standards for individual sewage treatment systems contained in the document titled, "Individual Sewage Treatment Systems Standards, Chapter 7080", a copy of which is hereby adopted by reference and declared to be a part of this chapter.

3) On-site sewage treatment systems must be set back from the ordinary high water level in accordance with the setbacks contained in section 10-8-10(C)(1)(d) of this chapter.

4) All proposed sites for individual sewage treatment systems shall be evaluated in accordance with the following evaluation criteria. If the determination of a site's suitability cannot be made with publicly available,

existing information, it shall then be the responsibility of the applicant to provide sufficient soil borings and percolation tests from on-site field investigations.

Evaluation Criteria:

a) depth to the highest known or calculated ground water table or bedrock;

b) soil conditions, properties, and permeability;

c) slope; and

d) the existence of lowlands, local surface depressions, and rock outcrops;

5) Nonconforming sewage treatment systems shall be regulated and upgraded in accordance with section 10-8-10(D)(3) of this chapter.

(D) **Nonconformities:** Within shoreland areas, all legally established nonconformities as of May 20, 1996 (the date of this ordinance) may continue, but they shall be managed according to applicable state statutes and section 10-7-2 of this title. The use of nonconforming lots of record and the repair, replacement, maintenance, improvement, or expansion of nonconforming uses and structures in shoreland areas shall also be subject to the following: (Ord. 1196, 4-6-10)

1. When a nonconforming structure in the Shoreland District with less than fifty percent (50%) of the required setback from the water is destroyed by fire or other peril to greater than fifty percent (50%) of its estimated market value, as indicated in the records of the county assessor at the time of damage, the structure setback may be increased if practicable and reasonable conditions are placed upon a zoning or building permit to mitigate created impacts on the adjacent property or water body. (Ord. 1196, 4-6-10)

2. A nonconforming single lot of record located within a Shoreland District may be allowed as a building site without variance from lot size requirements, provided that: (Ord. 1196, 4-6-10)

a. all structure and septic system setback distance requirements can be met; (Ord. 1196, 4-6-10)

b. a Type 1 sewage treatment system consistent with Minnesota Rules, chapter 7080, can be installed or the lot is connected to a public sewer; (Ord. 1196, 4-6-10)

c. the impervious surface coverage does not exceed the impervious surface coverage identified in section 10-8-10(C)5 of this chapter; and (Ord. 1196, 4-6-10)

d. the use is permitted in the underlying zoning district. (Ord. 1196, 4-6-10)

3. For all Shoreland Districts except said districts surrounding Recreational Development Lakes, if in a group of two (2) or more contiguous lots of record under a common ownership, an individual lot must be considered as a separate parcel of land for the purpose of sale or development, if it meets the following requirements: (Ord. 1196, 4-6-10)

a. the lot must be at least sixty six percent (66%) of the dimensional standards for the lot width and lot size for the Shoreland classification consistent with section 10-8-10(C) of this chapter; (Ord. 1196, 4-6-10)

b. the lot must be connected to a public sewer, if available, or must be suitable for the installation of a Type 1 sewage treatment system consistent with Minnesota Rules, chapter 7080 and city controls; (Ord. 1196, 4-6-10)

c. the impervious surface coverage must not exceed twenty five percent (25%) of each lot; and (Ord. 1196, 4-6-10)

d. development of the lot must be consistent with the comprehensive plan. (Ord. 1196, 4-6-10)

4. Contiguous lots under the same ownership as of January 1, 2004 within the shoreland area of **Recreational Development Lakes** may be considered as separate parcels of land for the purposes of sale or development if they meet all of the following criteria:

a. The average lot area, as measured above the OHWL, of the contiguous lots meets or exceeds twelve thousand (12,000) square feet.

b. Each lot is at least seventy five feet (75') wide as measured at the OHWL and building setback line.

c. Impervious surface coverage of the lots does not exceed twenty five percent (25%) or thirty percent (30%) with mitigation through the means of a twenty foot (20') buffer of native vegetation along shore.

d. No principle structures are located within the shore impact zone.

5. A lot subject to paragraph (D)3 not meeting the requirements of paragraph (D)3 must be combined with the one (1) or more contiguous lots so they equal one (1) or more conforming lots as much as possible. (Ord. 1196, 4-6-10)

6. Notwithstanding paragraph (D)3, contiguous nonconforming lots of record in Shoreland Districts under common ownership must be able to be sold or purchased individually if each lot contained a habitable residential dwelling at the time the lots came under common ownership and the lots are suitable for, or served by, a sewage treatment system consistent with the requirements of MN Statutes §115.55 and Minnesota Rules, chapter 7080 (Subsurface Sewage Treatment Systems), or connected to a public sewer. (Ord. 1196, 4-6-10)

7. In evaluating all variances, zoning and building permit applications, or conditional use requests, the property owner shall be required to address, when appropriate, storm water runoff management, reducing impervious surfaces, increasing setback, restoration of wetlands, vegetative buffers, sewage treatment and water supply capabilities, and other conservation-designed actions. (Ord. 1196, 4-6-10)

8. A portion of a conforming lot may be separated from an existing parcel as long as the remainder of the existing parcel meets the lot size and sewage treatment requirements of the zoning district of a new lot and the newly created parcel is combined with an adjacent parcel. (Ord. 1196, 4-6-10)

9. **Additions/Expansions to Nonconforming Structures:**

a. All additions or expansions to the outside dimensions of an existing nonconforming structure must meet the setback, height, and other requirements of section 10-8-10(C) of this chapter. Any deviation from these requirements must be authorized by a variance pursuant to section 10-8-10(A)(3) and 10-5-4.

b. Deck additions may be allowed without a variance to a structure not meeting the required setback from the ordinary high water level if all of the following criteria and standards are met:

1) the structure existed on the date the structure setbacks were established;

2) a thorough evaluation of the property and structure reveals no reasonable location for a deck meeting or exceeding the existing ordinary high water level setback of the structure;

3) the deck encroachment toward the ordinary high water level does not exceed fifteen percent (15%) of the existing setback of the structure from the ordinary high water level or does not encroach closer than thirty feet (30'), whichever is more restrictive; and

4) the deck is constructed primarily of wood, and is not roofed or screened.

10. **Nonconforming Sewage Treatment Systems:**

a. A sewage treatment system not meeting the requirements of section 10-8-10(C)(8) of this chapter shall be considered to be nonconforming and must be upgraded, at a minimum, at any time a permit or variance of any type is required for any improvement on, or use of, the property. For the purposes of this provision, a sewage treatment system shall not be considered nonconforming if the only deficiency is the sewage treatment system's improper setback from the ordinary high water level.

b. The city council has by formal resolution notified the commissioner of its program to identify nonconforming sewage treatment systems. The City of Burnsville will require upgrading or replacement of any nonconforming system identified by this program within a reasonable period of time which will not exceed two (2) years. Sewage systems that do not meet the requirements of section 10-8-10(C)(8) of this chapter and the requirements of chapter 11 of this title shall be considered to be nonconforming. Systems using cesspools, leaching pits, seepage pits, or other deep disposal methods, or systems with less soil treatment area separation above groundwater than required by the Minnesota Pollution Control Agency's chapter 7080 for design of on-site sewage treatment systems, shall also be considered nonconforming.

(E) **Subdivision/Platting Provisions:**

1. **Land Suitability:** Each lot created through subdivision must be suitable in its natural state for the proposed use with minimal alteration. Suitability analysis by the city shall consider susceptibility to flooding, existence of wetlands, soil and rock formations with severe limitations for development, severe erosion potential, steep topography, inadequate water supply or sewage treatment capabilities, near-shore aquatic conditions unsuitable for water-based recreation, important fish and wildlife habitat, presence of significant historic sites, or any other feature of the natural land likely to be harmful to the health, safety, or welfare of future residents of the proposed subdivision or of the community.

2. **Consistency with Other Controls:** Subdivisions must conform to all official controls of the city. A subdivision will not be approved where a later variance from one (1) or more standards in official controls would be needed to use the lots for their intended purpose. In areas not served by publicly owned sewer and water systems, a subdivision will not be approved unless domestic water supply is available and a sewage treatment system consistent with sections 10-8-10(C)(2) and 10-8-10(C)(8) of this chapter can be provided for every lot. Each lot shall meet the minimum lot size and dimensional requirements of section 10-8-10(C)(1) of this chapter, including at least a minimum contiguous lawn area, that is free of limiting factors sufficient for the construction of two standard soil treatment systems. Lots that would require use of holding tanks must not be approved.

3. **Information Requirements:** Sufficient information must be submitted by the applicant for the city to make a determination of land suitability. The information shall include at least the following:

a. topographic contours at ten-foot (10') intervals or less from United States Geological Survey maps or more accurate sources, showing limiting site characteristics;

b. the surface water features required in Minnesota Statutes, section 505.02, subdivision 1, to be shown on plats, obtained from United States Geological Survey quadrangle topographic maps or more accurate sources;

c. adequate soils information to determine suitability for building and on-site sewage treatment capabilities for every lot from the most current existing sources or from field investigations such as soil borings, percolation tests, or other methods;

d. information regarding adequacy of domestic water supply; extent of anticipated vegetation and topographic alterations; near-shore aquatic conditions, including depths, types of bottom sediments, and aquatic vegetation; and proposed methods for controlling stormwater runoff and erosion, both during and after construction activities;

e. location of one hundred (100) year flood plain areas and floodway districts from existing adopted maps or data; and

f. a line or contour representing the ordinary high water level, the "toe" and the "top" of bluffs, and the minimum building setback distances from the top of the bluff and the lake or stream.

4. **Dedications:** When a land or easement dedication is a condition of subdivision approval, the approval must provide easements over natural drainage or ponding areas for management of stormwater and significant wetlands.

5. **Platting:** All subdivisions that create five (5) or more lots or parcels that are two and one half (2-1/2) acres or less in size shall be processed as a plat in accordance with Minnesota Statutes, Chapter 505. No permit for construction of buildings or sewage treatment systems shall be issued for lots created after this Ordinance was adopted unless the lot was approved as part of a formal subdivision.

10-8-11: **STORMWATER MANAGEMENT OVERLAY DISTRICT STANDARDS**: No development shall be allowed or development permit issued within the City of Burnsville

until the council finds that the development will comply with the following:

(A) The land development shall comply with the Water Resources Management Plan adopted by the city council in 2002 and any future amendments. The city engineer shall determine whether the development meets the goals, policy and design standards of the adopted plan. Prior to development of land, storm sewer assessment fees must be paid in accordance with fee policies adopted by the city council.

10-8-12: **OTHER GENERAL CONDITIONS:** Any permit required in this chapter may be issued subject to compliance with reasonable conditions which are specifically set forth in the permit and are necessary to insure compliance with the requirements contained in this title. Such conditions may, in addition to other conditions, limit the size, kind or character of the proposed work, require the construction of other structures, require replacement of vegetation, establish required monitoring procedures and maintenance activity, stage the work over time, require alteration of the site design to ensure buffering, require the provision of a cash security or letter of credit, or require the conveyance to the city or another public entity of certain lands or interest therein. The dimensional requirements of the underlying zoning district(s) may be modified in furtherance of the purposes of this chapter by expressed conditions contained in the permit. (Ord. 1196, 4-6-10)

10-8-13: **TIME OF PERMIT; EXTENSIONS; RENEWALS:**

(A) The city, its agents, employees, and officers may inspect the work authorized under any permit required in this chapter, including periodic and final inspections, to determine compliance with the requirements and conditions of the permit and this chapter.

(B) **Notice of Completion:** A permittee shall notify the city manager or designee in writing when they have finished the work. No work shall be deemed to have been completed until approved in writing by the city manager or designee following such written notification.

(C) **Inspection:** The city manager may cause inspections of the work to be made periodically during the course thereof by himself or a member of the engineering staff and shall cause a final inspection to be made following the completion of the work. The permittee shall assist the director in making inspections.

10-8-14: **RESPONSIBILITY; EFFECT:**

(A) **Responsibility:** Neither the issuance of a permit nor compliance with the conditions thereof, nor compliance with the provisions of this title shall relieve any person from any responsibility otherwise imposed by law for damage to persons or property; nor shall the issuance of any permit hereunder serve to impose liability on the city or its officers or employees for injury or damage to persons or property. A permit issued pursuant to this title shall not relieve the permittee of the responsibility of complying with any other requirements established by law, regulation or ordinance.

(B) **Inter-Community Review:** Where any proposed development or action abuts an adjacent municipality, that municipality shall be notified of the proposed development or action and given the opportunity to review and comment on the proposal. Such notification shall be mailed to the city clerk of the abutting municipality.

[3-17-97 Amd. Sec. 2, 3(A),5 Ord. 657]; [9-21-98 Amd. Sec. 1, 2, 3, 9, 11, 12 Ord. 732]; [5-17-99 Amd. Sec. 5(D) (F) (H) (I) (J) Ord. 742]; [7-16-01 Amd. Sec. 8, 8(A1) (D) (J) (K) (L) Ord. 825]; [11-18-02 Amd. Sec. 9 (B) Ord. 864]; [12-2-02 Amd. Sec. 1(C) & (D), Sec. 3, Sec. 4(A), Sec.11, 12, 13, 14 Ord 865]; [6-2-03 Amd. Sec. 2, 10 (A), (C) Ord. 884]; [1-20-04 Amd. Sec. 10 (D) (1) (c) Ord. 906]; [2-21-06 Amd. Sec. 9 (D) Ord. 1016]; [5-15-06 Amd. Sec. 9 (E) Ord. 1030]; [5-19-09 Amd. Sec. 6 (A thru D) & Sec. 8(A thru I) Ord. 1162]; [5-19-09 Amd. Sec. 8 (A) thru (0) Ord. 1163]; [4-6-10 Amd. Secs. 9(B, D), 10(C & D), 12 Ord. 1196]

CHAPTER 9

LAND RECLAMATION, MINING, SOIL PROCESSING, AND GENERAL EARTH WORK

SECTION:

10-9-1: Land Reclamation, Mining and Soil Processing; Interim Use Permit
10-9-2: Earth Work
10-9-3: Minimum Requirements

10-9-1: LAND RECLAMATION, MINING AND SOIL PROCESSING; INTERIM USE PERMIT:

(A) No person shall open, operate or maintain any land reclamation, mining and/or soil processing use without an interim use permit authorizing such operation, unless such use involves earth work as defined under section 10-9-2. In the review of proposed permits, an agreement shall be prepared and executed holding the city free and harmless from any suit or claims for damage resulting from the negligent excavation, removal or storage of rock, sand, dirt, gravel, clay or other material.

(B) An interim use permit shall be issued only after a public hearing by the planning commission and approval by the city council. In this review and approval process, the planning commission may recommend and the city council shall establish the term of the permit and the dates for its periodic review, renewal, and/or termination consistent with section 10-5-5(A) of the zoning ordinance.

(C) **Termination:** An Interim Use Permit shall terminate upon the occurrence of any of the following events; whichever first occurs:

1. The date stated in the permit.

2. A violation of conditions under which the permit was issued.

3. A change in the city's zoning regulations which renders the use nonconforming.

(D) **Interim Use Permit Application:** The application for an interim use permit shall be consistent with the requirements of 10-5-5A and shall contain the following:

1. A legal description of the lands from which it is proposed to remove earth and where it is to be deposited or processed.

2. The name and address of the applicant and of the owner(s) of the land.

3. Names and addresses of all adjacent land owners within a three hundred fifty foot (350') radius of the project, typed into list form and on two (2) sets of mailing labels.

4. Copies of any portions of agreements indicating the duration of any lease if applicable.

5. The purpose of the removal.

6. The estimated time required to complete the removal.

7. The highways, streets or other public ways within the city upon and along which the material removed shall be transported.

8. The plan of operation, including soil processing (any operation other than direct mining and removal, and not specifically addressed in 10-9-2), nature of the processing and equipment, the area, depth and grade of such processing, the estimated quantity of earth deposits to be added to or removed from the premises, location of the plant, source of water, disposal of water and reuse of water. In the event that water is used in the operation of a pit, approval from the state Department of Natural Resources and other appropriate state or federal agencies shall be obtained as to the type, location and depth of such well and contained with such application.

9. A development plan of the property where the mining is to occur. Such plan shall contain site analysis information such as trees, depth of topsoil, soil type, adjacent and on-site buildings and land uses, a map or plan of the proposed excavation showing the confines or limits thereof, together with the proposed finished elevations based on sea level readings. Elevations and percent slope within one hundred feet (100') beyond the perimeter of the excavation and other such information necessary to analyze the site shall be provided by the applicant. United States Geological Survey data shall be used for all topographic mapping where feasible.

10. A Comprehensive Restoration and End Use Plan: These plans shall show suitable provisions for the restoration of the excavated area to a useable condition compatible with adjacent properties. Such plans should include anticipated final elevations throughout the site area, a landscape plan showing the replacement of ground covers, shrubs, trees, etc., and a plan for the return of subsoil and topsoil. Where the city council deems it practical and necessary, such plan shall include adjoining related areas where excavations have previously been made and remain under the control of the same owner, or under the control of the same person other than the owner to whom the permit is to be issued.

(E) **Special Requirements:** As part of the original or periodic review of an interim use permit, the council may impose one or more of the following restrictions and requirements, either as a prerequisite to the granting of such permit or after such permit has been granted:

1. The owner or applicant shall properly fence any pit so that such pit or any standing waters therein may not be a hazard to the general public or the applicant or owner shall slope the banks and otherwise guard and keep any pit in such condition as not to be dangerous to persons or property; provided that the maximum slopes shall be as follows: a three foot horizontal to one foot vertical (3' to 1') slope must be regraded prior to the end of each season's operations or after the pit has ceased to be operated for a period of thirty (30) days or more.

2. The owner or applicant shall prevent water runoff damage, including erosion on adjacent property and the deposit of material by water runoff on adjacent property.

3. The applicant or owner shall submit a landscape screening plan consisting of suitable trees which shall be placed to eliminate unsightly view of the operations.

4. On completion of the operation, the applicant shall properly drain and level off any pit and restore the contour of the site of the operation to a condition as indicated on the end use plan or to such contour as recommended by the city engineer.

5. Upon closing operations or leaving any particular excavation or area in the site, the applicant shall regrade the area which he has excavated or disturbed in order that no slopes are steeper than three feet horizontal to one foot vertical (3' to 1').

6. The operation of the gravel pit shall not affect the safety or quantity of any well within one-quarter (¼) mile from the pit. Proof that the hydraulic or static effect is not detrimental to any such well shall be provided by the applicant.

7. The council may, at its discretion, attach such other additional conditions to such permits as they may deem necessary in the interest of the public health, welfare and safety of the community.

8. Within a period of three (3) months after the termination of a sand and gravel operation, or within three (3) months after abandonment of such operation for a period of six (6) months, or within three (3) months after the expiration of a sand and gravel permit, the operator or owner shall dismantle or remove buildings and structures incidental to such operation and shall grade the site to the specifications of the final grade plan, as well as complete all reclamation on the site as proposed by the reclamation plan.

(F) **Inspections:** The council may require periodic inspections of operations as a condition of approval.

(G) **Security Requirement:** The council shall require the applicant, owner or user of the property on which the proposed operation is located, to post a letter of credit acceptable to the city or cash escrow in such form and sum as the council shall determine, conditioned to pay the city the extraordinary cost and expense of repairing, from time to time, any highways, streets or other public ways where such repair work is made necessary by the special burden resulting from the hauling and removal of material from any operation; the amount of such cost and expense to be determined by the city engineer; and conditioned further to comply with all the requirements of this chapter, and the particular permit, and to pay any expense the city may incur by having to do anything which the applicant fails to do to comply with the terms of the conditional use permit.

(H) **Insurance Requirement:** The contractor or lessor of the land involved shall secure and maintain such insurances from an insurance company acceptable to the city and authorized to write casualty insurance in the state as will protect himself, his agents and the city from claims for bodily injury, death or property damage which may arise from operations under a gravel permit issued under this chapter.

A gravel contractor shall not commence work until he has obtained all insurance required under this section and shall have filed a certificate of insurance or the certified copy of an insurance policy within the city. Each insurance policy shall contain a clause providing that it shall not be canceled by the insurance company without ten (10) days written notice to the city of intention to cancel. The amounts of such insurance shall not be less than the following:

1. Workmen's compensation and employer's liability which shall be secured and maintained as required by the state.

2. Public liability, personal injury and property damage:

a. Injury or death of one person; two hundred fifty thousand dollars ($250,000.00).

b. Injury to more than one person in a single accident; five hundred thousand dollars ($500,000.00).

c. Property damage; two hundred thousand dollars ($200,000.00).

3. Automobile and truck public liability, personal injury and property damage, including owned and non-owned vehicles:

a. Injury or death of one person; two hundred fifty thousand dollars ($250,000.00).

b. Injury to more than one person in a single accident; five hundred thousand dollars ($500,000.00).

c. Property damage; one hundred thousand dollars ($100,000.00).

10-9-2: **EARTH WORK:**

(A) **Intent:** Earth work not specifically associated either with land reclamation, mining or soil processing as a long-term operation or with the operation of a business, shall be regulated under this section.

(B) **Scope:** Earth work which involves ninety (90) or more cubic yards of material for the excavation, filling, grading, shaping, moving, or general soil disruptions for the purpose of making improvements to the property or facilitating development of the property is allowed when reviewed by the development review committee, found to be in keeping with the goals, policies, and general intent of the city, and found to be in compliance with all applicable city, county, state, or federal regulations. Earth work which involves less than ninety (90) cubic yards for excavation, filling, grading, shaping, moving, or general soil disruptions is allowed by the city without review or a permit when all work is performed consistent with city goals and policies.

(C) **Application for Permit:** Prior to the start of any earth work involving ninety (90) or more cubic yards of material, approval is required by the development review committee, and an earth work permit must be issued by the protective inspections department. A woodland identification survey[1] must be completed as required in section 10-8-9 of this chapter. Erosion and sediment control information must be provided pursuant to section 10-8-8 of this chapter.

(D) **Issuance of Permit:** The development review committee may authorize the issuance of an earth work permit if the requirements of this section are met and the applicant submits surety for the following work:

1. Construction or improvement of a roadway.
2. Excavation or filling in accordance with an approved site plan or preliminary plat.
3. Excavation or filling for the purpose of preparing land which in its original condition cannot be developed according to the designated zoning.
4. Decorative landscaping when the reshaping or contouring of land does not disrupt surrounding properties or create drainage problems.

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1. See Section 10-8-9 of this Title.

(E) **Security:** Prior to the issuance of an earth work permit, the owner shall supply the city with security in an amount to be set by city policy number 2.050.

(F) **Completion Cleanup:** Upon completion of all earth work, all excess soil, paving materials, sticks, stones, trees, stumps, and any other debris shall be promptly removed.

(G) **Compliance:** The development review committee cannot authorize the issuance of an earth work permit to any owner if the proposed plans cannot or do not comply with current environmental requirements, i.e. shoreland, woodland, severe slope, wetlands regulations or any other pertinent city, state or federal requirements, until the plans have been reviewed and approved by the city and all other applicable regulating authorities.

10-9-3: **MINIMUM REQUIREMENTS:** The following minimum requirements shall apply to all land reclamation, mining, and soil processing operations, and all earth work operations that require a permit under sections 10-9-1 and 10-9-2:

(A) The outer limit or edge of any mining operation shall not be closer than one hundred feet (100') to any abutting property line. Soil excavation may occur within 100 feet of any property line when the proposed grading plan has been approved by the city engineer.

(B) Finished slopes or any edge contiguous to property owned by others shall not be less than a ratio of three feet horizontal to one foot vertical (3' to 1'), or as approved by the appropriate regulating authority.

(C) All trees, stumps and debris must be disposed of within thirty (30) days in a manner which complies with current regulations and which is consistent with the proposed end use plan.

(D) No mining operations shall be closer than one hundred feet (100') to the right-of-way line of any existing street, road or highway, except upon approval by the city council.

(E) The operator shall be responsible for lowering any well so as to provide potable water for each individual whose well is affected by the proposed operations.

(F) All rocks which are not crushed and which are one foot (1') or larger in size shall be removed from the site, buried after termination of operations, or used on site as a landscape feature.

(G) Any storm or surface water cast into the excavation shall be the responsibility of the operator.

(H) The operator shall operate and maintain all equipment in such a manner as to minimize air pollution. Any emission which can cause any damage to health, animals or vegetation or other forms of property or which can cause an excessive silting at any point or any emission of any solid or liquid particles in concentrations exceeding air quality regulations shall be prohibited.

(I) Upon termination of the operation, any pit or excavation created shall be regraded or modified according to the end use plan.

(J) All excavated materials shall be removed from the premises especially within highways, streets or other public ways as the council shall order and direct.

(K) No noise resulting from the excavation use shall exceed the most current noise control regulations.

(L) Any vibration resulting in any combination of amplitude and frequencies beyond the "safe" range of the most current standards of the United States Bureau of Mines for any equipment or structure shall be prohibited.

(M) The slope of banks during the excavation of material shall be kept in such a condition so as not to be dangerous because of overhangs, sliding or caving banks. Such dangerous conditions shall be declared to be a nuisance and the city may give notice to the operator or owner to abate the same.

(N) The removal of natural vegetation shall be restricted to prevent erosion into water bodies, to consume nutrients in the soil and to preserve shoreland aesthetics. Removal shall be restricted within a strip paralleling a lakeshore, river or stream and shall extend inland a minimum distance of one hundred feet (100') from the normal high water mark as determined by the point where the natural vegetation changes from predominately aquatic to predominately terrestrial. The owner or operator shall be required to comply with the environmental elements established in chapter 8 of the zoning ordinance.

(O) The hours of operation shall be limited from seven o'clock (7:00) a.m. to seven o'clock (7:00) p.m. daily, provided that no excavation, crushing, processing or trucking shall be conducted on Saturdays, Sundays or legal holidays with the exception of Columbus Day and Veterans Day except upon approval by the city council. Certain activities such as loading, maintenance and repair of equipment and hauling by barge may be allowed; provided that these activities do not cause undue noise or disturbances to adjoining property or facilities and that these activities are specified in the operations plans and approved by the municipality at the time of issuance of the permit.

(P) All fill material shall be clean, compactable fill, and shall **not** contain refuse, construction debris, or any other items (tires, barrels, furniture, etc.) not found in soils. The fill material must be approved by the city engineer and protective inspections division if the fill area will be used for a road or building construction site.

(Q) Any of these provisions may be waived by the city council when determined that a complete and proper showing in the plan of operation and/or end use plan that other provisions would be more suitable.

[7-16-01 Amd. Sec. 2(E) Ord. 825]; [5-19-09 Amd. Sec. 2 Ord. 1162]; [4-6-2010 Amd. Sec. 1(G) Ord. 1196];

CHAPTER 10

FLOOD PLAIN REGULATIONS

SECTION:

10-10- 1: Statutory Authorization, Findings of Fact and Purpose
10-10- 2: General Provisions
10-10- 3: Establishment of Zoning Districts
10-10- 4: Floodway District (FW)
10-10- 5: Flood Fringe District (FF)
10-10- 6: General Flood Plain District (GFP)
10-10- 7: Subdivisions
10-10- 8: Public Utilities, Railroads, Roads and Bridges
10-10- 9: Manufactured Homes and Manufactured Home Parks and Placement of Travel Trailers and Travel Vehicles
10-10-10: Administration
10-10-11: Nonconforming Uses
10-10-12: Penalties for Violation
10-10-13: Amendments

10-10-1: STATUTORY AUTHORIZATION, FINDINGS OF FACT AND PURPOSE:

(A) **Statutory Authorization:** Minnesota Statutes chapter 103F delegates the responsibility to local governmental units to adopt regulations designed to minimize flood losses.

(B) **Findings of Fact:**

1. The flood hazard areas of the City of Burnsville (the city) are subject to periodic inundation which results in potential loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

2. Methods Used to Analyze Flood Hazards: This chapter is based upon a reasonable method of analyzing flood hazards which is consistent with the standards established by the Minnesota Department of Natural Resources.

(C) **Statement of Purpose:** The purpose of this chapter is to promote the public health, safety and general welfare and to minimize those losses described in section 10-10-1(B)1 by provisions contained herein.

10-10-2: GENERAL PROVISIONS:

(A) **Land to Which Title Applies:** This Chapter shall apply to all land within the City shown on the official Zoning Map as being located within the boundaries of the floodway, flood fringe, and general flood plain districts by the Flood Insurance Study for the City as an unnumbered A Zone.

(B) **Establishment of Official Zoning Map:** The official Zoning Map, together with all explanatory matter thereon, and declared thereto is hereby adopted by reference and declared to be a part of this Chapter. The Official Map shall be on file in the office of the City Planner. The Flood Insurance Study for the City prepared by the Federal Insurance Administration, the Flood

Boundary and Floodway Map, and the Flood Insurance Rate Map therein dated September 1, 1977, are attached to and made part of the Official Map and this chapter.

(C) **Rule of Interpretation of District Boundaries:** The boundaries of the zoning districts shall be determined by scaling distances on the Official Map. Where interpretation is needed as to the exact location of the boundaries of the district as shown on the Official Map, as for example where there appears to be a conflict between a mapped boundary and actual field conditions, the city council shall make the necessary interpretation based on elevations on the applicable water surface profile. The person contesting the location of the district boundary shall be given a reasonable opportunity to present his case and to submit technical evidence if he so desires.

(D) **Warning and Disclaimer of Liability:** This chapter does not imply that areas outside the flood plain districts or land uses permitted within such districts will be free from flooding or flood damages. This chapter shall not create liability on the part of the city or any officer or employee thereof for any flood damages that result from reliance on this title or any administrative decision made thereunder.

(E) **Interpretation:** In their interpretation and application, the provisions of this chapter shall be held to be minimum requirements and shall be liberally construed in favor of the city and shall not be deemed a limitation or repeal of any other powers granted by state statutes.

(F) **Abrogation and Greater Restrictions:** It is not intended by this chapter to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this chapter imposes greater restrictions, the provisions of this chapter shall prevail. All other ordinances less restrictive than this chapter are hereby repealed to the extent of the inconsistency only.

(G) **Definitions:** Unless specifically defined below, words or phrases used in this chapter shall be interpreted so as to give them the same meaning as they have in common usage and so as to give this chapter its most reasonable application.

BASEMENT: Any area of a structure, including crawl spaces, having its floor or base subgrade (below ground level) on all four (4) sides, regardless of the depth of excavation below ground level. This definition of basement is for interpreting and administering only the provisions of this chapter dealing with flood plain regulations and is distinct from the definition that applies to the other chapters of this title.

EQUAL DEGREE OF ENCROACHMENT: A method of determining the location of floodway boundaries so that flood plain lands on both sides of a stream are capable of conveying a proportionate share of flood flows.

FLOOD: A temporary increase in the flow or stage of a stream or in the stage of a wetland or lake that results in the inundation of normally dry areas.

FLOOD FREQUENCY: The frequency for which it is expected that a specific flood stage or discharge may be equalled or exceeded.

FLOOD FRINGE: That portion of the flood plain outside of the floodway. Flood fringe is synonymous with the term "floodway fringe" used in the Flood Insurance Study for the city.

FLOOD PLAIN: The beds proper and the areas adjoining a wetland, lake, or watercourse which have been or hereafter may be covered by the regional flood.

FLOODPROOFING: A combination of structural provisions, changes, or adjustments to properties and structures subject to flooding, primarily for the reduction or elimination of flood damages.

FLOODWAY: The bed of a wetland or lake and the channel of a watercourse and those portions of the adjoining flood plain which are reasonably required to carry or store the regional flood discharge.

OBSTRUCTION: Any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel modification, culvert, building, wire, fence, stockpile, refuse, fill, structure, or matter in, along, across, or projecting into any channel, watercourse, or regulatory flood plain which may impede, retard, or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water.

PRINCIPLE STRUCTURES: All structures that are not accessory structures.

REACH: A hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by a natural or manmade obstruction. In an urban area, the segment of a stream or river between two (2) consecutive bridge crossings would most typically constitute a reach.

REGIONAL FLOOD: A flood which is representative of large floods known to have occurred generally in Minnesota and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of the 100-year recurrence interval. Regional flood is synonymous with the term "base flood" used in the Flood Insurance Study.

REGULATORY FLOOD PROTECTION ELEVATION: The Regulatory Flood Protection Elevation shall be an elevation no lower than one foot (1') above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the flood plain that result from designation of a floodway.

STRUCTURE: Anything constructed or erected on the ground or attached to the ground or on-site utilities, including, but not limited to, buildings, factories, sheds, detached garages, cabins, manufactured homes, travel trailers/vehicles not meeting the exemption criteria specified in subsection 10-10-9(B), and other similar items.

VARIANCE: A modification of a specific permitted development standard required in an official control, including this chapter, to allow an alternative development standard not stated as acceptable in the official control, but only as applied to a particular property for the purpose of alleviating a hardship, practical difficulty, or unique circumstance as defined and elaborated upon in a the city's respective planning and zoning enabling legislation. This definition of a variance is for interpreting and administering only the provisions of this chapter dealing with flood plain regulations and is distinct from the definition that applies to the other chapters of this Title.

10-10-3: **ESTABLISHMENT OF ZONING DISTRICTS:** The flood plain areas are hereby divided into three (3) districts; Floodway (FW) Districts, Flood Fringe (FF) Districts, and General Flood Plain Districts (GFP) Districts. The boundaries of these districts shall be shown on the official Map.

(A) **Floodway District:** The floodway district shall include those areas designated as floodway in the Flood Boundary and Floodway Map.

(B) **Flood Fringe District:** The flood fringe district shall include those areas designated as floodway fringe on the Flood Boundary and Floodway Map.

(C) **General Flood Plain District**: The general flood plain district shall include those areas designated as unnumbered A Zones on the Flood Insurance Rate Map.

(D) **Compliance:** No new structure or land shall hereafter be used and no structure shall be located, extended, converted, or structurally altered without full compliance with the terms of this chapter and other applicable regulations which apply to uses within the jurisdiction of this chapter.

Within the floodway, flood fringe, and general flood plain districts, all uses not listed as permitted, conditional, or interim uses in sections 10-10-4, 10-10-5, and 10-10-6, respectively, shall be prohibited. In addition, the following provisions shall apply to all uses and structures within the floodway, flood fringe, and general flood plain districts:

1. New and replacement manufactured homes are subject to the general provisions of this chapter and specifically section 10-10-9;

2. Modifications, additions, structural alterations, or repairs after damage to existing nonconforming structures and nonconforming uses of structures or land are regulated by the general provisions of this title and specifically section 10-10-11; and

3. As-built elevations for elevated or floodproofed structures must be certified by ground surveys, and floodproofing techniques must be designed and certified by a registered professional engineer or architect as specified in the general provisions of this title and specifically as stated in section 10-10-10.

10-10-4: **FLOODWAY DISTRICT (FW):**

(A) **Permitted Uses:** The following uses have a low flood potential and shall be permitted within the floodway district to the extent that they are allowed in the base zoning district and are not prohibited by this Chapter or any other ordinance, and provided they do not require structures, fill, or storage of material and equipment. In addition, no use shall adversely affect the capacity of the channels or floodways of any tributary to the main stream, drainage ditch, or any other drainage facility or system.

1. Agricultural: General farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming and wild crop harvesting.

2. Industrial: Yards, loading areas and parking areas.

3. Private and Public Recreational Uses: Golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, hunting and fishing areas, and recreational trails.

4. Residential Uses: Lawns, gardens, parking areas and play areas.

5. Commercial: Yards, loading areas and parking areas.

(B) **Conditional and Interim Uses:** The following open space uses which require only accessory structures, or fill, or storage of materials or equipment may be permitted in the floodway district by conditional or interim use permit if allowed as such in the base zoning district.

1. Uses or structures accessory to the permitted conditional or interim uses in the floodway district.

2. Extraction of sand, gravel, and other materials.

3. Marinas, boat rentals, docks, piers, wharves, and water control structures.

4. Railroads, streets, bridges, utility transmission lines, and pipelines.

5. Storage yards for equipment, machinery, or materials.

6. Placement of fill, subject to the applicable standards of subsection 10-10-4(C)1 and (C)2.

7. Travel trailers and travel vehicles either on individual lots of record or in existing or new campgrounds, subject to the exemptions and provisions of subsection 10-10-9(B) of this Chapter.

8. Structural works for flood control such as levees, dikes, and floodwalls constructed to any height where the intent is to protect agricultural crops for a frequency flood event equal to or less than the 10-year frequency flood.

(C) **Standards for Floodway Conditional and Interim Uses:**

1. No structure (temporary or permanent), fill (including fill for roads and levees), deposit, obstruction, storage of materials or equipment, or other uses may be allowed as conditional or interim uses which, acting alone or in combination with existing or anticipated future uses, will cause any increase in the stage of the 100-year or regional flood or cause an increase in flood damages in the reach or reaches affected.

2. Fill:

a. Fill, dredge spoil, or other similar materials shall be protected against erosion by rip-rap, vegetative cover, bulkheading, or other acceptable method.

b. Dredge spoil sites and sand and gravel operations shall not be allowed in the floodway unless a long-term site development plan which includes an erosion/ sedimentation element in the plan is submitted.

c. As an alternative, and consistent with subsection (C)2b immediately above, dredge spoil disposal and sand and gravel operations may allow temporary, on-site storage of fill or other materials which would have caused an increase to the stage of the 100-year or regional flood, but only after the City Council has received and approved an appropriate plan which assures the removal of materials from the floodway based upon the flood warning time available. The conditional or interim use permit allowing such use must be title registered with the property in the office of the County Recorder.

3. Accessory Structures:

a. Accessory structures shall not be designed for human habitation.

b. Accessory structures, if permitted, shall be constructed and placed on the site so as to offer the minimum amount of obstruction to the flow of flood waters.

(1) Whenever possible, structures shall be constructed with the longitudinal axis parallel to the direction of flood flow; and

(2) So far as practicable, structures shall be placed approximately on the same flood flow lines as those of adjoining structures.

c. Accessory structures shall be elevated on fill or structurally dry floodproofed in accordance with the FP-1 floodproofing classifications in the State Building Code. As an alternative, an accessory structure may be floodproofed to the FP-3 or FP-4 floodproofing classification in the State Building Code provided the accessory structure constitutes a minimal investment, and does not exceed five hundred (500) square feet in size. If the accessory structure is a detached garage, it must be used solely for parking of vehicles and limited storage. All floodproofed accessory structures must meet the following additional standards, as appropriate:

(1) The structure must be adequately anchored to prevent flotation, collapse, or lateral movement of the structure and shall be designed to equalize hydrostatic flood forces on exterior walls; and

(2) Any mechanical and utility equipment in the structure must be elevated to or above the regulatory flood protection elevation or properly floodproofed.

4. Storage of Material and Equipment:

a. The storage or processing of materials that during times of flooding are buoyant, flammable, or explosive, or could be injurious to human, animal, or plant life is prohibited.

b. Storage of other materials or equipment may be allowed if not subject to major damage by floods and if either firmly anchored to prevent flotation or readily removable from the area within the time available after a flood warning, in accordance with a plan approved by the city council.

5. Garbage and Solid Waste Disposal:

a. Garbage and solid waste disposal sites may not be located in floodway areas.

b. There shall be no further encroachment upon the floodway at existing sites.

6. Structural Works for Flood Control: Structural works for flood control such as dams, levees, dikes and flood walls which will change the course, current, or cross section of the waters shall be subject to the provisions of Minnesota Statutes, chapter 103G, and other applicable tstatutes. Community-wide structural works for flood control intended to remove areas from the regulatory flood plain shall not be allowed in the floodway.

7. A levee, dike, or floodwall constructed in the floodway shall not cause an increase to the 100-year or regional flood and the technical analysis must assume equal conveyance or storage loss on both sides of a stream.

10-10-5: **FLOOD FRINGE DISTRICT (FF):**

(A) **Permitted Uses:** The following uses shall be permitted uses within the flood fringe district to the extent that they are allowed in the base zoning district.

1. Any use permitted in subsection 10-10-4(A).

2. Any use permitted in the base zoning district, provided that residences and other principle and accessory structures are constructed on fill so that the basement floor, or first floor if there is no basement, is above the regulatory flood protection elevation. The finished fill elevation shall be not lower than one foot (1') below the regulatory flood protection elevation and shall extend at such elevation at least fifteen feet (15') beyond the limits of any structure or building erected thereon. Fill shall be compacted and the slopes shall be protected by rip-rap or vegetative covering.

3. As an alternative to elevation on fill, accessory structures that constitute a minimal investment and that do not exceed five hundred (500) square feet for the outside dimension at ground level may be internally floodproofed in accordance with subsection 10-10-4(C)3c.

4. The cumulative placement of fill where at any one time in excess of one thousand (1,000) cubic yards of fill is located on the parcel shall be allowable only as a conditional use, unless said fill is specifically intended to elevate a structure in accordance with subsection 10-10-5(A)2 above.

5. The storage of any materials or equipment shall be elevated on fill to the regulatory flood protection elevation.

6. The provisions of subsection 10-10-5(C) of this section shall apply.

(B) **Conditional and Interim Uses:** The following uses may be permitted in the flood fringe district by conditional or interim use permit if allowed as such in the base zoning district.

1. Any use permitted in the base zoning district as either a conditional or interim use.

2. Any structure that is not elevated on fill or floodproofed in accordance with subsection 10-10-5(A)2 or 10-10-5(A)3 or any land use that does not comply with the standards in subsection 10-10-5(A)4 or 10-10-5(A)5. An application for a conditional use permit shall be subject to the standards and criteria and evaluation procedures specified in this chapter.

3. Alternative elevation methods other than the use of fill may be utilized to elevate a structure's lowest floor above the regulatory flood protection elevation. These alternative methods may include the use of stilts, pilings, parallel walls, etc., or above-grade, enclosed areas such as crawl spaces or tuck-under garages. The base or floor of an enclosed area shall be considered above-grade and not a structure's basement or lowest floor if the enclosed area:

a. is above-grade on at least one side of the structure;

b. is designed to internally flood and is constructed with flood resistant materials; and

c. is used solely for parking of vehicles, building access, or storage. The above-noted alternative elevation methods are subject to the following additional standards:

(1) Design and Certification: The structure's design and as-built condition must be certified by a registered professional engineer or architect as being in compliance with the general design standards of the State Building Code and, specifically, that all electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities must be at or above the regulatory flood protection elevation or be designed to prevent flood water from entering or accumulating within these components during times of flooding.

(2) Specific Standards for Above-Grade, Enclosed Areas: Above-grade, fully enclosed areas such as crawl spaces or tuck-under garages must be designed to internally flood and the design plans must stipulate:

(a) The minimum area of openings in the walls where internal flooding is to be used as a floodproofing technique. When openings are placed in a structure's walls to provide for entry of flood waters to equalize pressures, the bottom of all openings shall be no higher than one foot (1') above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of flood waters.

(b) That the enclosed area will be designed of flood resistant materials in accordance with the FP-3 or FP-4 classifications in the State Building Code and shall be used solely for building access, parking of vehicles, or storage.

4. Basements, as defined by subsection 10-10-2(H)1 of this chapter shall be subject to the following:

a. Residential basement construction shall not be allowed below the regulatory flood protection elevation.

b. Nonresidential basements may be allowed below the regulatory flood protection elevation provided the basement is structurally dry floodproofed in accordance with subsection 10-10-5(B)3 of this section.

5. All areas of non-residential structures including basements to be placed below the regulatory flood protection elevation shall be floodproofed in accordance with the structurally dry floodproofing classifications in the State Building Code. Structurally dry floodproofing must meet the FP-1 or FP-2 floodproofing classification in the State Building Code and this shall require making the structure watertight with the walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. Structures floodproofed to the FP-3 or FP-4 classification shall not be permitted.

6. When at any one time more than one thousand (1,000) cubic yards of fill or other similar material is located on a parcel for such activities as on-site storage, landscaping, sand and gravel operations, landfills, roads, dredge spoil disposal, or construction of flood control works, an erosion/sedimentation control plan must be submitted unless the City is enforcing a state approved shoreland management ordinance. In the absence of a State approved shoreland ordinance, the plan must clearly specify methods to be used to stabilize the fill on site for a flood event at a minimum of the 100-year or regional flood event. The plan must be prepared and certified by a registered professional engineer or other qualified individual acceptable to the city

council. The plan may incorporate alternative procedures for removal of the material from the flood plain if adequate flood warning time exists.

7. Storage of Materials and Equipment:

a. The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.

b. Storage of other materials or equipment may be allowed by conditional use permit if readily removable from the area within the time available after a flood warning and in accordance with a plan approved by the city council.

8. The provisions of subsection 10-10-5(C) of this section shall also apply.

(C) **Standards for Flood Fringe Uses:**

1. All new principal structures must have vehicular access at or above an elevation not more than two feet (2') below the regulatory flood protective elevation. If a variance to this requirement is granted, the city council must specify limitations on the period of use or occupancy of the structure for times of flooding and only after determining that adequate flood warning time and local flood emergency response procedures exist.

2. Business Uses: Accessory land uses, such as yards, railroad tracks, and parking lots may be at elevations lower than the flood protection elevation. However, a permit for such facilities to be used by the general public shall not be granted, in the absence of a flood warning system, if the area is inundated to a depth greater than two feet (2') or subject to flood velocities greater than four feet (4') per second upon the occurrence of the regional flood.

3. Manufacturing and Industrial Uses: Measures shall be taken to minimize interference with normal plant operations especially for streams having protracted flood durations.

Certain accessory land uses such as yards and parking lots may be at lower elevations subject to requirements set out in subsection 10-10-5(C)1 above. In considering permit applications, the city shall give due consideration to the needs of an industry whose business requires that it be located in flood plain areas.

4. Fill shall be properly compacted and the slopes shall be properly protected by the use of riprap, vegetative cover or other acceptable method. The Federal Emergency Management Agency (FEMA) has established criteria for removing the special flood hazard area designation for certain structures properly elevated on fill above the 100-year flood elevation; FEMA's requirements incorporate specific fill compaction and side slope protection standards for multi-structure or multi-lot developments. These standards should be investigated prior to the initiation of site preparation if a change of special flood hazard area designation will be requested.

5. Flood plain developments shall not adversely affect the hydraulic capacity of the channel and adjoining flood plain of any tributary watercourse or drainage system where a floodway or other encroachment limit has not been specified on the official zoning map.

6. All manufactured homes must be securely anchored to an adequately anchored foundation system that resists flotation, collapse, and lateral movement. Methods of anchoring may include,

but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State or local anchoring requirements for resisting wind forces.

7. Waste Treatment and Waste Disposal:

a. No new construction, addition, or modification to existing waste treatment facilities shall be permitted within the flood fringe unless emergency plans and procedures for action to be taken in the event of flooding are prepared, filed with, and approved by the Minnesota Pollution Control Agency. The emergency plans and procedures must provide for measures to prevent introduction of any pollutant or toxic material into the flood waters.

b. There shall be no disposal of garbage or solid waste materials within flood fringe areas except upon issuance of a conditional use permit for sites approved by the Minnesota Pollution Control Agency, provided there will be no further encroachment on the floodway.

10-10-6: GENERAL FLOOD PLAIN DISTRICT (GFP):

(A) **Permitted Uses:** Permitted uses shall include those uses permitted by section 10-10-4(A) and 10-10-5(A) of this chapter.

(B) **Conditional and Interim Uses:** Other uses are allowed only upon the issuance of a conditional or interim use permit, in accordance with subsections 10-10-4(B) and 10-10-5(B) of this chapter. The general flood plain district includes the entire flood plain and does not differentiate between those areas that are floodway and those areas that are flood fringe. Because of this, the city council shall determine whether the proposed use is in the floodway or flood fringe using procedures established in section 10-10-2. If it is determined that the proposed use lies in the floodway, then the provisions of Section 10-10-4 of this chapter shall apply. If it is determined that the proposed use lies in the flood fringe, then the provisions of section 10-10-5 of this chapter shall apply.

(C) **Procedures for Floodway and Flood Fringe Determinations Within the General Flood Plain District:**

1. Upon receipt of an application for a conditional or interim use permit for a use within the general flood plain district, the applicant shall be required to furnish such of the following information as is deemed necessary by the city engineer for the determination of the regulatory flood protection elevation, and of whether the proposed use is within the floodway or flood fringe district.

a. A typical valley cross section showing the channel of the stream, elevation of land areas adjoining each side of the channel, cross sectional areas to be occupied by the proposed development, and high water information.

b. Plan (surface view) showing elevations or contours of the ground; pertinent structure, fill, or storage elevations; size, location, and spatial arrangement of all proposed and existing structures on the site; location and elevation of streets; photographs showing existing land uses and vegetation upstream and downstream; and soil type.

c. Profile showing the slope of the bottom of the channel or flow line of the stream for at least five hundred feet (500') in either direction from the proposed development.

2. The applicant shall submit one copy of the above information to a designated engineer or other expert person or agency for technical assistance in determining whether the proposed use is in the floodway or flood fringe district and to determine the regulatory flood protection elevation. Procedures consistent with Minnesota Regulations 1983, parts 6120.5000 through 6120.6200 shall be followed in this expert evaluation. The designated engineer or expert is strongly encouraged to discuss the proposed technical evaluation methodology with the respective Department of Natural Resources' area hydrologist prior to commencing the analysis. The designated engineer or expert shall:

a. Estimate the peak discharge of the regional flood.

b. Calculate the water surface profile of the regional flood based upon hydraulic analysis of the stream channel and overbank areas.

c. Compute the floodway necessary to convey or store the regional flood without increasing flood stages more than five-tenths foot (0.5'). A lesser stage increase than five-tenths foot (0.5') shall be required if, as a result of the additional stage increase, increased flood damages would result. An equal degree of encroachment on both sides of the stream within the reach shall be assumed in computing floodway boundaries.

3. The city engineer shall present the technical evaluation and findings of the designated engineer or expert to the city council. The city council must formally accept the technical evaluation and the recommended floodway and/or flood fringe district boundary or deny the permit application. The city council, prior to official action, may submit the application and all supporting data and analyses to FEMA, the Department of Natural Resources or the planning commission for review and comment. Once the floodway and flood fringe boundaries have been determined, the city council shall refer the matter to the city planner, who shall process the permit application consistent with the applicable provisions of section 10-10-4 and 10-10-5 of this chapter.

10-10-7: **SUBDIVISIONS:**

(A) **Review Criteria:** No land shall be subdivided that is unsuitable by reason of flooding, inadequate drainage, water supply, or sewage treatment facilities. All lots contained within the flood plain districts shall contain a building site at or above the regulatory flood protection elevation. All subdivisions shall have water and sewage disposal facilities that comply with provisions of this chapter and shall have road access both to the subdivision and to the individual building sites no lower than two feet (2') below the regulatory flood protection elevation. For all subdivisions in the flood plain, the floodway and flood fringe boundaries, the regulatory flood protection elevation, and the required elevation of all access roads shall be clearly labeled on all required subdivision drawings and platting documents.

(B) **Floodway/Flood Fringe Determinations in the General Flood Plain District:** In the general flood plain district, applicants shall provide the information required in subsection 10-10-6(C) of this chapter to determine the 100-year flood elevation, the floodway and flood fringe district boundaries, and the regulatory flood protection elevation for the subdivision site.

(C) **Removal of Special Flood Hazard Area Designation:** FEMA has established criteria for removing the special flood hazard area designation for certain structures properly elevated on fill above the 100-year flood elevation. FEMA's requirements incorporate specific fill compaction and side slope protection standards for multi-structure or multi-lot developments. These standards should be investigated prior to the initiation of site preparation if a change of special flood hazard area designation will be requested.

10-10-8: PUBLIC UTILITIES, RAILROADS, ROADS AND BRIDGES:

(A) **Public Utilities:** All public utilities and facilities such as gas, electrical, sewer, and water supply systems to be located in the flood plain districts shall be floodproofed in accordance with the State Building Code or elevated to above the regulatory flood protection elevation.

(B) **Public Transportation Facilities:** Railroad tracks, roads, and bridges to be located within the flood plain shall comply with sections 10-10-4 and 10-10-5 of this chapter. Elevation to the regulatory flood protection elevation shall be provided where failure or interruption of these transportation facilities would result in danger to the public health or safety or where such facilities are essential to the orderly functioning of the area. Minor or auxiliary roads or railroads may be constructed at a lower elevation where failure or interruption of transportation services would not endanger the public health or safety.

(C) **On-site Sewage Treatment and Water Supply Systems:** Where public utilities are not provided:

1. On-site water supply systems must be designed to minimize or eliminate infiltration of flood waters into the systems; and

2. New or replacement on-site sewage treatment systems must be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters and they shall not be subject to impairment or contamination during times of flooding. Any sewage treatment system designed in accordance with the state's current statewide standards for on-site sewage treatment systems shall be determined to be in compliance with this section.

10-10-9: MANUFACTURED HOMES AND MANUFACTURED HOME PARKS, AND PLACEMENT OF TRAVEL TRAILERS AND TRAVEL VEHICLES:

(A) **Manufactured Homes and Manufactured Home Parks:**

1. New manufactured home parks and expansions to existing manufactured home parks shall be subject to the provisions placed on subdivisions by section 10-10-7.

2. The placement of new or replacement manufactured homes in existing manufactured home parks or on individual lots of record that are located in flood plain districts will be treated as new structures, and may be placed only if elevated in compliance with section 10-10-5 of this chapter. If vehicular road access for pre-existing manufactured home parks is not provided in accordance with subsection 10-10-5(C)1, then replacement manufactured homes will not be allowed until the property owner develops a flood warning emergency plan acceptable to the city council.

3. All manufactured homes must be securely anchored to an adequately anchored foundation system that resists flotation, collapse, and lateral movement. Methods of anchoring may include,

but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable State or local anchoring requirements for resisting wind forces.

(B) **Placement of Travel Trailers and Travel Vehicles:**

1. Travel trailers and travel vehicles that do not meet the exemption criteria specified in subsection 10-10-9(B)2 shall be subject to the provisions of this chapter and as specifically spelled out in subsections 10-10-9(B)4 and (B)5.

2. Exemption: Travel trailers and travel vehicles are exempt from the provisions of this chapter if they are placed in any of the areas listed in subsection 10-10-9(B)3 and further if they meet the following criteria:

a. Have current licenses required for highway use.

b. Are highway ready meaning they are on wheels or the internal jacking system, are attached to the site only by quick disconnect type utilities commonly used in campgrounds and trailer parks, and have no permanent structural type additions attached to them.

c. The travel trailer or travel vehicle and associated use must be permissible in any pre-existing, underlying zoning use district.

3. Areas Exempted For Placement of Travel/Recreational Vehicles:

a. Individual lots or parcels of record.

b. Existing commercial recreational vehicle parks or campgrounds.

4. Travel trailers and travel vehicles exempted in subsection 10-10-9(B)2 lose this exemption when development occurs on the parcel for any structural addition to the travel trailer or travel vehicle, or when an accessory structure such as a garage or storage building is constructed. The travel trailer or travel vehicle and all additions and accessory structures will then be treated as a new structure and shall be subject to the elevation or flood proofing requirements and the use of land restrictions specified in sections 10-10-4 and 10-10-5 of this chapter.

5. New commercial travel trailer or travel vehicle parks or campgrounds and the expansion of any existing similar use exceeding five (5) units or sites shall be subject to the following:

a. Any new or replacement travel trailer or travel vehicle will be allowed in the floodway or flood fringe districts provided said trailer or vehicle and its contents are placed on fill above the regulatory flood protection elevation and proper elevated road access to the site exists in accordance with subsection 10-10-5(C)1 of this chapter. No fill placed in the floodway to meet the requirements of this Section shall increase flood stages of the 100-year or regional flood.

b. All new or replacement travel trailers or travel vehicles not meeting the criteria of subsection (B)5a above may, as an alternative, be allowed as a conditional use if in accordance with the following provisions and the provisions of subsection 10-10-10(C)1 of this chapter. The applicant must submit an emergency plan for the safe evacuation of all vehicles and people during the 100-year flood. Said plan shall be prepared by a registered engineer or other qualified individual and shall demonstrate that adequate time and personnel exist to carry out the evacuation. All attendant sewage and water facilities for

new or replacement travel trailers or other recreational vehicles must be protected or constructed so as to not be impaired or contaminated during times of flooding in accordance with subsection 10-10-8(C) of this chapter.

10-10-10: **ADMINISTRATION:**

(A) **Use Permit:**

1. Use Permit Required: A use permit issued by the development review committee in conformity with the provisions of this title shall be secured prior to the erection, addition to, or alteration of any building, structure, or portion thereof; prior to the use or change of use of a building, structure, or land; prior to the exchange or extension of a nonconforming use; and prior to the placement of fill, excavation of materials, or storage of materials within the flood plain.

2. Application for Use Permit: Application for a use permit shall be made in duplicate to the city planner on forms furnished by him and shall include the following where applicable: six (6) sets of plans drawn to scale, showing the nature, location, dimensions, and elevations of the lot; existing or proposed structures, fill, or storage of materials; and the location of the foregoing in relation to the channel.

3. State and Federal Permits: Prior to granting a use permit or processing an application for a conditional or interim use permit or variance, the city planner shall determine that the applicant has obtained all necessary state and federal permits.

4. Certificate of Zoning Compliance for New, Altered, or Nonconforming Uses: It shall be unlawful to use, occupy, or permit the use or occupancy of any building or premises, or both, or part thereof hereafter created, erected, changed, converted, or wholly or partly altered or enlarged in its use or structure until a certificate of zoning compliance shall have been issued therefor by the city stating that the use of the building or land conforms to the requirements of this title. Where a nonconforming use or structure is extended or substantially altered, the certificate of zoning compliance shall specifically state the manner in which the nonconforming structure or use differs from the provisions of this title.

5. Construction and Use to be as Provided in Applications, Plans, Permits, and Certificates of Zoning Compliance: Use permits, conditional or interim use permits, or certificates of zoning compliance issued on the basis of approved plans and applications authorize only the use, arrangement, and construction set forth in such approved plans and applications, and no other use, arrangement, or construction. Any use, arrangement, or construction at variance with that authorized shall be a violation of this title. The applicant shall submit certification by a registered professional engineer or architect that the finished fill and building elevations, flood proofing, or other flood protection measures were accomplished in compliance with the provisions of this title. A registered land surveyor may certify fill and building elevations.

6. Record of First Floor Elevations: The chief building inspector shall maintain a record of the elevation of the first floor (including basement) of all new structures or additions to existing structures in the flood plain districts. He shall also maintain a record of the elevations to which structures, alterations, and additions to structures are flood proofed.

(B) **Variances:**

1. The city council may authorize upon appeal in specific cases such relief or variance from the terms of this chapter as will not be contrary to the public interest and only for those circumstances such as hardship, practical difficulties, or circumstances unique to the property under consideration, as provided for in the respective enabling legislation for planning and zoning for the city. In the granting of such variance, the city council shall clearly identify in writing the specific conditions that exist consistent with the criteria specified in the respective enabling legislation which justify the granting of the variance. No variance to the provisions of this chapter shall have the effect of allowing in any district uses that are prohibited in that district, permit a lower degree of flood protection than the regulatory flood protection elevation for the particular area, or permit standards lower than those required by state law.

2. The city planner shall submit by mail to the Commissioner of Natural Resources a copy of the application for the proposed variances sufficiently in advance so that the commissioner will receive at least ten (10) days notice of the hearing.

3. A copy of all decisions granting variances shall be forwarded by mail to the Commissioner of Natural Resources within ten (10) days of such action.

4. Flood Insurance Notice and Record Keeping: The city planner shall notify the applicant for a variance that:

a. The issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as twenty five dollars ($25.00) for one hundred dollars ($100.00) of insurance coverage; and

b. Such construction below the 100-year or regional flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions. The city planner shall maintain a record of all variance actions, including justification for their issuance, and report such variances issued in his annual or biennial report submitted to the Administrator of the National Flood Insurance Program.

(C) **Conditional and Interim Use Permits:**

1. Any use requiring a conditional or interim use permit shall be provided in accordance with procedures set forth in section 10-5-5 of this title.

2. The city planner shall submit by mail to the Commissioner of Natural Resources a copy of the application for the proposed conditional or interim use sufficiently in advance so that the commissioner will receive at least ten (10) days' notice of the hearing.

3. A copy of all decisions granting conditional and interim use permits shall be forwarded by mail to the Commissioner of Natural Resources within ten (10) days of such action.

4. Procedure to be followed by city council in Passing on Conditional and Interim Use Permits:

a. Upon receiving an application for a conditional or interim use permit involving the use of fill, construction of structures, or storage of materials, the city council shall, prior to rendering a decision thereon:

(1) Require the applicant to furnish such of the following information and additional information as deemed necessary by the city for determining the suitability of the particular site for the proposed use:

(a) Ten (10) copies of the plan drawn to scale showing the nature, location, dimensions, and elevation of the lot, existing or proposed structures, fill, storage of materials, flood proofing measures, and the relationship of the above to the location of the channel.

(b) Specifications for building construction and materials, flood proofing, filling, dredging, grading, channel improvement, storage of materials, water supply, and sanitary facilities.

(2) Require the applicant to transmit one copy of the plan and specifications to an engineer designated by the city or other expert person or agency for technical assistance where necessary in evaluating the proposed project in relation to flood heights and velocities, the seriousness of flood damage to the use, the adequacy of the plans for protection, and other technical matters.

b. Based upon the technical evaluation of the designated engineer or expert, the city shall determine the specific flood hazard at the site and evaluate the suitability of the proposed use in relation to the flood hazard.

5. Factors Upon Which the Decision Shall be Based: In passing upon conditional and interim use applications, the city shall consider all relevant factors specified in other sections of this chapter, and

a. The danger to life and property due to increased flood heights or velocities caused by encroachments.

b. The danger that materials may be swept onto other lands or downstream to the injury of others.

c. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.

d. The susceptibility of the proposed facility and its contents to flood damage, and the effect of such damage on the individual owner.

e. The importance of the services provided by the proposed facility to the community.

f. The requirements of the facility for a waterfront location.

g. The availability of alternative locations not subject to flooding for the proposed use.

h. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.

i. The relationship of the proposed use to the Comprehensive Plan and flood plain management program for the area.

j. The safety of access to the property in times of flood for ordinary and emergency vehicles.

k. The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters expected at the site.

l. Such other factors which are relevant to the purposes of this chapter.

(D) Conditions Attached to Conditional and Interim Use Permits and Variances: Upon consideration of the factors listed above and the purposes of this chapter, the council may attach such conditions to the granting of conditional and interim use permits or variances as it deems necessary to fulfill the purposes of the chapter. Such conditions may include, but are not limited to, the following:

1. Modification of waste disposal and water supply facilities.

2. Limitations on period of use, occupancy, and operation.

3. Imposition of operational controls, sureties, and deed restrictions.

4. Requirements for construction of channel modifications, dikes, levees, and other protective measures.

5. Flood proofing measures in accordance with the State Building Code. The city shall require that the applicant submit a plan or document certified by a registered professional engineer or architect that the flood proofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area.

10-10-11: **NONCONFORMING USES:**

(A) A structure or the use of a structure or premises which was lawful before the passage or amendment of this chapter but which is not in conformity with the provisions of this chapter may be continued subject to the following conditions:

1. No such structure or use shall be expanded in a way which increases its nonconformity.

2. Any alteration or addition to a nonconforming structure or nonconforming use which would result in increasing the flood damage potential of that structure or use shall be protected to the regulatory flood protection elevation in accordance with any of the elevation on fill or flood proofing techniques (i.e., FP-1 through FP-4 flood proofing classifications) allowable in the State Building Code, except as further restricted in subsection (A)3 immediately below.

3. The cost of any structural alterations or additions to any nonconforming structure over the life of the structure shall not exceed fifty percent (50%) of the market value of the structure unless the conditions of this Section are satisfied. The cost of all structural alterations and additions constructed since the adoption of the city's initial flood plain controls must be calculated into current costs which will include all costs such as construction materials and a reasonable cost placed on all manpower or labor. If the current cost of all previous and proposed alterations and additions exceeds fifty percent (50%) of the current market value of the structure, then the structure must meet the standards of sections 10-10-4 or 10-10-5 of this chapter for new structures depending upon whether the structure is in the floodway or flood fringe, respectively.

4. If any nonconforming use is discontinued for twelve (12) consecutive months, any future use of the building premises shall conform to this chapter. The assessor shall notify the city planner in writing of instances of nonconforming uses which have been discontinued for a period of twelve (12) months.

5. If any nonconforming use or structure is destroyed by any means, including floods, to an extent of fifty percent (50%) or more of its market value at the time of destruction, and building permit has been applied for within 180 days of when the property is damaged, the council may impose reasonable conditions upon a building permit to mitigate any newly created impact on adjacent property. If no building permit is applied for within 180 days, any future use of the structure or land shall be in full conformity with the provisions of this title.

10-10-12 **PENALTIES FOR VIOLATION:**

(A) Violation of the provisions of this chapter or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of variances or conditional or interim use permits) shall constitute a misdemeanor and shall be punishable as defined by law.

(B) Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation. Such actions may include but are not limited to the following:

1. In responding to a suspected ordinance violation, the chief building inspector and the city council may utilize the full array of enforcement actions available to them including but not limited to prosecution and fines, injunctions, after-the-fact permits, orders for corrective measures, or a request to the National Flood Insurance Program for denial of flood insurance availability to the guilty party. The city must act in good faith to enforce these official controls and to correct ordinance violations to the extent possible so as not to jeopardize its eligibility in the National Flood Insurance Program.

2. Whenever the chief building inspector reasonably believes that an ordinance violation has occurred or is occurring, he shall investigate the situation and document the nature and extent of the violation of the official control. As soon as is reasonably possible, this information will be submitted to the appropriate Department of Natural Resources and FEMA regional office along with the city's plan of action to correct the violation to the degree possible.

3. The chief building inspector shall notify the suspected party of the requirements of this chapter and all other official controls and the nature and extent of the suspected violation of these controls. If the structure and/or use is under construction or development, the chief building inspector may order the construction or development immediately halted until a proper permit or approval is granted by the city council. If the construction or development is already completed, then the chief building inspector may either 1) issue an order identifying the corrective actions that must be made within a specified time period to bring the use or structure into compliance with the official controls, or 2) notify the responsible party to apply for an after-the-fact permit/development approval within a specified period of time not to exceed thirty (30) days.

4. If the responsible party does not appropriately respond to the chief building inspector within the specified period of time, each additional day that lapses shall constitute an additional violation of this chapter and shall be prosecuted accordingly. The chief building inspector shall

also upon the lapse of the specified response period notify the landowner to restore the land to the condition which existed prior to the violation of this chapter.

10-10-13: **AMENDMENTS:** The flood plain designation on zoning maps shall not be removed from flood plain areas unless it can be shown that the designation is in error. Special exceptions to this rule may be permitted by the Commissioner of Natural Resources if the Commissioner determines that, through other measures, lands are protected adequately for the intended uses. All amendments to this chapter, including amendments to the official map, shall be submitted to and approved by the Minnesota Commissioner of Natural Resources prior to adoption. Changes to the official map must meet the FEMA Technical Conditions and Criteria and must receive prior FEMA approval before adoption. The Commissioner of Natural Resources must be given ten (10) days written notice of all hearings to consider an amendment to this chapter and said notice shall include a draft of the ordinance amendment or technical study under consideration.

[8-2-04 Amd. Sec. 11 Ord 935]

CHAPTER 11

INDIVIDUAL SEWAGE TREATMENT SYSTEM

SECTION:

10-11- 1: Purpose and Intent
10-11- 2: Definitions
10-11- 3: Minimum Lot Size
10-11- 4: Scope; Disposal Permits; Permissible Systems; Public Sewer Availability; Subdivisions
10-11- 5: System Permits
10-11- 6: System Specifications
10-11- 7: Inspection and Access
10-11- 8: Operation, Maintenance and Repair
10-11- 9: Licensing
10-11-10: Penalties; Revocation of Permit; Cease and Desist Order; Assessment of Costs
10-11-11: Well Water Monitoring

10-11-1: **PURPOSE AND INTENT:** The purpose of this chapter is to protect and promote the health, safety and general welfare of the people of Burnsville and of other affected communities by regulating septage discharges and the location, installation, alteration, operation, maintenance, and monitoring of all individual sewage treatment systems, and by monitoring the quality of the well water so as to protect land, water, and other natural resources within and outside of the city from impairment, pollution, or destruction; to minimize the spread of communicable diseases, and to prevent and avoid other health and ecological hazards attributable to bacterial and chemical contamination of lands and waters; and to save residents and property owners from the large and unnecessary expense associated with providing central public water and sewer services.

10-11-2: **DEFINITIONS:** Definitions contained in Minnesota Pollution Control Agency Regulations, MN Rules 7080 and the following definitions shall apply in the interpretation and enforcement of this title:

COLIFORM BACTERIA: A group of 15 bacteria species that are commonly found in human and animal wastes, and may indicate ground water contamination from a failed septic system when found in private well water.

DRY BUILDABLE AREA: For the purpose of determining the adequacy of lots on which individual sewage disposal systems are to be located, the following shall be excluded from the gross lot area:

(A) Wetlands, as designated on the Official Wetland Inventory Maps.

(B) Designated floodplain area.

(C) Portions of the lot where the depth to groundwater or seasonally saturated soil is less than three feet (3') below the surface.*

(D) Slopes in excess of eighteen percent (18%) in gradient.*

(E) Portions of the lot where bedrock is within six feet (6') of the surface.*

* Lots that exhibit these characteristics may be acceptable candidates for the use of alternative systems as defined in MN Rules 7080. Lots that accommodate alternative systems shall have a minimum lot area of two and one-half (2½) acres.

INDIVIDUAL SEWAGE TREATMENT SYSTEM: A facility for receiving or treating sewage which is not a part of or connected to a public sewer system.

NITRATE: A combination of nitrogen and oxygen that is found in human and animal wastes, and may indicate ground water contamination from a failed septic system when found in private well water.

PRIVATE WELL: An on-site, residential well that is a source of potable water for the residents of the site.

PUBLIC SEWER SYSTEM: The sewage treatment and disposal system owned and operated by Burnsville, including interceptors, collector lines, outfall and outlet sewers, pumping stations and related equipment.

RENOVATION: Extension, alteration, reconstruction or repair of a sewage disposal system in whole or in part; provided, that minor alteration, maintenance or repair of a system involving activity having a reasonable value (based on the appropriate charge if performed by a licensed installer) of less than five hundred dollars ($500.00) shall not be considered a renovation.

SEPTAGE: Sludge, scum, solids and untreated wastewater pumped and collected from one or more individual sewage treatment systems for the purpose of discharge to a public sewer system or treatment facility.

10-11-3: **MINIMUM LOT SIZE:** All lots in any residential zoning district proposed for development with individual sewage treatment systems shall contain a minimum of two (2) acres of dry buildable area, as defined in this chapter, and shall have a minimum of two-hundred feet (200') of frontage on a public street, measured at the building setback line. Notwithstanding the provisions of subsection 10-7-3(A) of this title, any vacant lot of record, as defined in section 10-4-2 of this title, zoned R-1A and lawfully existing on July 2, 1990, may be developed with one single-family residence without a lot size variance; provided, that the proposed individual sewage treatment system for the residence complies with all other provisions of chapter 11 of this title, and that the proposed residence complies with all other applicable provisions of this title.

10-11-4: **SCOPE; DISPOSAL PERMITS; PERMISSIBLE SYSTEMS; PUBLIC SEWER AVAILABILITY; SUBDIVISIONS:**

(A) **Scope:** This title shall apply to the installation or renovation of individual sewage treatment systems undertaken following the effective date of this title and the operation, maintenance, correction and inspection of all individual sewage treatment systems, irrespective of when they were installed.

(B) **Disposal Permits:** It shall be unlawful for any person to dispose of septage without a disposal permit. Application for a septage disposal permit shall be in writing on forms furnished by the

chief building official, or his or her designee. Application for disposal into the Metropolitan Council Environmental Services system shall be accompanied by a written statement from the agency that such disposal is acceptable. Disposal permits shall specify the site(s) where the permit holder may dispose of septage and the quantity disposable at each site. Disposal by land application is not permitted.

(C) **Permissible Systems:** Only standard on-site sewage treatment systems may be installed or renovated. Proposals for alternative systems require a variance. Variances will be granted if an application is submitted which demonstrates that the proposed alternative system will be properly installed, operated and periodically inspected to insure its safe and sanitary operation. However, in no case shall such alternative systems as privies, seepage pits and holding tanks be acceptable.

Individual sewage treatment systems shall be designed to receive all sewage from the dwelling served by the system including laundry waste and basement floor drainage. Surface, roof and foundation drainage and other storm water shall not be allowed to enter any part of the system.

Not more than one dwelling unit shall be connected to the same individual sewage treatment system, unless such multiple connection was specified in the permit issued for the system.

Where it can reasonably be anticipated that the construction of additional structures, dwellings, or bedrooms, or the installation of additional equipment or services will increase the amount of sewage discharge or affect the operation of the system, a system to be installed or renovated shall comply with requirements applicable to such additional needs.

(D) **Public Sewer Availability:** No individual sewage treatment system shall be installed or renovated on lands to which public sewer service is available. Within the urban service area, as identified in a Metropolitan Council approved comprehensive sewer plan, developers shall locate individual sewage treatment systems to achieve maximum economic feasibility to connection to the public sewer system, consistent with the other provisions of this title.

Where a private sewer system has been installed before the public sewer system was accessible to the premises served by said private system, after the public system is available connection of said premises to the public system must be made within ninety (90) days after such private system fails to function properly in violation of MN Rules 7080.0050. It shall be unlawful to repair or pump a failing private system after such time as the public sewer system is accessible to the premises without written permission of the public works department for the city.

(E) **Subdivisions:** Preliminary plats for proposed subdivisions shall be reviewed to determine whether individual sewage treatment systems which comply with this title could reasonably be installed on each lot in the proposed plat. The subdivider shall be required to submit to the chief building official, or his or her designee, information and studies relating to the soils, water table level, percolation rate, and other relevant features, and to submit information as to the economic feasibility of construction of a sewage treatment system to serve all or a portion of the lots in the preliminary plat. Such information must demonstrate that both a primary and secondary drain field can be accommodated on each lot.

10-11-5: **SYSTEM PERMITS:** No person, firm or corporation shall install, alter, repair or extend any individual sewage treatment system without first obtaining a permit therefore from the city for each specific installation, alteration, repair or extension; and, at the time of applying for said permit, shall pay a fee therefore as established by resolution of the council. Such permits shall be valid for a period of twelve (12) months from the date of issuance. No building permit or occupancy permit, where required, will be issued until after the on-site sewage system permit is approved and issued.

10-11-6: **SYSTEM SPECIFICATIONS:**

(A) **Technical Requirements:** All individual sewage treatment systems shall be installed and renovated in accordance with the provisions contained in MN Rules 7080, except that the provisions of MN Rules 7080.0060 which exclude certain existing septic systems from compliance are not applicable.

(B) **Structural Requirements:** The design and construction of all building sewers, sewage tanks and individual sewage treatment systems shall comply with the requirements of the Minnesota State Building Code. (2 MCAR 1.10201)

10-11-7: **INSPECTION AND ACCESS:**

(A) **Existing Systems:** All systems existing on the effective date of this chapter shall be inspected by the city. Those found not to have been constructed, altered or maintained in accordance with current MN Rules 7080 regulations shall be assigned a grade as follows:

B - Better designed old systems that do not meet the letter of MN Rules 7080.

C - Cesspools and seepage pits without drainfields or having inadequate soil conditions. Cesspools and seepage pits without both drainfields and adequate soils.

F - Systems where raw, untreated sewage was observed pooling at the surface, running down slopes or discharging directly to surface or underground waters.

Existing systems shall be modified, repaired or replaced to meet the requirements of MN Rules 7080 in the same manner that a new system would be built today pursuant to the following schedule:

Existing systems receiving a B grade shall be modified as follows: (1) The system shall be altered to bypass any cesspool and add an access hole pursuant to MN Rules 7080 on or before December 31, 1992; (2) Additional drainfield to meet MN Rules 7080 shall be added by January 1, 1994, unless inspection shows serious risk of failure prior to that date, in which case, the additional drainfield shall be added within thirty (30) days of inspection.

Existing systems receiving a C grade shall be modified, repaired or replaced by a system built to the standards of a new system within eighteen (18) months of the inspection and grading.

Existing systems receiving an F grade shall be modified, repaired or replaced by the system built to the standards of a new system within six (6) months of the inspection and grading.

(B) **Certificate of Approval:** All individual sewage treatment systems, whether existing, new or renovated, must be inspected by the chief building official, or his or her designee, for compliance with this ordinance and Minnesota Rule 7080. Upon a finding that the system is in full compliance, a certificate of approval shall be issued. Failure to obtain a certificate of approval or to allow the inspection shall be a misdemeanor offense. Any existing certificate of approval shall become invalid upon an indication that the system has failed or is failing.

(C) **Septic Tank Access:** It shall be the duty of the owner or occupant of the premises upon which an individual sewage treatment system exists to give the chief building official, or his or her designee, access to the premises at reasonable times for the purpose of systems inspections.

(D) **Access Holes:** All systems shall be equipped with an access hole at a minimum of twenty inches (20") least dimension, and located within six feet (6') of all walls of the tank. The access hole shall extend through the tank cover to a point within twelve inches (12") of finished grade. If the access hole is covered with less than six inches (6") of soil, the cover must be secured to prevent unauthorized access.

(E) **Inspections:** The official designated by the city shall cause such inspection or inspections to be made as are necessary to determine compliance with this chapter within twenty four (24) hours of the time requested for the inspection. Upon satisfactory completion and final inspection of the system, the inspector shall issue to the applicant a certificate of approval. If upon inspection, the inspector discovers that any part of the system is not constructed in accordance with the minimum standards provided in this chapter, he shall give the licensed installer and the permittee written notification describing the defects. Failure of the city to inspect shall not relieve or lessen responsibility or liability of any person owning, controlling or installing any on-site sewage treatment system. It shall be the responsibility of the permittee to notify the inspector that the job is ready for inspection. It shall be the responsibility of the permittee to provide the inspector with free access to the property at reasonable times for the purpose of making such inspections. The permittee shall be responsible for the correction or elimination of all defects, and no system shall be placed or replaced in service until all defects have been corrected or eliminated. No part of the system shall be covered until it has been inspected and approved by the inspector.

10-11-8: OPERATION, MAINTENANCE AND REPAIR:

(A) **Unlawful Conditions:** It shall be unlawful for an owner or occupant to allow inadequately treated sewage or septage to seep or flow to the surface of the ground or into surface or groundwaters, or to allow an overflow. Said system shall be pumped immediately and as often thereafter as necessary until satisfactory repairs have been made.

(B) **Pumping of Tanks:** All septic tanks shall be pumped through the access hole extension rather than the inspection pipes located over the baffles and shall be pumped to remove all scum and solids. Sludge and scum shall be removed whenever the sludge reaches a point twelve inches (12") below the bottom of the outlet baffle and/or scum reaches a point three inches (3") above the bottom of the outlet baffle.

(C) **Pumping Frequency:** Each property owner shall pump the septic tank on the owner's property as often as required by inspection.

(D) **Failure to Pump Tank:** Failure on the part of the property owner to pump the owner's septic tank when required by inspection, or failure on the part of the property owner to submit in timely fashion the inspection report shall be cause for the city to have the septic system cleaned. In such case, the city shall arrange for the cleaning service and shall notify the property owner of the date the system will be cleaned. The cost of the cleaning and other costs related thereto shall be charged to the property owner, and if not paid when due, the same shall be assessed as a lien against the property.

(E) **Pumping Report:** Each pumping of every septic tank shall be reported to the inspections department on forms provided for that purpose within thirty (30) calendar days of the pumping. The pumper shall report the dates of pumpings, property addresses and names of owners, locations of sewage disposal, presence of surface discharge from sewage systems, and the condition of the septic tank baffles. The city inspector shall be called at the time of pumping to inspect the work.

10-11-9: **LICENSING:** Only persons licensed by Dakota County may design, install, construct, alter, extend, repair, maintain, clean or pump any individual sewage treatment system. Only persons licensed by Dakota County may perform percolation tests or soil evaluations for such systems. The city's inspector may grant permission to a homeowner to personally install, construct, alter, extend, repair, or maintain the on-site sewage treatment system at said private residence, provided that the work is planned and designed by a person licensed by Dakota County; the work is performed by the homeowner, and any person, who is compensated for his or her sewage system expertise, assisting the homeowner in such work is licensed by Dakota County; the work done is reviewed, approved, and inspected by the city's inspector; such work does not otherwise violate any state or local laws, ordinances, or regulations; and the homeowner executes a waiver of liability holding the City of Burnsville and Dakota County harmless from any effect of such work.

Licensees shall maintain and make available to the city soil test dates, system plans and other records and information as may be required by the city for the purpose of determining compliance with this chapter. Copies of any such records or documents shall be furnished to the city within thirty (30) days after licensee receives them. Records relating to any system installation or renovation shall be retained for a period of three (3) years following completion of that activity, and copies of the same shall be transmitted to the city within thirty (30) days after licensee received them. Licensees shall make available to the city all files and records and other information required to be maintained.

10-11-10: **PENALTIES; REVOCATION OF PERMIT: CEASE AND DESIST ORDER; ASSESSMENT OF COSTS:**

(A) Any person who violates any of the provisions of this chapter shall be guilty of a misdemeanor. Each day that an unlawful activity continues shall constitute a separate violation.

(B) The city may suspend or revoke any disposal or system permit upon information indicating that the permit has been issued in error or on the basis of incorrect or inadequate information, or that work is not being performed in compliance with this title or the provisions of any permit issued pursuant hereto.

(C) The city may issue an order to the owner or occupant of any premises utilizing an individual sewage treatment system to cease and desist the use of any system which is creating a hazard to the public health, safety or welfare.

(D) The city may cause to be assessed against the property on which an individual sewage treatment system is located the cost of proper closure, restoration and cleanup of pollution occurring as a result of a system failure.

10-11-11: **WELL WATER MONITORING:** The presence of nitrates and coliform bacteria in well water may indicate that the ground water has been contaminated by septic systems. The monitoring of well water quality is essential to the continued health, safety, and general welfare of the City of Burnsville and its residents. Monitoring shall be accomplished by the periodic testing of the water from private wells. Beginning in 1995, and once every five years thereafter, the city shall request property owners to obtain an analysis of the coliform bacteria and nitrate levels in the water from their private wells. The city shall receive a copy of the test results for the city files. The city shall assist owners if requested in obtaining the analysis, and may consider participating in the cost of the testing. The failure of any property owner to collect or permit the collection of a sample for analysis shall not constitute a violation of this title.

CHAPTER 12

R-1 ONE-FAMILY RESIDENTIAL DISTRICT

SECTION:

10-12-1: Special Minimum Requirements
10-12-2: Permitted Uses
10-12-3: Permitted Accessory Uses
10-12-4: Conditional Uses
10-12-4A: Interim Uses
10-12-5: Lot Area, Lot Width and Yard Requirements

10-12-1: **SPECIAL MINIMUM REQUIREMENTS:** In the One-Family Residential District:

(A) All dwellings shall have a minimum of one thousand one hundred (1,100) square feet of usable floor space above grade. In addition, with the exception of two (2) story buildings, dwelling may not be less than thirty feet (30') in length nor less than twenty-four feet (24') in width over that entire minimum length. Width measurements shall not include overhangs and other projections beyond the principal walls. The minimum square feet may be reduced by conditional use permit or as part of a planned unit development.

(B) All dwellings shall be served by public sanitary sewer and water, or be approved for the use of an individual sewage treatment system pursuant to chapter 11 of this title.

(C) No structure or building shall exceed thirty feet (30') in height except as provided in chapters 7 and 29 of this title.

(D) A private two (2) car garage with a minimum floor area of four hundred forty (440) square feet shall be required to be built concurrent with the principal structure. The maximum footprint of the garage shall not exceed the footprint of the living area of the principal structure.

(E) All driveways and required off-street parking spaces shall be surfaced with concrete, bituminous, or approved equivalent. A corner lot shall not have more than three (3) driveway openings and an interior lot shall not have more than two (2) driveway openings. Driveways in excess of fifteen percent (15%) grade shall require a variance.

(F) All waste material, debris, refuse, garbage or materials not currently in use for construction shall be stored indoors totally screened from the eye-level view from public streets and adjacent properties, or be kept in covered trash containers.

(G) With the exception of earth sheltered homes, all homes shall have frost footings and a continuous perimeter, permanent foundation consisting of concrete block, concrete or approved equivalent.

(H) With the exception of earth sheltered homes, all homes shall have a pitched roof.

(I) With the exception of earth sheltered homes, all homes shall have a cellar or basement.

(J) All dwellings must meet the applicable requirements of the State Uniform Building Code or the applicable manufactured housing code.

(K) All buildings shall be compatible with other buildings in the area.

(L) All outside main floor entryways (including garages) must be at least eighteen inches (18") above the center of the street in front of the entry, unless other measures to assure proper drainage are provided and approved.

The plat plan submitted for a building permit shall indicate the elevation of all main floor entryways (including garages) in relation to the street directly in front. For entryways less than eighteen inches (18") above the street, additional information must be provided to clearly indicate proposed drainage on the lot or parcel, its effect on adjacent properties, and the final disposal of storm water. The city engineer shall review all plans wherein an entryway is proposed less than eighteen inches (18") above the center line of the street. No building permits for such structures shall be issued until the report of the city engineer has been received.

10-12-2: **PERMITTED USES:** Within an R-1 One-Family Residential District, no structure or land shall be used except for one or more of the following uses:

Bus benches, shelters and transit facilities provided they comply with title 8 of this code.

One family detached dwellings.

Public parks and playgrounds.

10-12-3: **PERMITTED ACCESSORY USES:** Within any R-1 One-Family Residential District, the following uses shall be permitted accessory uses:

Animals as regulated herein.

Buildings temporarily located for purposes of constructing on the premises for a period not to exceed time necessary for such construction.

Gardening uses and incidental sale of plants. The infrequent, temporary display and sale of plants is permitted by the occupant(s) of the premises.

Home occupations.

Horticultural uses where no sale of products is conducted on the premises.

Private garages and parking space.

Private swimming pool and tennis court.

Signs as regulated in chapter 30 of this title.

Single satellite earth station antennas one meter (1 m) or less in diameter and single antenna designed to receive direct broadcast satellite services or multichannel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

Special sale events.

Towers supporting amateur radio antennas as regulated in chapter 29 of this title.

10-12-4: **CONDITIONAL USES:** Within any R-1 One-Family Residential District, no structure or land shall be used for the following uses except by conditional use permit:

Accessory structures and uses other than those listed as permitted.

Cemeteries.

Churches including those related structures located on the same site which are an integral part of the church proper, convents or homes for persons related to a religious function on the same site provided no more than ten (10) persons shall reside on the site and no building shall be located within fifty feet (50') of any lot line.

Essential service structures, including, but not limited to, buildings such as telephone exchange stations, booster or pressure regulating stations, wells and pumping stations, elevated tanks, lift stations and electrical power substations, provided no building shall be located within fifty feet (50') from any lot line of an abutting lot in an R district. Prior to granting such permit, it shall be found that the architectural design of service structures is compatible to the neighborhood in which it is to be located.

Golf courses, country clubs, tennis clubs, public swimming pools serving more than one family. The principal structure for any of the above listed uses shall be one hundred feet (100') or more from any abutting lot in an R district and accessory structure shall be a minimum of fifty feet (50') from any lot line.

Hospitals for human care, sanitariums, rest homes and nursing homes, provided that all structures except fences shall be located one hundred feet (100') or more from the lot line of any abutting lot in an R district; boarding facilities providing rooms do not create the need for more than two (2) parking spaces and do not include cooking facilities.

Municipal buildings and structures, including the storage of fire fighting apparatus, provided that no buildings shall be located within fifty feet (50') of any lot line of an abutting lot in an R use district. Storage of maintenance equipment and trucks over one and one-half (1½) tons, stockpiling of aggregate and open storage of material shall not be allowed.

Public and parochial schools provided no building shall be located within fifty feet (50') of any lot line. Single satellite earth station antenna greater than one meter (1 m) in diameter and single antenna designed to receive direct broadcast satellite services or multichannel multipoint distribution services greater than one meter (1 m) in diameter, as regulated in chapter 29 of this title.

Towers as regulated in chapter 29 of this title.

Those uses as allowed and regulated in chapter 7 of this title.

10-12-4A: **INTERIM USES:** Within any R-1 One-Family Residential District, no structure or land shall be used for the following uses except by interim use permit.

Private and public outdoor sports and recreational uses such as:

Archery, driving, target, and trap and skeet shooting ranges.

Athletic fields, not including stadiums and sports arenas.

Boat launch ramps.

Fishing, hunting, and swimming areas, not including swimming pools.

Horseback trails.

Provided that any required structures shall be accessory structures not designed for human habitation, and that any uses that include the shooting of firearms, bows, and other weapons shall not be permitted on property of less than ten (10) acres. (Ord. 375, 7-2-90)

10-12-5: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot area (interior)	10,000 square feet
Lot area (corner)	12,000 square feet
Lot width (interior)	80 feet
Lot width (corner)	90 feet
Setback – principal structure	
Front yard	30 feet
Side yard	10 feet
Side yard (street)	20 feet.
Rear yard	30 feet
Setback – accessory structure	
Front yard	30 feet
Side yard	5 feet
Side yard (street)	20 feet
Rear yard	8 feet
Setback – parking	
Front yard	Driveway only
Side yard	5 feet
	2 feet for recreational vehicle storage
Side yard (Street)	10 feet
Rear yard	5 feet

The front yard setback for a principle structure in an R-1 district shall be thirty feet (30’). The setback may be reduced down to a minimum of twenty feet (20’) if the following conditions are met:

1. The setback reduction is for an attached living area or porch to the principle structure, not including the garage, which does not exceed a total of one hundred twenty (120) square feet of above grade finished livable space.

2. The exterior materials of the proposed living area or porch are consistent or complementary in color, texture and quality with those visible at the front of the dwelling.

3. The roof of the proposed living area or porch is properly proportioned to and integrated with the roof of the dwelling.

4. Plans are approved by the development review committee.

5. The structure does not adversely affect drainage on the lot or neighboring properties.

The side yard setback in an R-1 District shall be ten feet (10'). The setback may be reduced to five feet (5') if the following conditions are met:

1. The setback reduction is for the garage structure, and

2. There is a minimum of fifteen feet (15') between neighboring structures.

The rear yard setback for a principle structure in an R-1 District shall be thirty feet (30’). The setback may be reduced to twenty feet (20’) if the following conditions are met:

1. The setback reduction is for an attached living area to the principle structure, not including the garage, that does not exceed a total of three hundred (300) square feet of above grade finished livable space.

2. There is a minimum of forty feet (40’) measured at the closest point, between the attached living area and the neighboring principle structure and any attached living area to the rear.

3. The structure does not adversely affect drainage on the lot or neighboring properties.

[7-7-97 Amd. Sec. 1(C), 3, 4 Ord. 674] [5-17-99 Amd. Sec. 3 Ord. 752] [11-5-01 Amd. Sec 5 Ord. 830] [7-21-03 Amd. Sec. 5 Ord. 887] [7-6-04 Amd. Sec. 1(D) Ord. 932] [6-2-09 Amd. Sec. 2 Ord. 1166]; [3-2-10 Amd. Sec. 3 Ord. 1193]; [4-6-2010 Amd. Sec. 3, 5 Ord. 1196];

CHAPTER 12A

RESIDENTIAL BUSINESS REQUIREMENTS

SECTION:

10-12A-1: Purpose
10-12A-2: Home Occupation
10-12A-3: Special Sales Events
10-12A-4: Registration of Non-Conforming Home Occupations
10-12A-5: Exemptions

10-12A-1: **PURPOSE:** The purpose of this chapter is to maintain the character and integrity of residential areas and to provide a means through the establishment of specific standards and procedures by which home occupations can be conducted in residential neighborhoods without jeopardizing the health, safety, and general welfare of the surrounding neighborhood. This chapter also distinguishes between special sales events and continuous business.

10-12A-2: **HOME OCCUPATION:** A home occupation may be conducted in a residential dwelling in any residential zoning district subject to the following requirements:

(A) **Exterior Parking:**

1. Exterior parking of vehicles in excess of twenty two feet (22') in length is prohibited.

2. No more than four (4) vehicles related to the home occupation, including customer vehicles, may be parked on the property outside a garage. Vehicles parked outside a garage may only be parked on driveways surfaced with concrete, bituminous, or brick pavers.

3. Exterior parking of trailers, bobcats, landscaping equipment, cement mixers, and other similar types of equipment used in the home occupation is prohibited.

(B) **Employees:** Only residents of the dwelling may engage in or conduct the home occupation in the home except:

1. One non-resident if, by reason of physical or medical condition, the owner would not, in the absence of such assistance, be able to conduct the home occupation, or

2. One non-resident individual.

(C) **Accessory Use of the Property:** The home occupation shall be conducted entirely within the principal dwelling. Occasional use may be made of a backyard for activities not involving manufacturing, assembly, or fabricating if such use does not create a nuisance or violate the city's noise standard. The home occupation may not be conducted in accessory buildings or in attached or detached garages. Exterior storage is prohibited. Garages may be used for storage if sufficient room is maintained for the number of vehicles for which the garage is designed.

(D) **Appearance:**

1. Except for customer and delivery vehicles, and one non-illuminated name plat sign not larger than two square feet affixed to the dwelling immediately adjacent to the entrance used for business access and except as otherwise expressly authorized by this chapter, there shall be no evidence of the occupation, activity, or business use visible, audible, or with an odor detectable from the exterior of the dwelling.

2. No structural changes to the dwelling or residential driveway shall be permitted which are inconsistent with the residential use and appearance of the property.

(E) **Public Health:** The use of dumpsters in conjunction with the home occupation is prohibited.

(F) **General Restrictions:**

1. Customer visits related to the home occupation shall be allowed only during the hours of 7:00 a.m. and 10:00 p.m. Monday through Saturday. Deliveries and pick-ups related to the home occupation shall only be allowed during the hours of 8:00 a.m. to 6:00 p.m. Monday through Saturday.

2. Sales of goods shall be allowed only if incidental to, and made at the time of, the primary provision of a business service.

3. Deliveries may not be made by semi-trailer truck.

4. No business activity may be conducted which is illegal or prohibited under any other city ordinance or applicable law.

10-12A-3: **SPECIAL SALES EVENTS:** Special sales events may be conducted from a residential dwelling in any residential zoning district subject to the following requirements:

(A) **General Requirements:**

1. At least five percent (5%) of the items being sold must be owned by a resident of the dwelling.

2. No more than two sales events may take place in a twelve (12) month period. Each sales event may be one, two, three, or four consecutive days.

(B) **Signage:** A special sales event may be advertised with the use of not more than six temporary signs which may be displayed on the residential premises where the event is being held or within a one mile radius of such premises. Permitted signs shall not be in excess of four square feet in size and may be located upon public rights of way, provided that they do not present any hazard to public safety, or upon private property with the permission of the owner thereof. Signs may be placed the day prior to the commencement of the event and must be removed on the day the event concludes.

(C) **Permit:** At least five (5) days prior to the event, a resident of the residential premises upon which the event is to be held shall obtain from the inspections department a permit. Issuance of the permit shall be conditioned upon a showing by the applicant that the event will comply with the requirements of this section and upon the payment of a $25.00 fee to defray administrative costs. If the event is not conducted in conformity with this section, the permit may be revoked in which case the event shall immediately be suspended.

(D) **Hours of Operation:** A special sales event may be operated only between the hours of 9:00 a.m. and 9:00 p.m. on week days, and the hours of 9:00 a.m. and 5:00 p.m. on weekends.

(E) **Use of Garage:** A special sales event may use a garage located upon the residential premises in connection with the event for purposes of display of goods or merchandise, or for access.

(F) **Additional Requirements:** Except as specifically modified by this Section the requirements in sections 10-12A-2 (C), (D), (E), and (F) shall apply.

10-12A-4: REGISTRATION OF NON-CONFORMING HOME OCCUPATIONS: All home occupations rendered non-conforming by this Section shall register with the city inspections department within one year of the effective date of this ordinance.

10-12A-5: EXEMPTIONS. This chapter does not apply to garage sales and to day care and residential facilities licensed by the State of Minnesota.

[5-17-99 Ord. 752]

CHAPTER 12B

P PARK DISTRICT

SECTION:

10-12B-1: Permitted Uses
10-12B-2: Permitted Accessory Uses
10-12B-3: Conditional Uses

10-12B-1: **PERMITTED USES:** Within a P Park District, no structure or land shall be used except for one or more of the following uses:

Boat landing.

Bus benches, shelters and transit facilities provided they comply with title 8 of this code.

Golf Course, public or private.

Hockey rinks, pleasure and in-line skating.

Informal playfield.

Open space, natural areas, nature trails and other similar facilities.

Other recreation uses/equipment.

Picnic area.

Picnic shelter.

Play equipment.

Play fields, including but not limited to soccer, baseball, softball, football.

Playgrounds, hard or soft surface play areas.

Recreation buildings.

Skate board parks.

Special events as scheduled with recreation department.

Swimming pools.

Tennis courts.

Volleyball courts.

Warming houses and other similar facilities.

10-12B-2: **PERMITTED ACCESSORY USES:** Within any P Park District, the following uses shall be permitted accessory uses:

(A) **Outdoor Ballfield Signs:** Signs located on outfield fences at ballfields within all municipal parks shall be subject to a lease or master agreement with the city and are subject to the following restrictions:

1. Signs may be located on right and left outfield fence areas only. No sign shall be located within the middle third of the outfield fence. Signs shall be located at least one foot (1') from the top and bottom of the outfield fence and centered on the fence section.

2. Signs must be made of vinyl or other similar material with wind holes. The city has the right to determine the structural integrity of proposed signage. The structural stability of the fences in each park will determine the size of the signs. The signs must be the same size within each ballfield in the park.

3. All signs shall face the interior of the ballfield.

4. The signs shall be maintained in a safe, orderly condition at all times. Faded signs shall be replaced.

5. A lease or master agreement with the city shall identify the terms under which signs may be installed including dimension, number and sign details. No advertising for firearms, liquor products (by name), tobacco, political or religious persons or organizations, sexually oriented products or stores shall be permitted.

6. Signs shall be installed no earlier than April 1st and shall be removed no later than October 31st of each year. The city shall be notified by the organization when signage will be installed and removed each year.

7. Signs shall be permitted on permanent ballfield scoreboards subject to the approval of the city.

8. Temporary event banner(s) shall be permitted for tournaments at all municipal park(s) with ballfields. The banner(s) must include the name and date of the event. The event banner(s) shall be allowed for no more than a ten (10) day period. All temporary banners shall be approved by the city as part of the approval for the rental of the field. A temporary tent(s) shall be permitted for tournaments as approved by the city.

9. The provisions of this section do not apply to the naming rights for any park or facility. Naming rights shall be subject to a lease or master agreement to be approved by the city council.

10. Master agreements and leases for signage in parks shall be reviewed by the appropriate city committee or commission prior to review by the city council.

(B) **Exterior Skating and Hockey Rink Signs**: Signs located on skating and hockey rink dasher boards within all municipal parks shall be subject to a lease or master agreement with the city and are subject to the following restrictions:

1. Signs shall be integrated into the ice or interior of the dasher boards only and shall not extend above the boards in any way. The signs must be the same size within each rink.

2. All signs shall face the interior of the rink.

3. The city reserves the right to determine the structural integrity and safety of all proposed signage.

4. All signs shall be maintained in a safe, orderly condition at all times.

5. A lease or master agreement with the city shall identify the terms under which signs may be installed including the location where signs may be posted, dimension, number of signs and sign details. No advertising for firearms, liquor products (by name), tobacco, political or religious persons or organizations, sexually oriented products or stores shall be permitted.

6. The provisions of this section do not apply to the naming rights for any park or facility. Naming rights shall be subject to a lease or master agreement to be approved by the city council.

7. Master agreements and leases for signage in parks shall be reviewed by the appropriate city committee or commission prior to review by the city council.

10-12B-3: **CONDITIONAL USES:** Within any P Park District, no structure or land shall be used except for one or more of the following uses:

Essential service structures, including, but not limited to, buildings such as booster or pressure regulating stations, wells and pumping stations, elevated tanks, and lift stations, provided no building shall be located within fifty feet (50') from any lot line of an abutting lot in an R District. Prior to granting such permit, it shall be found that the architectural design of service structures is compatible to the neighborhood in which it is located.

[9-16-02 Ord. 859] [12-1-03 Amd. Sec. 12B-3 Ord 899] [6-2-09 Amd. Sec. 1 Ord 1166] [7-21-09 Amd. Sec. 10-12B-2 Ord 1171];

CHAPTER 13

R-1A ONE-FAMILY RURAL RESIDENTIAL DISTRICT

SECTION:

10-13-1: Special Minimum Requirements
10-13-2: Permitted Uses
10-13-3: Permitted Accessory Uses
10-13-4: Conditional Uses
10-13-4A: Interim Uses
10-13-5: Lot Area, Lot Width and Yard Requirements

10-13-1: **SPECIAL MINIMUM REQUIREMENTS:** In the R-1A One-Family Rural Residential District the special minimum requirements of the R-1 District shall apply.

10-13-2: **PERMITTED USES:** Within an R-1A One-Family Rural Residential District, no structure or land shall be used except for one or more of the following uses:

Uses permitted in the R-1 District.

10-13-3: **PERMITTED ACCESSORY USES:** Within any R-1A One-Family Rural Residential District, the following uses shall be permitted accessory uses:

Accessory uses permitted in the R-1 District.

10-13-4: **CONDITIONAL USES:** Within any R-1A One-Family Rural Residential District, no structure or land shall be used for the following uses except by conditional use permit:

Conditional uses allowed in the R-1 District.

10-13-4A: **INTERIM USES:** Within any R-1A One-Family Rural Residential District, no structure or land shall be used for the following uses except by interim use permit:

Interim uses permitted in the R-1 district.

Land reclamation, mining and soil processing.

10-13-5: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot area (interior)	1 acre[1]
Lot area (corner)	1 acre[1*]
Lot area (interior)	2 acres[2]
Lot area (corner)	2 acres[2]
Lot width (interior)	120 feet
(corner)	130 feet
Setback – Principal Structure	
Front yard	50 feet
Side yard	10 feet
Side yard (street)	40 feet
Rear yard	30 feet
Setback –Accessory Structure	
Front yard	50 feet
Side yard	5 feet
Side yard (street)	40 feet
Rear yard	8 feet

Notes:

1. The city may consider the approval of a planned unit development in which the average net lot area, exclusive of any required right-of-way dedication, is a minimum of one acre. Any such approval shall include findings that the development is sensitive to the unique and valuable natural characteristics of the site.

2. 2 acres of dry, buildable area and 200 feet of lot width for lots with individual sewage treatment systems pursuant to section 10-11-13 of this title.

[7-1-02 Amd. Sec. 5 Ord 851] [6-2-09 Amd. Sec. 2 Ord 1166];

CHAPTER 14

R-2 TWO-FAMILY RESIDENTIAL DISTRICT

SECTION:

10-14-1: Special Minimum Requirements
10-14-2: Permitted Uses
10-14-3: Permitted Accessory Uses
10-14-4: Conditional Uses
10-14-4A: Interim Uses
10-14-5: Lot Area, Lot Width and Yard Requirements

10-14-1: **SPECIAL MINIMUM REQUIREMENTS:** In the R-2 Two-Family Residential District:

(A) Two-family dwellings shall have at least one thousand five hundred (1,500) square feet of usable floor space above grade.

(B) All two-family dwellings shall be served by public sanitary sewer and water.

(C) No structure shall exceed thirty feet (30') in height except as provided in chapter 29 of this title and Section 10-7-33.

(D) Four (4) enclosed garage spaces with a minimum of two hundred twenty (220) square feet per space.

(E) All driveways and required off-street parking spaces shall be surfaced with concrete, bituminous or approved equivalent.

(F) All waste material, debris, refuse, garbage or materials not currently in use for construction shall be stored indoors, totally screened from the eye-level view from public streets and adjacent properties, or be kept in covered trash containers.

(G) All two-family dwellings shall meet all the requirements of the Uniform Building Code.

10-14-2: **PERMITTED USES:** Within any R-2 Two-Family Residential District, no structure or land shall be used except for one or more of the following uses:

Uses permitted in the R-1 District.

Two family dwellings.

10-14-3: **PERMITTED ACCESSORY USES:** Within any R-2 Two-Family Residential District, the following uses shall be permitted accessory uses:

Accessory uses permitted in the R-1 District.

10-14-4: **CONDITIONAL USES:** Within any R-2 Two-Family Residential District, no structure or land shall be used for the following uses except by conditional use permit.

Conditional uses allowed in the R-1 District.

10-14-4A: **INTERIM USES:** Within any R-2 Two-Family Residential District, no structure or land shall be used for the following uses except by interim use permit.

Interim uses permitted in the R-1 district.

10-14-5: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot Area (Interior)	15,000 sq. ft.
Lot Width	100 ft.
Lot Area (Interior)	7,500 sq. ft.*
Lot Width	50 ft.
Setback – Principal Structure	
Front Yard	30 ft.
Side Yard	10 ft.
Side Yard (Street)	20 ft.
Rear Yard	30 ft.
Setback – Accessory Structure	
Front Yard	30 ft.
Side Yard	5 ft.
Side Yard (Street)	20 ft.
Rear Yard	8 ft.
Setback – Parking	
Front Yard	Driveway Only
Side Yard	5 ft.
Side Yard (Street)	10 ft.
Rear Yard	5 ft.

*Zero lot line may be approved with each half of the lot containing 7,500 sq. ft. lot area, 50 ft. width, separate utilities, and meeting building codes adopted by the city.

[7-7-97 Amd. Sec. 1(C) Ord. 674] [7-1-02 Amd. Sec. 5 Ord. 851]; [4-6-2010 Amd. Sec. 5 Ord.1196];

CHAPTER 15

MULTIPLE FAMILY RESIDENTIAL DISTRICTS SPECIAL MINIMUM REQUIREMENTS

SECTION:

10-15-1: Special Minimum Requirements in R-3A, R-3B and R-3C Districts

10-15-1: SPECIAL MINIMUM REQUIREMENTS IN R-3A, R-3B AND R-3C DISTRICTS:

(A) **Floor Area:** Five hundred (500) square foot minimum floor area for efficiency apartment units. Minimum eight hundred (800) square feet for a one bedroom dwelling unit plus one hundred (100) square feet for each additional bedroom. Seven hundred (700) square foot minimum floor area for one bedroom apartment dwelling units in retirement housing developments, plus one hundred (100) square feet for each additional bedroom. Garages, breezeways and porch floor spaces shall not be credited in determining the required floor area of units.

(B) **Utilities:** All multiple family dwellings shall be served by public sanitary sewer and water. The private utility systems within the development shall be subject to the review and approval of the city engineer.

(C) **Parking:** The design and maintenance of off-street parking areas and the required number of parking spaces shall be in accordance with subsection 10-7-26(D). Private driveways for garages in townhouse developments shall be a minimum of twenty feet (20’) in length to allow vehicle parking on the driveway.

(D) **Size of Development:** All developments which contain two (2) or more structures and/or a structure containing ten (10) or more dwelling units shall be by conditional use permit. No townhouse building shall have more than eight (8) dwelling units.

(E) **Trash Handling and Recycling:** All trash, recyclable materials, and trash and recyclable materials handling equipment shall be stored within the principal structure, totally screened from public view by the principal building, or stored within an accessory structure constructed of building materials compatible with the principal structure, enclosed by a roof, and readily served through swinging doors. Compactors that are attached to the principal structure shall be totally screened from eye level view from public streets and adjacent properties by a screening wall constructed of the same building material as the principal structure. Existing uses shall comply with the enclosure requirements listed in this Section within five (5) years of receiving notice from the city. For the purposes of this Section, "trash" means "mixed municipal solid waste" as defined under section 7-7-1 of the city code.

(F) **On Site Screening:** All mechanical equipment, utility meters, storage and service areas and similar features shall be completely screened from the eye-level view from adjacent properties and public streets, or designed to be compatible with the architectural treatment of the principal structure.

(G) **Building Design and Materials:** All buildings shall be designed to accomplish the goals and policies of the Comprehensive Plan. Building materials shall be attractive in appearance, durable,

and of a quality which is both compatible with adjacent structures and consistent with the City's standards for the district in which it is located. All buildings shall be of good aesthetic and architectural quality, as demonstrated by the inclusion of elements such as accent materials, entrance and window treatments, contrasting colors, irregular building shapes and rooflines, or other architectural features in the overall architectural concept.

1. Major exterior surfaces on all walls shall be face brick (glazed or unglazed), clay faced tile, stone masonry (granite, limestone, marble, slate, sandstone, or quartzite), finished texture stucco (cement or synthetic), exterior finished wood siding (painted, stained, or weather-sealed), exterior finished metal siding (not including sheet metal of any kind), exterior finished vinyl siding or fiber cement siding in lap or panel design (color impregnated or painted). Panel seam lines shall be architecturally integrated into the building design so that they are not visible. Seam lines can either be filled, covered with accent material or some other method to make seam lines invisible.

2. All building and roofing materials shall meet current accepted industry standards, and tolerances, and shall be subject to review and approval by the city for quality, durability, and aesthetic appeal. For all new buildings and building exterior renovations, the architect shall submit to the city product samples, color building elevations, and associated drawings which illustrate the construction techniques to be used in the installation of such materials.

3. If complementary building styles, materials, and color schemes are proposed for a development, the developer shall submit to the city a plan showing the distribution of the styles, materials, and colors throughout the development.

(H) **Parking Lot Screening:**

1. The light from automobile headlights and other sources shall be screened whenever it may be directed onto residential windows.

2. When required parking areas abut any residential district, the edge nearest the lot line shall be completely screened to a height of at least three and one-half feet (3½') above the parking grade. Such screening shall either be constructed of durable building materials designed in harmony with the principal structure or accomplished through use of earth mounds and/or landscape materials as approved.

3. When the design of the site is such that parking occurs in the front yard, a minimum of ten feet (10') landscaped area shall be provided between parking and building, in addition to the required setbacks.

(I) **Setbacks in Townhouse Developments:** Buildings in townhouse developments shall be located at least twenty feet (20') apart and twenty feet (20') from the back of the curb of private roadways. The applicable setbacks required in the underlying zoning district shall be met along the perimeter lot lines of the development and along all public roadways.

(J) **Recreational Facilities:** On-site recreational facilities, such as swimming pools, tennis courts, play equipment, walking trails, gardens, and basketball courts, that are suitable for the projected population of the development shall be provided when the nearest public park is more than one-half (1/2) mile or across a thoroughfare or arterial roadway from the development.

(K) **Roadway and Driveway Design:** All private roadways in multi-family developments shall have a design speed of twenty-five (25) miles per hour, and shall have a maximum grade of seven percent (7%). All private driveways for garages in townhouse developments shall have a maximum grade of eleven percent (11%).

(L) **Net Density:** The net density of multi-family developments, defined in section 10-4-2 of this title, shall be:

1. R-3A = 8.712 units per acre

2. R-3B = 14.52 units per acre

3. R-3C = 21.78 units per acre

[5-5-97 Amd. Sec. 1 Ord. 666)] [5-17-04 Amd. Sec. 1 (G) (1.) Ord 923]

CHAPTER 16

R-3A MEDIUM DENSITY RESIDENTIAL DISTRICT

SECTION:

10-16-1: Permitted Uses
10-16-2: Permitted Accessory Uses
10-16-3: Conditional Uses
10-16-3A: Interim Uses
10-16-4: Lot Area, Lot Width and Yard Requirements
10-16-5: Supplemental Provisions

10-16-1: **PERMITTED USES:** Within any R-3A Medium Density Residential District no structure or land shall be used except for one or more of the following uses:

Uses permitted in the R-2 District.

One to nine (9) family dwelling structures.

Nursing homes, rest homes, retirement homes, provided the site shall contain not less than eight hundred (800) square feet of lot area for each person to be accommodated, and are fifty feet (50') or more from a lot line of an abutting lot in an R District.

Those uses as allowed and regulated in chapter 7 of this title.

10-16-2: **PERMITTED ACCESSORY USES:** Within any R-3A Medium Density Residential District, the following shall be permitted accessory uses:

(A) Except as provided in Paragraph (B), within any R-3A Medium Density Residential District, the following shall be permitted accessory uses:

Accessory uses permitted in the R-2 District with the following exceptions:

(B) Exceptions:

1. Day care centers as home occupations with more than three (3) children in a structure with more than two (2) dwelling units is prohibited.

2. Towers supporting amateur radio antennas.

10-16-3: **CONDITIONAL USES:** Within any R-3A Medium Density Residential District, no structure or land shall be used for the following uses except by conditional use permit:

Conditional use allowed in the R-2 District.

Day care nursery, provided that not less than fifty (50) square feet of outside fenced play space per pupil is provided.

A residential program (group home) for seven (7) to sixteen (16) persons as defined and licensed by the State of Minnesota Department of Human Services. Conditions of the conditional use permit shall be imposed only to assure the proper maintenance and operation of the program and shall not be more restrictive than those imposed on other conditional uses of multifamily residential property unless such additional conditions are necessary to protect the health and safety of the program participants. A conditional use permit shall not be issued for a residential program that is within one thousand three hundred twenty feet (1,320') of another residential program.

10-16-3A: **INTERIM USES:** Within any R-3A Medium Density Residential District, no structure or land shall be used for the following uses except by interim use permit.

Interim uses permitted in the R-1 district.

10-16-4: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot Area (Interior)	20,000 sq. ft. + 5,000 sq. ft. for every dwelling unit over 4 units
Lot Area (Corner)	22,000 sq. ft. + 5,000 sq. ft. for every dwelling unit over 4 units
Lot Width	100 ft.
Setback – Principal Structure	
Front Yard	30 ft.
Side Yard	30 ft.
Side Yard (Street)	30 ft.
Rear Yard	30 ft.
Setback – Accessory Structure	
Front Yard	30 ft.
Side Yard	5 ft.
Side Yard (Street)	30 ft.
Rear Yard	5 ft.
Setback – Parking	
Front Yard	20 (30) ft.
Side Yard	5 (15) ft.
Side Yard (Street)	20 (30) ft.
Rear Yard	5 (15) ft.

Setbacks in parentheses apply adjacent to R-1, R-1A and R-2 Districts.

10-16-5: **SUPPLEMENTAL PROVISIONS:**

(A) When structures within the R-3A District abut streets of higher carrying capacities than standard residential streets, the basic minimum setback for the principal structure from the street shall be increased to the following:

Setback	Street Classification
45 ft.	Collector, thoroughfare, minor arterial
50 ft.	Intermediate and principal arterial

(B) Structures within the R-3A District shall not exceed thirty five feet (35') in height except as provided in chapter 29 of this title.

(C) The maximum horizontal length of the above grade portion of any building within the R-3A District shall be one hundred fifty feet (150'), as measured at the widest point between any two (2) edges on the structure.

[7-7-97 Amend. Sec. 2, 5(B) Ord. 674]

CHAPTER 17

R-3B HIGH DENSITY RESIDENTIAL DISTRICT

SECTION:

10-17-1: Permitted Uses
10-17-2: Permitted Accessory Uses
10-17-3: Conditional Uses
10-17-3A: Interim Uses
10-17-4: Lot Area, Lot Width and Yard Requirements
10-17-5: Supplemental Provisions

10-17-1: **PERMITTED USES:** Within any R-3B High Density Residential District, no structure or land shall be used except for one or more of the following uses:

Uses permitted in the R-3A District.

10-17-2: **PERMITTED ACCESSORY USES:** Within any R-3B High Density Residential District, the following uses shall be permitted accessory uses:

Accessory uses permitted in the R-3A District.

10-17-3: **CONDITIONAL USES:** Within any R-3B High Density Residential District, no structure or land shall be used for the following uses except by conditional use permit:

Conditional uses allowed in the R-3A District.

10-17-3A: **INTERIM USES:** Within any R-3B High Density Residential District, no structure or land shall be used for the following use except by interim use permit.

Interim uses permitted in the R-1 district.

Land reclamation, mining and soil processing subject to chapters 8, 9, and 10 of this title.

10-17-4: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot Area (Interior)	18,000 sq. ft. + 3,000 sq. ft. for every dwelling unit over 6 units
Lot Area (Corner)	20,000 sq. ft. + 3,000 sq. ft. for every dwelling unit over 6 units
Lot Width	100 ft.

Setback – Principal Structure	
Front Yard	40 (50) ft. or 1.5 times height, as measured from nearest property line, whichever is greater.
Side Yard	30 (40) ft. or 0.6 (1.5) times height, as measured from nearest property line, whichever is greater.
Side Yard (Street)	40 (50) ft. or 1.5 times height, as measured from nearest property line, whichever is greater.
Rear Yard	30 (40) ft. or 0.6 (1.5) times height, as measured from nearest property line, whichever is greater.

Setback – Accessory Structure	
Front Yard	40 (50) ft.
Side Yard	5 (10) ft.
Side Yard (Street)	30 (30) ft.
Rear Yard	5 (10) ft.

Setback – Parking	
Front Yard	20 (40) ft.
Side Yard	5 (15) ft.
Side Yard (Street)	20 (40) ft.
Rear Yard	5 (15) ft.

Setbacks in parentheses apply adjacent to R-1, R-1A and R-2 Districts.

10-17-5: **SUPPLEMENTAL PROVISIONS:**

(A) When structures within the R-3B District abut streets of higher carrying capacities than standard residential streets, the basic minimum setback for the principal structure from that street shall be increased to the following:

Minimum Setback (Yard)	Street Classification
50 ft.	Collector, minor arterial
80 ft.	Principle arterial

(B) Structures within the R-3B District shall not exceed thirty five feet (35') in height, except as provided in chapter 29 of this title.

(C) The maximum horizontal length of the above grade portion of any building in the R-3B District shall be two hundred feet (200'), as measured at the widest point between any two (2) edges on the structure.

[7-7-97 Amd. Sec. 5(B) Ord. 674] [7-1-02 Amd. Sec. 5(A) Ord. 851] [4-6-2010 Amd. Sec. 3A and 5(A)]

CHAPTER 17A

R-3C REGIONAL CENTER RESIDENTIAL DISTRICT

SECTION:

10-17A-1: Permitted Uses
10-17A-2: Permitted Accessory Uses
10-17A-3: Conditional Uses
10-17A-3A: Interim Uses
10-17A-4: Lot Area, Lot Width and Yard Requirements
10-17A-5: Supplemental Provisions

10-17A-1: **PERMITTED USES:** Within any R-3C Regional Center Residential District, no structure or land shall be used except for one or more of the following uses:

Uses permitted in the R-3B District.

10-17A-2: **PERMITTED ACCESSORY USES:** Within any R-3C Regional Center Residential District, the following uses shall be permitted accessory uses:

Accessory uses permitted in the R-3B District.

10-17A-3: **CONDITIONAL USES:** Within any R-3C Regional Center Residential District, no structure or land shall be used for the following uses except by conditional use permit.

Conditional uses allowed in the R-3B District.

10-17A-3A: **INTERIM USES:** Within any R-3C Regional Center Residential District, no structure or land shall be used for the following uses except by interim use permit.

Interim uses permitted in the R-1 district.

Land reclamation, mining and soil processing subject to chapters 8, 9, and 10 of this title.

10-17A-4: **LOT AREA, LOT WIDTH AND YARD REQUIREMENT:**

Lot Area (Interior)	20,000 sq. ft. + 2,000 sq. ft. for every dwelling unit over 10 units.
Lot Area (Corner)	22,000 sq. ft. + 2,000 sq. ft. for every dwelling unit over 10 units.
Lot Width	100 ft.

Setback – Principal Structure	
Front Yard	40 (50) ft. or 1.5 times height, as measured from nearest property line, whichever is greater.
Side Yard	30 (40) ft. or 0.6 (1.5) times height, as measured from nearest property line, whichever is greater.
Side Yard (Street)	40 (50) ft. or 1.5 times height, as measured from nearest property line, whichever is greater.
Rear Yard	30 (40) ft. or 0.6 (1.5) times height, as measured from nearest property line, whichever is greater.
Setback – Accessory Structure	
Front Yard	40 (50) ft.
Side Yard	5 (10) ft.
Side Yard (Street)	30 (30) ft.
Rear Yard	5 (10) ft.
Setback – Parking	
Front Yard	20 (40) ft.
Side Yard	5 (15) ft.
Side Yard (Street)	20 (40) ft.
Rear Yard	5 (15) ft.

Setbacks in parentheses apply adjacent to R-1, R-1A, R-2, and R-3A Districts.

10-17A-5: **SUPPLEMENTAL PROVISIONS:**

(A) When structures within the R-3C District abut streets of higher carrying capacities than standard residential streets, the basic minimum setback for the principal structure from that street shall be increased to the following:

Minimum Setback (Yard)	Street Classification
50 ft.	Collector, minor arterial
80 ft.	Principle arterial

(B) There shall be no height limit on structures within the R-3C District except as imposed by the setback requirements set forth earlier in this chapter.

(C) The maximum horizontal length of the above grade portion of any building in the R-3C District shall be four hundred feet (400'), as measured at the widest point between any two (2) edges on the structure.

[4-6-2010 Amd. Sec. 3A, 5(A) Ord. 1196]

CHAPTER 18

R-3D MANUFACTURED HOUSING DISTRICT

SECTION:

10-18-1: Permitted Uses
10-18-2: Permitted Accessory Uses
10-18-3: Conditional Uses
10-18-3A: Interim Uses
10-18-4: Lot Area, Lot Width and Yard Requirements
10-18-5: Manufactured Housing Support and Tie-Down Systems
10-18-6: Performance Standards for Manufactured Home Parks

10-18-1: **PERMITTED USES:** Within any R-3D Manufactured Housing District, no structure or land shall be used except for the following purpose:

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Manufactured homes

10-18-2: **PERMITTED ACCESSORY USES:** Within any R-3D Manufactured Housing District, no structure or land shall be used as an accessory use except for those accessory uses permitted in an R-1 District.

10-18-3: **CONDITIONAL USES:** Within any R-3D Manufactured Housing District, no structure or land shall be used for the following use except by conditional use permit:

Mobile home sales.

Single satellite earth station antenna in excess of one (1) meter in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one (1) meter in diameter, as regulated in chapter 29 of this title.

Towers as regulated in chapter 29 of this title.

10-18-3A: **INTERIM USES:** Within any R-3D Manufactured Housing District, no structure or land shall be used for the following uses except by interim use permit.

Interim uses permitted in the R-1 district.

10-18-4: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot area (interior)	3,600 square feet
Lot area (corner)	4,500 square feet
Lot width (interior)	40 feet
Lot width (corner)	50 feet
Setback – Principal Structure	
Front yard	15 feet
Side yard	10 feet
Side yard (street)	15 feet.
Rear yard	10 feet
Setback – Accessory Structure	
Front yard	15 feet
Side yard	5 feet
Side yard (street)	10 feet
Rear yard	5 feet
Setback – Parking	
Front yard	10 feet
Side yard	5 feet
Side yard (street)	10 feet
Rear yard	5 feet

10-18-5: **MANUFACTURED HOUSING SUPPORT AND TIE-DOWN SYSTEMS:** The Minnesota Department of Administration Building Code Division Rules for Manufactured Housing Support and Tie-Down Systems, authorized by Minnesota Statutes, Section 327.31 to 327.34, are hereby adopted by reference and made a part of this title as if fully set forth herein. All manufactured housing erected or which changes ownership after the effective date of this title shall be equipped with an anchoring and support system as defined and approved by state rules, and shall further be equipped with skirting to cover the undercarriage of the manufactured home. It shall be unlawful for anyone to own or occupy a manufactured home in violation of this title. Owners and/or operators of manufactured home parks shall not allow any manufactured home to remain in a manufactured home park in violation of this title.

10-18-6: **PERFORMANCE STANDARDS FOR MANUFACTURED HOME PARKS:**

(A) The minimum street width within R-3D Districts shall be twenty four feet (24'). Streets shall be surfaced with poured in place concrete or an approved alternative.

(B) A buffer yard of not less than thirty feet (30') in width shall be landscaped with appropriate grass, shrubbery and trees around the entire perimeter of the manufactured home park. This buffer yard shall be maintained by the owner of the manufactured home park.

(C) All waste material, debris, refuse, garbage, fuel or materials not currently in use for construction shall be stored indoors, or totally screened from the eye-level view from public streets and adjacent properties.

(D) All manufactured home parks shall have a central community building with laundry areas and washing machines.

(E) All manufactured home parks shall have a storm shelter or evacuation plan approved by the city.

(F) Parking:

1. Each manufactured home site shall have off-street parking space surfaced with concrete, bituminous, or approved equivalent for two (2) automobiles.

2. Each manufactured home park shall maintain a hard surfaced off-street parking lot for guests of occupants of at least one space for each five (5) coach sites.

3. Access drives off roads to all parking spaces and manufactured home sites shall be surfaced with concrete, bituminous, or approved equivalent according to specifications established by the city.

(G) Utilities:

1. All manufactured homes shall be served by a public water and sanitary sewer system.

2. All utilities shall be underground. There shall be no overhead wires or supporting poles except those essential for street or other lighting purposes.

3. Access shall be provided to allow the inspection of plumbing, electrical facilities and related mobile home equipment.

(H) The park shall have a street lighting plan approved by the city.

(I) All manufactured home parks shall have at least ten percent (10%) of the land area developed for recreational use (tennis courts, children's play equipment, swimming pool, golf green, etc.) developed and maintained at the owner/operator's expense.

[7-7-97 Amd. Sec. 3 Ord. 674]; [6-2-09 Amd. Sec. 1 Ord 1166];

CHAPTER 19

SPECIAL REQUIREMENTS FOR ALL BUSINESS DISTRICTS

SECTION:

10-19-1: Special Requirements And Performance Standards for All Business Districts
10-19-2: Special Requirements And Performance Standards In B-1 And B-3 Districts
10-19-2-1: Temporary/Seasonal Outdoor Sales Uses
10-19-3: Special Requirements And Performance Standards In B-2 And B-3 Districts
10-19-4: Special Requirements And Performance Standards In All B-3 Districts
10-19-5: Special Requirements And Performance Standards In B-2 Districts
10-19-6: Incidental Outdoor Seating For Food Service Businesses
10-10-7: Special Consideration for Properties Located In B-1, B-2, B-3, B-4 Districts Affected By Public Improvement Projects Resulting In Land Taking

10-19-1: SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS FOR ALL BUSINESS DISTRICTS:

(A) **Building Design and Materials:** All buildings shall be designed to accomplish the goals and policies of the Comprehensive Plan. Building materials shall be attractive in appearance, of a durable finish, and be of a quality that is compatible and harmonious with adjacent structures. All buildings shall be of good aesthetic and architectural quality to ensure they will maintain and enhance the property values of neighboring properties and not adversely impact the community's public health, safety and general welfare.

1. Design Elements: All new building fronts and refacing of existing buildings, shall include a minimum of three (3) of the following elements:

a. Accent materials;

b. A visually pleasing front entry that, in addition to doors, shall be accented a minimum of one hundred fifty (150) square feet around the door entrance for single occupancy buildings and a minimum of three hundred (300) square feet total for the front of multi-tenant buildings (this area shall be counted as one element);

c. Twenty five percent (25%) window coverage on each front that faces a street;

d. Contrasting, yet complementary material colors;

e. A combination of horizontal and vertical design features;

f. Irregular building shapes; or

g. Other architectural features in the overall architectural concept. If the applicant and the Development Review Committee (DRC) cannot agree on the proposed building exterior elevations, the applicant shall be required to make an application for a conditional use permit to prove compatibility.

2. Accent Materials: Accent materials shall be wrapped around walls visible from public view. Painting shall not be substituted for visual relief, accenting, or a required element. No wall shall exceed one hundred feet (100') in length without visual relief. Visual relief may be defined as the incorporation of design features such as windows, horizontal and vertical patterns, contrasting material colors, or varying wall depths. Use of fiber cement trim, soffit and fascia shall be allowed as accent materials.

3. Major Exterior Materials: Major exterior materials of all walls including face brick, stone, glass, stucco, synthetic stucco, fiber cement vertical panel siding, architectural concrete and precast panels shall be acceptable as the major exterior wall surface when they are incorporated into an overall design of the building. Stucco, synthetic stucco or fiber cement vertical panel siding shall not be allowed within twenty four inches (24") from grade. Use of rain screens, panelized systems, or curtain walls are encouraged and will be verified for high quality design and materials through the Development Review Committee. Fiber cement seam lines shall be architecturally integrated into the building design so that they are not visible. Seam lines can be filled, covered by other accent material or other method thereby making the seam lines invisible. Color impregnated decorative block shall also be allowed as a major exterior wall material, and shall be required to be sealed. All materials shall be color impregnated with the exception of allowing architectural concrete precast panel systems and fiber cement siding to be painted. Painting shall not be allowed on color impregnated, major exterior materials. Request for approval of cast in place systems shall be through a conditional use permit or planned unit development, whichever is deemed appropriate by city staff. If the architectural precast panel systems are painted, they shall be properly prepared and maintained regularly to prevent peeling, stripping, shading or any other form of deterioration or discoloration. Proof of manufacturer's painting specifications shall be supplied prior to issuance of a building permit. This subsection (A)3 shall also apply to all exterior repairs, remodeling, or expansion of existing buildings that require a building permit.

4. Restricted Exterior Materials: Unadorned pre-stressed concrete panels, whether smooth or raked, nondecorative concrete block, sheet metal, corrugated metal or unfinished metal shall not be used as exterior materials. This restriction shall apply to all principal structures and to all accessory buildings except those accessory buildings not visible from any property line. No more than twenty five percent (25%) of any exterior wall on a building shall be fiber cement siding, wood or metal accent material. This twenty five percent (25%) limit may be exceeded when used in a panelized system that consist of prefabricated, or factory-manufactured, panels that form a structural envelope, and significantly simplify on-site framing, and request for approval shall be through a conditional use permit or planned unit development.

5. Visual Relief: No wall shall exceed one hundred feet (100') in length without visual relief. "Visual relief" may be defined as a varying design of the building by incorporating design features such as windows, horizontal and vertical patterns, contrasting material colors or varying wall depths.

6. Roofs: Roofs which are exposed or an integral part of the building aesthetics shall be constructed only of commercial grade asphalt shingles, wood shingles, standing seam metal, slate, tile, or copper. Flat roofs, which are generally parallel with the first floor elevation, are not subject to these material limitations.

7. Building and Roofing Materials: All building and roofing materials shall meet current accepted industry standards, and tolerances, and shall be subject to review and approval by the

development review committee for quality, durability, and aesthetic appeal. For all new buildings and building exterior renovations, the applicant shall submit to the city product samples, color building elevations, and associated drawings which illustrate the construction techniques to be used in the installation of such materials. Building and roofing materials not specifically approved in this section may be allowed by a conditional use permit or planned unit development only after it is demonstrated that the proposed material is equal to or better than approved materials. The long-range maintenance of the proposed material shall be incorporated as a condition of the approval and filed on the property.

(B) **Trash And Recyclable Materials:** All trash, recyclable materials, and trash and recyclable materials handling equipment shall be stored within the principal structure or stored within an accessory structure constructed of building materials compatible with the principal structure enclosed by a roof, and readily served through swinging doors or an overhead door on tracks. Compactors shall be one hundred percent (100%) screened from ground level view from public streets and adjacent properties. Existing uses shall comply with the enclosure requirements listed in this Section within six (6) months of receiving notice from the city. For the purposes of this section, "trash" means "mixed municipal solid waste" as defined under section 7-7-1 of this code.

(C) **Off Street Parking:** Design and maintenance of off street parking areas in accordance with section 10-7-26 of this title.

(D) **Accessory Structures:** Garages, accessory structures, screen walls and exposed areas of retaining walls shall be of a similar type, quality and appearance as the principal structure.

(E) **Utilities:** The view of all rooftop equipment and related piping, ducting, electrical and mechanical utilities abutting a street on buildings constructed after January 1, 2006 shall be screened from the ground level view. Screening may include parapet walls, penthouses, or other architecturally integrated elements. Wood fencing or chain link with slats shall not be used for screening. The term '*ground level view'* for this provision shall be defined as *the view of the building from the furthest point of the width of the right-of-way from the property line(s) that abut a street*. A cross-sectional drawing shall be provided that illustrates the sight lines from the ground level view. For buildings constructed prior to January 1, 2006, for replacement of existing units, remodeling, and building expansions, the ground level view of all rooftop equipment and related piping, ducting, electrical and mechanical utilities shall be painted to match the building, designed to be compatible with the architectural treatment of the principal structure or screened by the use of parapet walls. Wood fencing shall not be used for screening.

(F) **Ground Mechanical Equipment:** Ground mechanical equipment shall be one hundred percent (100%) screened from contiguous properties and adjacent streets by opaque landscaping, or a screen wall shall be provided to be compatible with the architectural treatment of the principal structure.

(G) **Outdoor Storage:** There shall be no outdoor storage of either materials or products, except through the issuance of a conditional use permit where permitted in the underlying zoning district.

(H) **External Loading and Service Areas:** External loading and service areas must be one hundred percent (100%) screened from the ground-level view from contiguous residential or commercial properties and adjacent streets, except at access points.

1. External dock, service and loading doors that face residential uses shall remain closed at all times except during loading and unloading.

(I) **Compatibility:** All structures shall be compatible with other structures in the area.

(J) Outdoor speakers shall be prohibited for all uses abutting a residential use except by approval of a conditional use permit.

(K) Incidental repair, processing or storage associated with a permitted use in a Business or Industrial zoning district may be conducted subject to the following:

1. Said incidental repair, processing or storage does not occupy more than thirty percent (30%) of the gross floor area of the tenant space.

2. If the business abuts or is located across the street from a residential use said repair, processing or storage shall be conducted completely within the building or facility with all business doors closed.

10-19-2: **SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS IN B-1 AND B-3 DISTRICTS:** No limit shall be placed on the height of buildings in B-1 and B-3 districts except that any building exceeding twenty five feet (25') in B-1 districts or thirty five feet (35') in B-3 districts shall be by a conditional use permit.

10-19-2-1: **TEMPORARY/SEASONAL OUTDOOR SALES USES:**

(A) **Permit Required:** No person shall conduct temporary/seasonal outdoor sales, without first having received a permit as provided in this section.

(B) **Permit Application:** The application for a permit shall include a site plan, a list of materials to be sold or displayed, and the duration of the sale.

(C) **Permit Types:** A new permit shall be required for all sales located on sites where a permit has not been issued during the preceding twelve (12) month period, and for all sales that include a different site plan, list of materials to be sold, or size and/or location of the sales area from the most recently approved permit. A renewal permit shall be required for a sale that is substantially similar to the most recently approved sale at the site, provided that the most recently approved permit was issued during the preceding twelve (12) month period.

(D) **Permit Fee:** The applicant shall pay the new or renewal permit fee as established annually by the city council. The fee for new and renewal permits shall also include the cost of a sign permit. The permit fee shall be paid in full with the application.

(E) **Duration:** Permits issued under this section shall be for a period not to exceed ninety (90) days. No more than two (2) permits shall be issued to the same applicant or property in any calendar year.

(F) **Exemptions:**

1. This section shall not apply to schools, academies, universities, libraries, churches, hospitals or similar institutions when the sale is conducted on their own property.

(G) **Permit Applicant:** The applicant for the permit shall be the owner of the property. If the sale is operated by a person other than the property owner, the owner must notify the city of the operator. The property owner is responsible for the actions of the operator and the conditions of the permit.

(H) **Performance Standards:** A new or renewal permit shall be issued by the city provided the applicant demonstrates that the following performance standards will be met:

1. Off-street parking and loading areas are provided where required.

2. No public address system shall be used.

3. The number, area, bulk, height, location, frequency, and duration of such uses is controlled. The site shall be kept in a neat and orderly fashion, free from litter, refuse, debris, junk, or other waste which results in offensive odors or unsightly conditions.

4. Display of items shall be arranged in as compact a manner as reasonably practicable with particular reference to vehicle and pedestrian safety and convenience, traffic flow and control, and access in case of fire or other catastrophe.

5. No uses or displays shall be permitted in required parking areas, required green areas, parking setback areas, or any right of way or other public property.

6. Signage shall be limited to one sign not to exceed thirty two (32) square feet. The sign may be a banner, shall have a professional appearance, and shall be mounted or erected in an appropriate location. This limitation applies to all signs associated with the sale, including those affixed to vehicles. The sign may be illuminated but must comply with all requirements of chapter 30 of this title.

7. All lighting shall comply with the lighting standards of section 10-7-36 of this title.

8. The sale and associated parking shall not obstruct parking spaces needed by any permanent business established on the site except that when a sale is held only during the time when all permanent businesses on the site are closed, parking spaces may be obstructed.

9. No portion of the use or event shall take place within one hundred feet (100') of any residential buildings.

10. An antique market sale shall provide one parking stall per one hundred (100) square feet of vendor display area plus one parking stall per vendor. All parking shall be on site or on an adjacent parcel when approved as part of the initial review.

11. An antique market sale shall be limited to only one day per calendar week during a consecutive ninety (90) day permit period, and shall not exceed fourteen (14) days throughout the ninety (90) day period.

12. Antique market sales are limited to the B-2, B-3, and B-4 zoning districts only.

(I) **Denial of Renewal Permit:** No renewal permit shall be issued if the operator failed to comply with any performance standards during the term of a previously issued new or renewal permit, except upon the approval of the planning commission.

(J) **Denial for Noncompliance:** If the city staff denies a permit, it shall notify the applicant in writing, stating the ways in which the proposed use does not comply with the standards required by this title.

(K) **Permittee:** A temporary/seasonal outdoor sales permit shall be issued for a particular use and to the property owner making application for such permit. Such permit shall not be transferred or assigned for use by another without the written consent of the city. However, such consent by the city shall not be unreasonably withheld.

(L) **Revocation:** Failure to comply with any performance standard or any other violation of this title, shall be a misdemeanor and shall also constitute sufficient cause for the termination of the permit by the city council following a public hearing.

10-19-3: SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS IN B-2 AND B-3 DISTRICTS:

(A) **Motor fuel stations shall be subject to the following standards:**

1. Canopy Height: The total height of any overhead canopy or weather protection shall not exceed twenty feet (20') in height.

2. Open Storage: Open storage of motor vehicles shall not be permitted for a period of more than forty-eight (48) hours and then only if it is screened.

3. Sales, Rentals Prohibited: No sales or rental or motor vehicles or trailers or campers shall be permitted.

4. Goods For Sale: All goods for sale by a motor fuel station convenience store other than commercial freezers for ice and petroleum based products required for the operation and maintenance of motor vehicles shall be displayed within the principal motor fuel station structure. No displays shall be permitted in required parking or driveway areas, landscape areas, required setback areas, or any right of way or other public property. Displays may be permitted on sidewalks, only if they leave at least four feet (4’) of sidewalk width available to pedestrians.

5. Compatibility: Each motor fuel station shall be compatible with the area in which it is located.

6. Landscaping: A minimum ten foot (10') landscaped yard shall be planted and maintained behind the property line along all public streets. A landscaped yard not less than five feet (5') wide shall be maintained along exterior property lines.

7. Motor Fuel Dispenser Location: Motor fuel dispensers shall be located at least thirty feet (30') from a property line, and one hundred feet (100') from an R-1, R-1A, or R-2 district property line. (Ord 444, 5-4-92)

8. Setbacks:

a. Structures shall be set back:

(1) Front: 30 (60) feet

(2) Side: 30 (50) feet

(3) Rear: 30 (50) feet

b. Setbacks in parentheses apply to lot lines adjacent R-1, R-1A and R-2 districts.

9. Lot Size and Width:

a. Lot Size:

(1) Motor fuel station (Class I): Twenty thousand (20,000) square feet.

(2) Motor fuel station (Class II): Thirty thousand (30,000) square feet.

b. Lot Width:

(1) Motor fuel station (Class 1): Two hundred feet (200').

(2) Motor fuel station (Class II): One hundred fifty feet (150').

10. Electronic Speaker Devices: Electronic speaker devices shall be regulated as provided in section 10-7-9 of this title. Exterior speakers shall not be allowed on sites that abut residential uses unless expressly permitted as part of a conditional use permit.

11. Car Wash Stacking Requirements: Car wash stacking requirements shall be regulated as provided in section 10-7-26 of this title.

12. Adjacent Parcels: Any parcel which adjoins another parcel at one corner and any parcel which is across the street from a motor fuel station parcel, except for a principal or intermediate arterial, shall be considered to be adjacent for the administration of this section.

(B) **Restaurants shall be subject to the following standards:**

1. A proposed restaurant shall be specifically identified as a fast food or standard restaurant.

2. No restaurant shall be allowed on a parcel of less than one and one-half (1½) acres.

3. A minimum of thirty percent (30%) of the site shall be developed and maintained as landscaped areas with appropriate species to provide year-round interest.

4. Where possible, all outside parking spaces shall be located to the side and/or rear of the restaurant.

(C) Buildings containing a bowling alley, electronic game room containing six (6) or more electronic games, billiard and pool room containing six (6) or more tables, drive-in theater, skating rink, gymnasium, night club, liquor store or fraternal organization shall not be located within one hundred feet (100') of any R district, except that the structure for a fraternal organization may be located within one hundred feet (100') of an R district when that structure has a common recreation center of a multi-family project.

(D) **Multiple tenant retail sales and service facilities shall be subject to the following standards:**

1. The physical design may include more than one building. If there is an open space between two (2) buildings, the space shall not be less than one-half (½) the sum of the heights of the two (2) buildings.

2. No building shall be nearer than sixty feet (60') to any exterior lot line except when abutting or across the street from an R district in which case the minimum distance shall be one hundred feet (100').

3. The design shall include adequate internal circulation drives not less than twenty four feet (24') in width which are exclusive of the required parking areas.

4. The driveway curb cuts to the development shall not exceed twenty six feet (26') in width and be located not less than sixty feet (60') from all intersecting streets.

10-19-4: SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS IN ALL B-3 DISTRICTS:

(A) **Office-warehouse facilities** shall be subject to the provisions of section 10-7-44 of this title:

(B) **Farmer's Markets** shall be subject to the following standards:

1. No portion of the use or event shall take place within two hundred feet (200'), as measured in a straight line from the closest point of the property line of the property upon which the farmer's market is located, to the property line of any R-1 zoned property with residential buildings.

2. A farmer's market shall be conducted only within a parking lot that has a minimum of five hundred (500) off-street parking spaces. It is not required that all five hundred (500) spaces be used for the market.

3. A farmer's market shall not utilize parking spaces designated for retail food or sales establishments. This standard shall be applied even if the retail food or sales establishment is closed for the day.

4. A farmer's market shall have a minimum of twenty (20) producers selling products at all times.

5. A farmer's market shall provide one and a half (1½) parking stalls per producer and one and a half (1½) customer parking stalls per producer.

6. No uses or displays shall be permitted in required green areas, parking setback areas, or any right-of-way or other public property.

7. Signage shall be limited to one sign not to exceed thirty two (32) square feet. The sign may be a banner, shall have a professional appearance, and shall be mounted or erected in an appropriate location. The sign may be illuminated, but must comply with all requirements of chapter 30 of this title.

8. All lighting shall comply with the lighting standards of section 10-7-36 of this title.

9. All producer merchandise shall be unloaded prior to the opening of the market and confined to the off-street parking lot area. No on-street parking or unloading shall be allowed.

10. No public address system or speakers shall be used.

11. The site shall be kept in a neat and orderly fashion, free from litter, refuse, debris, junk, or other waste, which results in offensive odors or unsightly conditions.

12. Display of items shall be arranged in as compact a manner as reasonably practicable with particular reference to vehicle and pedestrian safety and convenience, traffic flow and control, and access in case of fire or other emergency.

13. No person shall conduct a farmer's market without first having received an interim use permit (IUP).

14. An application for an IUP shall include a site plan, a list of all products and materials with quantities to be sold or displayed, and the intended dates, times, and duration of the market.

15. All products, materials, quantities to be sold or displayed, and the dates, times, and duration of the market must be approved by the city council.

16. The applicant shall pay the IUP fee and escrow as established annually by the city council.

17. If the farmer's market is operated by a person other than the property owner, the property owner must notify the city of the full name, address, date of birth and telephone number of the operator in writing. The property owner is responsible for the actions of the operator and for compliance with the conditions of the IUP.

10-19-5: SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS IN B-2 DISTRICTS:

(A) **Maximum Building Height:** Thirty feet (30').

(B) **Maximum Building Size:** Fifteen thousand (15,000) square feet. More than one building may be built on a site. Maximum building size of up to thirty thousand (30,000) square feet allowed by conditional use permit.

(C) **Roof Types:** Roofs shall be pitched, mansard, or other roof types commonly found in the adjacent residential area.

(D) **Freestanding Signs**: Monument signs only, with a maximum height of six feet (6') allowable.

10-19-6: **INCIDENTAL OUTDOOR SEATING FOR FOOD SERVICE BUSINESSES:**

(A) Food service businesses, including but not limited to, bakeries, delicatessens, coffee and/or tea shops, and restaurants, may provide outdoor temporary seating for their patrons, provided that the following requirements are met and an annual incidental outdoor seating permit is approved by the planning department:

1. The seating shall be located on private property.

2. The seating shall be of good patio or café type furniture that enhances the appearance of the business.

3. The outdoor seating area shall be defined with the use of landscaping, temporary fencing or other means that contains the tables and chairs for the use as demonstrated on a site plan and approved by city staff.

4. No alcoholic beverages or food shall be served to persons outside of the designated outdoor seating area. Signage shall be posted that restricts consumption of alcohol outside of the designated outdoor seating area as approved by city staff.

5. Patrons shall access the outdoor seating area through the main entrance or host station and shall be seated by a staff person and all full service restaurants with wait staff service.

6. The seating shall be located so as not to compromise safety. Seating shall not obstruct the entrance or any required exits or be located on landscaping or parking areas. If located on private sidewalks or walkways, it shall be located so as to leave a minimum of a four foot (4') wide passageway for pedestrians.

7. No additional parking is required for thirty (30) seats or less. If public parking is available either in a ramp or adjacent on-street, then no additional parking is required. Any additional seating over thirty (30) seats shall provide required parking based on one (1) space per three (3) seats. Shared parking will be considered and may be approved by staff.

8. Any proposed outdoor seating plan over fifty (50) or more seats shall be by conditional use permit.

9. All exterior sound equipment shall be shut off at ten o'clock (10:00) p.m. as regulated in title 7, chapter 1 of this code.

10. Lighting shall be permitted to the extent that it only illuminates the designed area. Lighting cannot shine or cause a glare upon other public or private property outside the designated area or as permitted in section 10-7-36 of this title.

11. Hours of operation shall be in accordance with section 3-1-8-5(A) of this code.

12. Any proposed outdoor seating area on property abutting an R residential zoning district shall be by conditional use permit.

13. The business owner shall regularly clean the seating area so that it is litter-free.

10-19-7: **SPECIAL CONSIDERATION FOR PROPERTIES LOCATED IN B-1, B-2, B-3, B-4 DISTRICTS AFFECTED BY PUBLIC IMPROVEMENT PROJECTS RESULTING IN LAND TAKING:**

(A) Properties that become non-conforming in terms of green area, setbacks and parking requirements as a direct result of a public improvement project resulting in loss of land (taking) for public roadway right of way or easements shall be required to apply for a variance when proposing any building or parking expansion affected by the land taking. Such variance requests will be reviewed by the planning commission and city council. Variance requests resulting from publicly acquired right of way and easements shall constitute a hardship as defined in section 10-5-4(A) of this title as the "plight of the landowner is not created by the landowner." Variances to other performance standards shall be considered as set forth in section 10-5-4 of this title.

(B) Variances for setbacks, green area and parking requirements shall be based on the following criteria.

1. Setback variances for principle and accessory structures or parking shall only be considered on the side of the structure(s) or parking lot where the public taking resulted in the non-conformity.

2. Maximum setback variance that will be considered shall be the existing setback before the taking less the amount of the taking. A minimum setback for primary and accessory structures shall be ten feet (10'). A minimum setback for parking shall be five feet (5').

3. Maximum reduction in required green area for the total land area considered by a variance shall be the percent required by section 10-30A-8 of this title at the time of the taking, less the percent removed as a result of the taking. Minimum required green area shall not be less than ten percent (10%) of the total lot area after taking.

4. Maximum reduction in required parking spaces considered by a variance shall be only the spaces eliminated as a direct result of the taking. If a property has an approved proof of parking plan with spaces not yet utilized as parking at the time of the taking, the owner shall install such spaces to replace those eliminated by the taking prior to consideration of a variance.

[5-4-98 Amd. Sec. 4 Ord. 713] [2-7-00 Amd. Sec. 1 (A–K) Ord. 783] [7-1-02 Amd. Sec. 1 (I), Sec. 2-1 (F) Ord. 851] [5-17-04 Amd. Sec. 1 (A) 2., 3., 4., and 5. Ord 923] [7-6-04 Amd. Sec. 6 Ord. 931] [12-6-04 Add Sec. 7 Ord 951] [9-6-05 Amd. Sec. 1 (E) Ord. 991]; [8-19-08 Amd. Secs. 1, 2, 3, 4, 5 Ord. 1132]; [12-2-08 Amd. Sec. 1(A) (3, 4, 5) Ord 1143]; [6-2-09 Amd. Sec. 3 (A) Ord. 1165]; [4-6-2010 Amd. Secs. 1, 2-1(H), 2-1(M), Ord. 1196];

CHAPTER 20

B-1 OFFICE BUSINESS DISTRICT

SECTION:

10-20-1: Purpose And Intent
10-20-2: Permitted Uses
10-20-3: Permitted Accessory Uses
10-20-4: Conditional Uses
10-20-5: Interim Uses
10-20-6: Lot Area, Height, Lot Width And Yard Requirements

10-20-1: **PURPOSE AND INTENT:** The purpose of the B-1 Office Business District is to provide areas for commercial office and non retail uses that are compatible with commercial offices.

10-20-2: **PERMITTED USES:** Within any B-1 Office Business District, no structure of land shall be used, except for one or more of the following uses:

Bus benches, shelters and transit facilities provided they comply with title 8 of this code.

Clinics for human care.

Commercial zero lot line development, pursuant to section 10-7-41 of this title.

Day care nursery.

Government buildings where the use conducted is customarily considered to be an office use.

Health clubs.

Offices of a general nature where the operations do not include retail sales or warehousing from the site.

Research centers.

Schools, academies, colleges, universities, libraries. (Ord. 244, 11-15-82; amd. Ord. 315, 3-21-88)

10-20-3: **PERMITTED ACCESSORY USES:** Within any B-1 Office Business District, the following uses shall be permitted accessory uses:

Antennas mounted on an existing structure, not exceeding fifteen feet (15’) above the highest point of the structure, as regulated by chapter 29 of this title.

Buildings temporarily located for purposes of construction on the premises for a period not to exceed time necessary to complete construction.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Incidental repair, processing, or storage necessary to conduct a permitted principal use subject to section 10-19-1(K) of this title.

Private garages, off-street parking and loading spaces as regulated in this title.

Public telephone booths.

Signs as regulated in chapter 30 of this title.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

Tenant restaurants, cafeterias, and retail service limited to tenants of the building, provided that they be essentially limited to providing service to the users of the permitted use, and that no signs or other evidence of these uses are visible from the exterior of the building.

Therapeutic massage businesses pursuant to title 3, chapter 15 of this code.

10-20-4: **CONDITIONAL USES:** Within any B-1 Office Business District, no structure or land shall be used for the following uses except by conditional use permit:

Accessory structures or uses other than those listed as permitted.

Antennas mounted on an existing structure, exceeding fifteen feet (15’) above the highest point of the structure, as regulated by chapter 29 of this title.

Art studio, interior decorating studio, photographic studio, music studio provided no retail sales are made of products not manufactured on the site.

Essential service structures including, but not limited to, buildings such as telephone exchange stations, booster or pressure stations, elevated tanks, wells and pumping stations, lift stations and electric power substations.

Funeral homes and mortuaries.

Historical buildings, museums, art institutions, galleries and theaters.

Nursing home, intermediate care facility, long term care facility, and residential health care facility, provided the site shall contain not less than six hundred (600) square feet of lot area for each person to be accommodated and that no building be located less than fifty feet (50’) from the lot line; hospitals for human care, provided that all buildings are not located less than sixty feet (60’) from the lot line of an abutting R district.

Radio and television studios.

Single satellite earth station antenna in excess of two meters (2 m) in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) or less in diameter, are regulated in chapter 29 of this title.

Therapeutic massage businesses pursuant to title 3, chapter 15 of this code.

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

10-20-5: **INTERIM USES:** Within any B-1 Office Business District, no structure or land shall be used for the following purposes except by interim use permit.

Interim uses permitted in the R-1 district.

Required structures need not be accessory structures and need not comply with the special requirements of subsection 10-19-1(A) of this title. The landscaping requirements of subsection 10-30A-9(A) of this title may be waived where appropriate.

10-20-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:** The following minimum requirements shall be observed subject to additional requirements, exceptions and modifications as set forth in this chapter and chapter 19 of this title:

Lot area	20,000 square feet
Lot width	100 feet
Setback - principal structure	
Front yard	30 (30) feet
Side yard	10 (30) feet
Side yard (street)	30 (30) feet
Rear yard	20 (30) feet
Setback -accessory structure	
Front yard	30 (30) feet
Side yard	5 (30) feet
Side yard (street)	30 (30) feet.
Rear yard	8 (30) feet
Setback - parking	
Front yard	30 (30) feet
Side yard	5 (30) feet
Side yard (street)	30 (30) feet
Rear yard	8 (30) feet

Setbacks in parentheses apply adjacent to residential districts.

[7-7-97 Sec.1, 2, 3 Ord. 674]; [10-6-97 Sec. 20 Ord. 687]; [7-19-99 Sec. 3 Ord. 760]; [7-6-04 Amd. Sec. 4 Ord. 932]; [12-4-06 Sec. 2 Ord 1056]; [8-19-08 Amd Secs. 1, 2, 3, 3A, 4, Ord. 1132]; [6-2-09 Amd. Sec. 2 Ord. 1166]; [4-6-2010 Amd. Secs. 2, 3, 4, 6 Ord. 1196]

CHAPTER 21

B-2 NEIGHBORHOOD BUSINESS DISTRICT

SECTION:

10-21-1: Purpose And Intent
10-21-2: Permitted Uses
10-21-3: Permitted Accessory Uses
10-21-4: Conditional Uses
10-21-5: Interim Uses
10-21-6: Lot Area, Lot Width and Yard Requirements

10-21-1: **PURPOSE AND INTENT:** The purpose of the B-2 Neighborhood Business District is to provide for the establishment of highly limited scale neighborhood commercial centers that offer basic convenience-type goods and services to the immediately surrounding residential neighborhoods.

10-21-2: **PERMITTED USES:** Within any B-2 Neighborhood Business District, no structure or land shall be used except for one or more of the following neighborhood retail sales and service businesses supplying commodities or performing a service primarily for residents of the surrounding neighborhood:

Any use permitted in the B-1 district except research centers.

Antique market, subject to section 10-19-2-1 of this title.

Appliance store.

Art and school supply store.

Bakery goods sales and baking of goods for the retail sales on premises.

Bank.

Barber shop.

Beauty shop.

Bicycle sales and repair.

Book store.

Camera and photographic supply and processing store.

Candy, ice cream, popcorn, nuts, frozen dessert and soft drink shop, but not of the drive-in type.

Clothing Store.

Convenience store.

Delicatessen.

Drug store.

Dry cleaning and laundry pickup stations including incidental pressing and repair.

Florist.

Furniture.

Gift shop.

Grocery store, fruit or vegetable store.

Hardware store.

Hobby store including handicraft classes not to exceed ten (10) students.

Jewelry sales and jewelry repair store.

Laundromat, self-service.

Library.

Locksmith.

Meat market but not including processing for a locker.

Medical and dental clinic or offices.

Multiple tenant retail sales and service facilities subject to 10-19-3(D) of this title.

Music store.

Newsstand.

Office supply and stationery store.

Paint, wallpaper sales.

Photographic studio.

Pipe and tobacco shop.

Post office.

Record shop.

Rugs and floor covering sales.

Shoe sales and repair.

Small appliance repair shop.

Sporting goods store.

Temporary/seasonal outdoor sales uses, subject to the provisions of section 10-19-2-1 of this title.

10-21-3: **PERMITTED ACCESSORY USES:** Within any B-2 Neighborhood Business District, the following uses shall be permitted accessory uses:

Any accessory use permitted in the B-1 district.

Incidental repair, processing or storage necessary to conduct a permitted principal use subject to section 10-19-1(K) of this title.

Restaurant within a building having a principal use other than a restaurant subject to section 10-19-3(B) of this title.

10-21-4: **CONDITIONAL USES:** Within any B-2 Neighborhood Business District, no structure or land shall be used for the following uses except by conditional use permit:

Accessory car wash subject to section 10-7-43.

Any conditional use allowed in the B-1 district.

Car wash as a principal use.

Churches and other places of religious assembly, provided that the principal structure and any accessory structures used for assembly shall be located at least fifty feet (50') from any lot line adjacent to a residential zoning district. This subsection shall apply even if the religious use does not occupy the entire structure. For the purposes of this subsection, the fifty foot (50') setback shall not apply to any property line adjacent to an arterial roadway, including an interstate freeway.

Liquor store subject to the requirements of 10-19-3(C) of this title and title 3 of this code.

Motor fuel stations subject to the requirements of section 10-19-3(A) of this title.

Tavern.

Theaters.

Essential service structures.

Restaurants (freestanding) subject to 10-19-3(B) of this title.

10-21-5: **INTERIM USES:** Within any B-2 Neighborhood Business District, no structure or land shall be used for the following uses except by interim use permit.

Interim uses permitted in the B-1 district.

10-21-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:** The following minimum requirements shall be observed subject to additional requirements, exceptions and modifications as set forth in chapter 19 of this title.

Lot area	20,000 square feet
Lot width	100 feet
Setback - principal structure	
Front yard	30 (30) feet
Side yard	10 (30) feet
Side yard (street)	30 (30) feet
Rear yard	30 (30) feet
Setback - accessory structure	
Front yard	30 (30)[1] feet
Side yard	10 (30) feet
Side yard (street)	20 (30) feet
Rear yard	8 (30) feet
Setback - parking	
Front yard	10 (30) feet
Side yard	5 (30) feet
Side yard (street)	10 (30) feet
Rear yard	5 (30) feet

Setbacks in parentheses apply adjacent to residential districts.

Note:

1. 30 feet or 1½ times the building height, whichever is greater.

[7-6-04 Amd. Sec. 4 Ord 932] [8-19-08 Amd. Secs. 1, 2, 3, 3A, 4, 5 Ord. 1132]; [4-6-2010 Amd. Secs. 2, 3, 4, 6 Ord. 1196]

CHAPTER 22

B-3 GENERAL BUSINESS DISTRICT

SECTION:

10-22-1: Purpose And Intent
10-22-2: Permitted Uses
10-22-3: Permitted Accessory Uses
10-22-4: Conditional Uses
10-22-5: Interim Uses
10-22-6: Lot Area, Lot Width And Yard Requirements

10-22-1: **PURPOSE AND INTENT:** The purpose of the B-3 General Business District is to provide an area of service facilities to the motoring public. Because of the unique character of this type of commercial activity and its great dependence upon transient trade and traffic, and because of the greater than normal adverse effects created by the uses within this district, the location of such activities are critical and should be developed either within other commercial spheres adjacent to arterial traffic routes or as well-buffered areas adjacent to major streets. This district is also intended as a business district which may be located adjacent to shopping centers or other retail business districts, thus keeping the basic retail areas compact and convenient, or in separate areas which may be located in close proximity to a major street or highway, in order that highway service types of land uses can be provided.

10-22-2: **PERMITTED USES:** Within any B-3 General Business District, no structure or land shall be used except for one or more of the following uses:

Any use permitted in the B-1 and B-2 districts.

Auto accessory store.

Automobile and other vehicles of transportation sales when conducted entirely within a building.

Auto repair.

Boats and marine sales when conducted entirely within a building.

Building material sales, provided it is conducted entirely within a building.

Commercial greenhouse provided it is conducted entirely within a building.

Laundry service.

Furniture sales.

Garden supply store, provided it is conducted entirely within a building.

Interior decorating studio.

Motels, motor hotels and hotels.

Newspaper and publishing office.

Office and wholesale showroom subject to section 10-7-44 of this title.

Optical and jewelry manufacturing.

Pawnshop, licensed under title 3, chapter 24 of this code; provided, that any such use shall not be located closer than one mile to any other such use, measured at the property lines, and that such use shall not be open to the public between the hours of nine o'clock (9:00) p.m. and nine o'clock (9:00) a.m.

Pet shop, provided the operation shall not include the boarding of pets on the site, the maintaining of pens or cages outside the building or the creation of an offensive odor or noise.

Photographic supplies and processing of film and prints.

Picture framing.

Printing shop.

Radio and television repair.

Seat cover, upholstery and drapery shop.

Sexually oriented business-principal. (Ord. 244, 11-15-1982; amd. Ord. 328, 9-19-1988; Ord. 542, 9-19-1994; Ord. 589, 10-16-1995; Ord. 932, 7-6-2004)

10-22-3: **PERMITTED ACCESSORY USES:** Within any B-3 General Business District, the following uses shall be permitted accessory uses:

Any accessory use permitted in B-1 and B-2 districts.

Incidental repair, processing, or storage necessary to conduct a permitted principal use subject to section 10-19-1(K) of this title.

Sexually oriented business-accessory.

10-22-4: **CONDITIONAL USES:** Within any B-3 General Business District, no structure or land shall be used for the following uses except by a conditional use permit:

Any conditional use allowed in B-1 and B-2 districts.

Animal hospital or clinic; kennel.

Armories, convention hall subject to title 3 of this code.

Bowling alleys, electronic game rooms, billiard and pool rooms, drive-in theaters, skating rinks and gymnasiums, subject to 10-19-3(C) of this title.

Bus terminals.

Electrical service, heating, plumbing, appliances, upholstery or air conditioning service shop.

Fraternal organizations subject to section 10-19-3(C) of this title and tilte 3 of this code.

Liquor store, night club subject to section 10-19-3(C) of this title and title 3 of this code.

Mini-storage.

Nursery.

Office warehouse subject to the requirements of section 10-7-44 of this title.

Open sales/rental lot subject to the requirements of section 10-7-46 of this title.

Open storage lot subject to the requirements of section 10-7-45 of this title.

Sports arenas and stadiums.

Stone and monument sales.

Television and radio stations.

10-22-5: **INTERIM USES:** Within any B-3 General Business District, no structure or land shall be used for the following uses except by interim use permit.

Farmers' markets subject to the requirements of section 10-19-4 of this title.

Interim uses permitted in the B-1 district.

Land reclamation, mining and soil processing subject to chapters 8, 9 and 10 of this title.

Recycling and reclamation of nonhazardous materials, when conducted entirely within a building.

10-22-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:** The following minimum requirements shall be observed subject to additional requirements and exceptions contained in chapter 19 of this title.

Lot area	20,000 square feet
Lot width	100 feet
Setback -principal structure	
Front yard	30 (30)[1] feet
Side yard	10 (30) feet
Side yard (street)	30 (30) feet
Rear yard	30 (30) feet

Setback - accessory structure	
Front yard	30 (30)[1] feet
Side yard	10 (30) feet
Side yard (street)	30 (30) feet
Rear yard	30 (30) feet
Setback – parking	
Front yard	10 (30) feet
Side yard	5 (30) feet
Side yard (street)	10 (30) feet
Rear yard	10 (30) feet

Setbacks in parentheses apply adjacent to Residential Districts.

Note:

1. 30 feet or 1½ times the building height, whichever is greater.

[7-7-97 Amd. Sec. 3 Ord. 674]; [5-4-98 Amd. Sec. 3(A) Ord. 713]; [2-7-00 Amd. Sec. 3 Ord. 783]; [7-1-02 Amd. Secs. 3, 4 Ord. 851; [7-6-04 Amd. Secs. 1, 4 Ord. 932]; [8-19-08 Amd. Secs. 1, 2, 3, 3A, 4,Ord. 1132); [4-6-2010 Amd. Secs. 2,3,4,5, 6 Ord. 1196];

CHAPTER 22A

B-4 HIGHWAY COMMERCIAL DISTRICT

SECTION:

10-22A-1: Purpose And Intent
10-22A-2: Permitted Uses
10-22A-3: Permitted Accessory Uses
10-22A-4: Conditional Uses
10-22A-4A: Interim Uses
10-22A-5: Special Minimum Standards
10-22A-6: Lot Area, Lot Width And Yard Requirements
10-22A-7: Gateway Design Standards

10-22A-1: PURPOSE AND INTENT:

(A) The purpose of the B-4 Highway Commercial District is to provide for a mixture of commercial, office, and light industrial land uses, made mutually compatible through the enforcement of performance standards, to encourage and accommodate high quality, large scale development opportunities along intermediate arterial roadways within the city.

10-22A-2: **PERMITTED USES:** Within any B-4 Highway Commercial District no structure or land shall be used except for one or more of the following uses:

Art studio.

Auto repair.

Auto sales and rental, provided it is conducted entirely within the building.

Bakery.

Bicycle sales and repair.

Boat sales.

Building material sales.

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Bus terminal.

Camera and photographic supply and processing store.

Car wash as a principal use.

Child care.

Clinic and Hospital.

Commercial off-street parking.

Commercial zero lot line development, pursuant to section 10-7-41 of this title.

Consumer convenience services.

Consumer repair services.

Dry cleaning and laundry pickup stations including incidental pressing and repair.

Exterminating services.

Financial services.

Fraternal organizations, provided the structure in which the use is located is at least one hundred feet (100') from any residential zoning district and subject to title 3 of this code.

Garden supply store with no outdoor storage or display.

General retail sales.

Greenhouse (commercial) with no outdoor storage or display.

Grocery store, fruit or vegetable store.

Health club.

Indoor sports and recreation or entertainment, provided the structure in which the use is located is at least one hundred feet (100') from any residential zoning district.

Interior decorating studio.

Kennel.

Laundry.

Library.

Liquor store subject to the requirements of title 3 of this code.

Medical and dental clinic or offices.

Mini-storage.

Mortuary.

Motel and hotel.

Multi-tenant retail sales and service facilities subject to section 10-19-3(D) of this title.

Museum.

Music studio.

Newspaper and publishing facility.

Office building.

Office warehouse subject to the requirements of section 10-7-44 of this title.

Optical and jewelry manufacturing.

Personal services.

Pet services.

Photographic studio, supplies and processing.

Picture framing.

Post office.

Printing shop.

Radio and television studios.

Recreational vehicle sales.

Research center.

Restaurants (freestanding) - minimum five thousand (5,000) square feet subject to section 10-19-3(B) of this title.

School.

Seat cover and upholstery shop.

Tavern.

Temporary/seasonal outdoor sales uses, subject to the provisions of section 10-19-2-1 of this title.

Veterinary services.

10-22A-3: **PERMITTED ACCESSORY USES:** Within any B-4 Highway Commercial District, the following uses shall be permitted accessory uses:

Accessory car wash subject to 10-7-44 of this title.

Antennas mounted on an existing structure, not exceeding fifteen feet (15') above the highest point of the structure, as regulated by chapter 29 of this title.

Incidental repair, processing, or storage necessary to conduct a permitted principal use subject to section 10-19-1(K) of this title.

Buildings temporarily located for purposes of construction on the premises for a period not to exceed time necessary to complete construction.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Private garages, off-street parking and loading spaces as regulated in this title.

Public telephone booths.

Restaurant within a building having a principal use other than a restaurant.

Signs as regulated in chapter 30 of this title.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

Tenant restaurants, cafeterias, and retail service limited to tenants of the building, provided that they be essentially limited to providing service to the users of the permitted use, and that no signs or other evidence of these uses are visible from the exterior of the building.

10-22A-4: **CONDITIONAL USES:** Within a B-4 Highway Commercial District, no structure or land shall be used for the following uses except by a conditional use permit.

Antennas mounted on an existing structure, exceeding fifteen feet (15') above the highest point of the structure, as regulated by chapter 29 of this title.

Armory, convention hall subject to title 3 of this code.

Electrical contractor.

Essential service structure.

Heating and air conditioning dealer.

Outdoor sports, recreation, or entertainment facilities.

Outdoor storage, outdoor operations of a permitted use, outdoor display and open sales/rental lots when accessory to a permitted use. These uses shall comply with the following requirements:

Open storage lot subject to the requirements of section 10-7-45 of this title.

Open sales/rental lot subject to the requirements of section 10-7-46 of this title.

Plumbing contractor.

Single satellite earth station antenna in excess of two meters (2 m) in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) or less in diameter, are regulated in chapter 29 of this title.

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

10-22A-4A: **INTERIM USES:** Within any B-4 Highway Commercial District, no structure or land shall be used for the following uses except by interim use permit.

Outdoor theaters, including drive-ins.

Land reclamation, mining and soil processing subject to chapters 8, 9, and 10 of this title.

Recycling and reclamation of nonhazardous materials, when conducted entirely within a building.

Required structures need not be accessory structures and need not comply with the special requirements of subsection 10-19-1(A)2 of this title.

10-22A-5: **SPECIAL MINIMUM STANDARDS:**

(A) All uses except restaurants, shall be located within a principal building with a minimum gross floor area of ten thousand (10,000) square feet. Restaurants shall have a minimum floor area of five thousand (5,000) square feet, and can be freestanding structures.

10-22A-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

Lot area	40,000 square feet
Lot width	150 feet
Setback – principal structure	
Front yard	40 (40) feet
Side yard	20 (30) feet
Side yard (street)	40 (40) feet
Rear yard	40 (40) feet
Setback – accessory structure	
Front yard	40 (40) feet
Side yard	15 (30) feet
Side yard (street)	40 (40) feet
Rear yard	40 (40) feet

Setback – parking

Front yard	20 (30) feet
Side yard	15 (30) feet
Side yard (street)	20 (30) feet
Rear yard	15 (30) feet

Setbacks in parentheses apply to lots that abut any residential zoning district.

10-22A-7: **GATEWAY DESIGN STANDARDS:** Within any gateway district as delineated on the official zoning map, all provisions of this code shall be met. In addition, all structures and uses shall comply with Burnsville North gateway guidelines as set forth in ordinance 1022, which is incorporated herein by reference. To the extent this title 10 conflicts with ordinance 1022, ordinance 1022 shall control.

[7-7-97 Amd. Sec. 2, 3, 4 Ord 674] [10-6-97 Amd. Sec. 22A-2] [2-7-00 Amd. Sec. 4 Ord. 783] [7-1-02 Amd. Sec. 2 Ord. 851]; [2-21-06 Amd. Sec. 2 Ord. 1016]; [4-3-06 Add Sec. 7 Ord 1022]; [12-4-06 Amd. Sec. 3 Ord 1056]; [8-19-08 Amd. Secs. 1, 2, 3, 4, 4A Ord. 1132]; [6-2-09 Amd. Sec. 2 Ord. 1166]; [4-6-2010 Amd. Secs. 2, 3, 4, 4A, 5 Ord. 1196]

CHAPTER 22A-1

CRD COMMERCIAL RECREATION DISTRICT

SECTION:

10-22A-1: Permitted Uses
10-22A-2: Permitted Accessory Uses
10-22A-3: Conditional Uses
10-22A-4 Interim Uses
10-22A-5: Lot Area, Lot Width and Yard Requirements

10-22A-1: **PERMITTED USES:** Within any CRD Commercial Recreation District, no structure or land shall be used except for one or more of the following uses:

Amphitheatre as a permanent use.

Athletic facility.

Athletic club.

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Conference/banquet facility.

Essential service structures.

Golf course or driving range.

Health club and or spa.

Hotel complementary to the recreation business.

Mini-golf.

Mountain biking.

Playground, indoor or outdoor.

Restaurant complementary to the recreation business.

Ski hill.

Stadium.

Tennis club.

Tubing.

Water park, indoor or outdoor.

Swimming pools, indoor or outdoor.

10-22A-2: **PERMITTED ACCESSORY USES:** Within any CRD Commercial Recreation District, the following uses shall be permitted accessory uses:

Limited retail sales complementary to the permitted uses.

10-22A-3: **CONDITIONAL USES:** Within any CRD Commercial Recreation District, no structure or land shall be used for the following uses except by a conditional use permit:

Indoor motorized go-carts.

Paint ball.

Towers as regulated in chapter 29 of this title.

Temporary outdoor concert, theatre events held outside of a permanent amphitheatre.

10-22A-4: **INTERIM USE:** Within any CRD Commercial Recreation District, no structure or land shall be used for the following uses except by interim use permit:

Outdoor motorized recreational vehicles including but not limited to go-carts, ATV and snowmobiles.

Motorized or non-motorized vehicle racing or exhibition event.

10-22A-5: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:** The following minimum requirements shall be observed subject to additional requirements and exceptions contained in chapter 19 of this title. (Special Requirements for all Business Districts)

Lot area	1 acre (43,560 square feet)
Lot width	150 feet
Setback - principal structure	
Front yard	30 (50) feet
Side yard	30 (50) feet
Side yard (street)	30 (50) feet
Rear yard	30 (50) feet
Setback - accessory structure	
Front yard	30 (50) feet
Side yard	30 (50) feet
Side yard (street)	30 (50) feet
Rear yard	30 (50) feet
Setback – parking	
Front yard	20 (30) feet
Side yard	20 (30) feet
Side yard (street)	20 (30) feet
Rear Yard	20 (30) feet

Setbacks in parentheses apply adjacent to residential districts.

[2-7-05 Ord 960]; [6-2-09 Amd. Sec. 1 Ord 1166];

CHAPTER 22B

HOC HEART OF THE CITY DISTRICT

SECTION:

10-22B-1: Purpose And Intent
10-22B-2: Permitted Uses
10-22B-3: Permitted Accessory Uses
10-22B-4: Conditional Uses
10-22B-5: Temporary Seasonal Uses
10-22B-6: Lot Area, Lot Width, And Yard Requirements
10-22B-7: Street Types
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10-22B-9: Parking Requirements
10-22B-10: General Provisions
10-22B-11: Administration

10-22B-1: **PURPOSE AND INTENT:** The purpose of the "HOC" Heart of the City District is to provide an area for compact, mixed use development made mutually compatible through a combination of careful planning and urban design and coordinated public and private investment. The mixture of land uses within the district is essential to establishing the level of vitality and intensity needed to support retail and service uses. The placement of building edges and treatment of building, parking, landscaping, and pedestrian spaces is essential to creating the pedestrian-friendly environment envisioned for the HOC district. The standards in this ordinance are intended to implement and effectuate the principles and relationships established in the Burnsville Heart of the City Framework Plan, which will be carried out through specific standards related to site planning, signage, architecture, building materials, and landscaping.

(A) The HOC District is divided into two (2) subdistricts: HOC-1 and HOC-2, as depicted on the attached map, Figure 1, and on the Official Zoning Map.

10-22B-2: **PERMITTED USES:** Within any HOC District, no structure or land may be used, except for one or more of the following uses. The designation in front of the use indicates which district the use is allowed in: "1" means allowed in HOC-1 but not in HOC-2, "2" means allowed in HOC-2 but not in HOC-1, "1, 2" means allowed in both HOC-1 and HOC-2:

1,2: Antennas mounted on an existing structure, if integrated architecturally into the design of a building, not exceeding five feet (5') above the highest point of the structure, as regulated by chapter 29 of this title.

1: Antique or gift shop.

1,2: Appliance store.

1,2: Art studio, interior decorating studio, photographic studio, or music studio.

1,2: Art and school supply store.

1,2: Bakery goods sales and baking of goods for retail sale on the premises.

1,2: Bank, without drive-through lanes.

1,2: Beauty shop.

1,2: Hotels, motels, inns, and bed-and-breakfast establishments serving transient guests.

1,2: Bicycle sales and repair.

1,2: Bookstore.

1,2: Bus benches, shelters and transit facilities provided they comply with title 8 of this code.

1,2: Camera and photographic supply and processing store.

1: Candy, ice cream, popcorn, nuts, frozen dessert and soft drink shop, without drive-in or drive-through lanes.

1,2: Clinics for human care.

1: Clothing store.

1: Coffeehouses, coffee shops, cigar bars, wine bars, taverns, microbrewing establishments or similar gathering places serving food and drink.

1: Commercial zero lot line development, pursuant to section 10-7-41 of this title.

1,2: Convenience store.

1,2: Day care nursery.

1,2: Delicatessen.

1,2: Drug store.

1,2: Dry cleaning and laundry pickup stations including incidental pressing and repair.

1,2: Florist.

1,2: Furniture sales and repair.

1,2: Government buildings where the use conducted is customarily considered to be an office.

1: Grocery store, fruit or vegetable store.

1,2: Hardware store.

1,2: Health clubs.

1,2: Historical buildings, museums, art institutions, and galleries.

1,2: Hobby store.

1,2: Jewelry sales and repair store.

1: Laundromat, self-service.

1,2: Library.

1,2: Locksmith.

1: Meat market but not including processing for a locker.

1,2: Medical and dental clinic or office.

1,2: Multi-family attached residential dwellings, with a minimum net density of eight (8) units per acre. May include units which are combined living and working space within the unit, if all units on the same floor of a building are such.

1,2: Music store.

1: Newsstand.

1,2: Office supply and stationery store.

1,2: Offices, both professional and medical.

1,2: Paint, wallpaper sales.

1,2: Photographic studio.

1,2: Post office.

1,2: Record shop.

1,2: Restaurants, without drive-in or drive-through lanes.

2: Rugs and floor covering sales.

1,2: Schools, academies, colleges universities, libraries.

1,2: Spas.

1,2: Shoe sales and repair shop.

1,2: Small appliance repair shop.

1,2: Sporting goods store.

1: Temporary /Seasonal outdoor sales uses, subject to the provisions of section 10-19-2-1 of this title.

10-22B-3: **PERMITTED ACCESSORY USES:** Within any HOC District, the following uses shall be permitted accessory uses:

Incidental repair, processing, or storage necessary to conduct a permitted principal use subject to section 10-19-1(K) of this title.

Buildings temporarily located for purposes of construction on the premises for a period not to exceed the time necessary to complete construction.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Outdoor seating.

Private garages, off-street parking and loading spaces as regulated by this title.

Public telephone booths.

Signs regulated by this title.

Single satellite earth station antenna two meters (2 m) or less in diameter an single antenna designed to receive direct broadcast services or multichannel distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

Therapeutic massage businesses pursuant to title 3, chapter 15 of this code.

10-22B-4: **CONDITIONAL USES:** Within any HOC District, no structure or land may be used for the following uses except by conditional use permit:

Antennas mounted on an existing structure, if integrated architecturally into the design of a building, exceeding five feet (5’) above the highest point of the structure, as regulated by chapter 29 of this title.

Churches and other places of religious assembly, provided that the principal structure and any accessory structures used for assembly shall be located at least fifty feet (50') from any lot line adjacent to a residential building. This subsection shall apply even if the religious use does not occupy the entire structure. For the purposes of this subsection, the fifty foot (50') setback shall not apply to any property line adjacent to an arterial roadway or interstate freeway.

Drive-through lanes serving permitted or conditional uses, except for restaurants, for which drive-through lanes are not allowed in the HOC District, provided that:

Drive-through lanes are not permitted in the front yard or within the build-to line.

Adequate stacking distance shall be provided, as determined by the city engineer, which does not interfere with other driving areas, parking spaces, or sidewalks.

Electronic speaker devices, if used, shall not be audible beyond the property being served and shall not be operated between the hours of ten o’clock (10:00) p.m. and seven o’clock (7:00) a.m.

Screening shall be provided of automobile headlights in the drive-through lane to windows and doors of adjacent uses. Such screening shall be at least three feet (3') in height and fully opaque, consisting of a wall, fence, dense vegetation, berm, or grade change.

A bypass lane shall be provided for each drive-through use, allowing cars to leave the drive-through lane from the stacking area.

Within HOC-1 there shall be no more than one (1) drive-through lane serving a given use.

Within HOC-2 there shall be no more than two (2) drive-through lanes serving a given use.

Essential service structures, such as lift stations, utility meters, power substations.

Exterior light poles, light fixtures, or other light sources over sixteen feet (16') above the ground, provided that such light source shall be effectively contained within the development and shall not cause glare or light spillover to any adjacent residential unit.

Liquor stores subject to title 3 of this code.

Multi-family attached residential dwellings, with a minimum net density of eight (8) units per acre, if purely residential units and combined living and working units are mixed on a given floor.

Outdoor seating within the public right-of-way or public open space for a permitted or conditional use, provided that:

A sidewalk area at least six-feet (6') wide is maintained free of seating in the area.

An outdoor seating plan is prepared and approved by the city council on the recommendation of the planning commission, community development director, fire marshal, and public works director, and on finding that the plan will not compromise public health, safety, or welfare. The plan may also include seasonal temporary landscaping and features such as planter boxes, hanging baskets, low partitions, roped off areas, and other approved elements.

Projecting signs over the public right-of-way or public open space for a permitted or conditional use, provided that:

The sign is approved by the city council on the recommendation of the city staff, and on finding that the sign placement will not compromise public health, safety, or welfare.

The sign shall meet all other provisions for signs under this section.

Theaters, convention halls.

Expansion of non-conforming uses. Nonconforming buildings and sites may be expanded up to ten percent (10%) of their floor area or assessed value, provided that this expansion is consistent with the zoning that existed prior to the effective date hereof. Expansion of nonconforming uses by more than ten percent (10%) of their floor area or assessed value is not allowed, unless such expansion brings the entire site into compliance with the standards and design guidelines contained in this chapter. (Ord. 754, 8-18-1999)

10-22B-5: **TEMPORARY SEASONAL USES:** Within any HOC District, the following uses may be allowed by temporary seasonal permit, as regulated by section 10-19-2-1 of this title:

Farmers' markets subject to section 10-19-4(B) of this title.

Street vendors.

10-22B-6: **LOT AREA, LOT WIDTH, AND YARD REQUIREMENTS:**

(A) **Principal Structure:**

Setback	HOC-1	HOC-2
Front yard:	Build-to line (see below)	Build-to line (see below)
Side yard/interior:	0 feet minimum	10 feet minimum
Side yard/corner:	same as front yard	20 feet minimum
Rear yard:	20 feet minimum	20 feet minimum

(B) **Accessory Structure:**

Setback	HOC-1	HOC-2
Front yard:	Build-to line (see below)	Build-to line (see below)
Side yard:	0 feet minimum	10 feet minimum
Side yard (street):	same as front yard	20 feet minimum
Rear yard:	5 feet minimum	10 feet minimum

(C) **Parking:**

Setback	HOC-1	HOC-2
Front yard:	Build-to line (see below)	Build-to line (see below)
Side yard:	0 feet minimum	10 feet minimum
Side yard (street):	same as front yard	same as front
Rear yard:	5 feet minimum	10 feet minimum

(D) **Front Yard Build-To Line Established.** In the HOC District in the front yard, a build-to line is established which provides a minimum and maximum front setback for buildings and other structures, from the right-of-way or property line. For parking, the minimum setback applies, but not the maximum. There are three (3) build-to line conditions, classes 10, 15, and 20, the standards for which are described below. The location of these build-to line conditions on various streets within the Heart of the City is illustrated on the attached street types map.

1. Build-to Line, Class 10. The minimum setback shall be ten feet (10') and the maximum shall be fifteen feet (15') from the right-of-way or property line, for all properties on streets identified as having a class 10 build-to line, except Nicollet Avenue, where the minimum setback shall be eleven feet (11').

2. Build-to Line, class 15. The minimum setback shall be fifteen feet (15') and the maximum shall be twenty feet (20') from the right-of-way or property line, for all properties on streets identified as having a class 15 build-to line.

3. Build-to Line, class 20. The minimum setback shall be twenty feet (20') and the maximum shall be twenty-five feet (25') from the right-of-way or property line, for all properties on streets identified as having a class 20 build-to line, except Burnsville Parkway, where the minimum setback shall be twenty-one feet (21').

4. In the HOC-1 district at least sixty-five percent (65%) of the street frontage of any lot shall be occupied by building facades meeting the build-to line. Other portions of a building beyond the sixty five percent (65%) may be setback farther than required by the build-to line.

5. In the HOC-2 district at least forty percent (40%) of the street frontage of any lot shall be occupied by building facades meeting the build-to line. Other portions of a building beyond the forty percent (40%) may be setback farther than required by the build-to line.

6. The length of the building facade shall be measured as the maximum width of the building projected to the front lot line on lines perpendicular to the front lot line.

7. On lots with more than one street frontage, the build-to line shall apply on each side fronting a street.

8. At least the first and second floor must meet the build-to line. Arcades and terracing are encouraged.

9. The build-to line may be met either with an enclosed building or an arcade constructed with a permanent roof of the same materials as the remainder of the building.

10. At a minimum, the first fifty feet (50') of the lot frontage on either side of a street intersection must be occupied by buildings meeting the build-to line. Parking or other open space open to the sky are not allowed within this first fifty feet (50') (see Figure 13 at the end of this chapter).

(E) **Screening of Parking Areas.** Wherever a surface parking area faces a street frontage, such frontage shall be screened with a decorative wall, railing, hedge, or a combination of these elements, to a minimum height of three feet (3') and a maximum height of four and one half feet (4-1/2') above the level of the parking lot, at the build-to line.

(F) **Parking Structures.** A new parking structure shall maintain a setback equal to the setbacks required in this section for other structures, except that where such parking structure is adjacent to other parking in a side or rear yard condition, the parking structure may have a zero setback. Where a new parking structure is adjacent to an existing use in a side or rear yard condition, the parking structure must maintain at least a ten foot (10') setback.

(G) **Drive-Through Lanes.** Drive-through or drive-in lanes are not allowed within the build-to line or in front of any building; they must be located to the side or rear of a building. This does not pertain to driveways.

(H) **Lot Area:** Six thousand (6,000) square feet minimum.

(I) **Lot Width:** Twenty five feet (25') for residential townhomes, fifty feet (50') for all other uses.

(J) **Lot Depth:** One hundred twenty feet (120').

(K) **Building Height:** "Building height" is defined as the vertical distance from the average elevation of the adjoining ground level or the established grade, whichever is lower, to:

1. the top of the cornice of a flat roof;

2. the deck line of a mansard roof;

3. a point directly above the highest wall of a shed roof;

4. the uppermost point of a round or other arch-type roof;

5. the mean distance from the eave line to the peak of the highest gable on a pitched or hip roof.

(L) **Height Limit:** In the HOC District the minimum and maximum building height shall be governed by the building types described below and identified on the attached drawings.

10-22B-7: **STREET TYPES:**

Within the HOC District there are established certain street types for the purpose of regulating building types, land uses, and setbacks. These street types are illustrated on the attached map, Figure 2; the attached drawings, Figures 3 through 12; and in the Heart of the City Framework Plan. Street types are established as described below:

(A) **Nicollet Avenue:** All of Nicollet Avenue within the HOC District. See Figure 3 for associated building types.

(B) **Two-Way with Angled Parking:** All those streets so designated on the attached map, Figure 2. See also Figure 4 for associated building types.

(C) **Two-Way with Parallel Parking:** All those streets so designated on the attached map, Figure 2. See also Figure 5 for associated building types.

(D) **Burnsville Parkway:** All of Burnsville Parkway within the HOC District. There are different standards established for those portions of Burnsville Parkway within HOC-1 and HOC-2, and for that portion east of Nicollet Avenue. See Figures 6 and 7 for associated building types.

(E) **Travelers Trail:** All of Travelers Trail within the Heart of the City District. There are different standards established for those portions of Travelers Trail east of Nicollet Avenue, west of Nicollet Avenue and east of Pillsbury Avenue, and west of Pillsbury Avenue. See Figures 8 and 9 for associated building types.

(F) **Gateway Boulevard:** All of Gateway Boulevard within the HOC District. See Figures 10 and 11 for associated building types.

10-22B-8 : **BUILDING TYPES:**

Within the HOC District, no building shall be constructed and occupied except for the following types, described below, and depicted on the attached drawings, Figures 3 through 12:

(A) **Building Type A, Mixed Use:** Type A buildings may include retail, office, or residential uses on the first floor and on upper floors. Parking may be included on a level below ground. Type A buildings may have a flat or pitched roof. Minimum height shall be twenty five feet (25’) and the maximum height shall be fifty feet (50’).

(B) **Building Type B, Apartments or Condominiums:** Type B buildings shall include residential, office, or retail uses on the first floor, and residential apartments or condominiums on upper floors. Parking may be included on a level below ground. Type B buildings may have a flat or pitched roof. Minimum height shall be thirty feet (30’) and the maximum height shall be fifty feet (50’).

(C) **Building Type C, Townhomes:** Type C buildings shall be residential townhomes on all floors, except that a portion of the first floor not fronting a street or public open space may include parking. Type C buildings shall have a pitched roof. Maximum height shall be thirty-five feet (35’). Maximum depth of buildings perpendicular to a street shall be forty feet (40’). Minimum width of lots shall be twenty five feet (25’).

(D) **Building Type (D), Office/Retail:** Type (D) buildings shall include office or retail uses on the first floor, and office uses on upper floors. Parking may be included on two levels below ground. Type (D) buildings may have a flat or pitched roof. Minimum height shall be thirty feet (30'). For areas in HOC-2 north of Burnsville Parkway, there is no maximum height requirement. For areas south of Burnsville Parkway in HOC-2, the maximum height shall be fifty feet (50’).

(E) **Residential Uses on First Floor:** Whenever residential uses are included on the first floor of a building of any type, the first floor elevation shall be a minimum of two feet six inches (2'-6") above the sidewalk elevation immediately adjacent to the front of the residential unit. This standard may be modified with a variance in unique or hardship situations if the intent is preserved. In addition, each first-floor unit must have an individual private entrance at street level. All such residential units must meet ADA and other applicable access requirements.

10-22B-9: **PARKING REQUIREMENTS:**

(A) Off-street parking shall be provided as indicated for each block or building in the Burnsville Heart of the City Framework Plan, both surface parking and under the building, at a projected overall future ratio of four (4) spaces per thousand square feet of development. The total parking requirement assumes some publicly provided parking, either on-street or in parking structures. In the event some or all of this on-street parking is not available at the time of development, off-street parking shall be provided as required under section 10-7-26 of this title, unless the applicant can demonstrate that shared or reduced parking can be achieved, in which case an appropriate reduction in the total number of off-street parking spaces may be allowed. Parking ratios for restaurants and some other uses are higher than retail or office uses and this shall be taken into account when calculating parking.

(B) Parking for residential units in HOC shall be provided on site, and shall be calculated as required under section 10-7-26 of this title. These residential parking spaces shall be specifically reserved

for the use of residents and visitors only, separate from any commercial, office, or other uses on site or nearby, and shall not be counted as part of any shared parking or joint parking arrangement.

(C) If present, on-street parking directly in front a given building or lot shall count toward fulfilling the total parking requirement.

(D) On-grade parking is prohibited in the front yard directly in front of a building. Parking shall be provided to the side or rear of buildings in mid-block areas. Where parking fronts a public street the maximum parking lot width shall be sixty-five feet (65') measured at the lot frontage (see Figure 13 attached at the end of this Chapter). Parking in driveways at the rear of townhomes may be counted towards the requirements of this ordinance if it does not interfere with other traffic movement.

(E) Parking shall be prohibited within fifty feet (50') of the intersection of any public streets within the HOC District (see Figure 13 attached at the end of this chapter).

10-22B-10: **GENERAL PROVISIONS:**

(A) **Building Design and Materials:**

1. All buildings shall be designed to accomplish the goals and policies of the Comprehensive Plan and the Heart of the City Framework Plan. Building materials shall be attractive in appearance, durable with a permanent finish, and of a quality that is consistent with the standards and intent of the Framework Plan. Where appropriate, buildings shall carry over materials and colors of adjacent buildings, with the exception of prohibited materials.

2. All buildings shall include the following four elements:

a. accent materials, which shall be wrapped around walls that are visible from a public street or open space;

b. buildings containing office and retail uses shall maintain forty percent (40%) minimum window coverage on each first floor front that faces a street or public open space;

c. complimentary major material colors;

d. a combination of vertical and horizontal pattern designs in the building facade.

3. Any exterior building wall adjacent to or visible from a public street, public open space, or abutting property may not exceed sixty feet (60') in length without significant visual relief consisting of one or more of the following:

a. the facade shall be divided architecturally by means of significantly different materials or textures, or

b. horizontal offsets of at least four feet (4') in depth, or

c. vertical offsets in the roof line of at least four feet (4'),

d. fenestration at the first floor level which is recessed horizontally at least one foot (1') into the façade.

4. Exterior building materials shall be classified either primary, secondary, or accent materials. Primary materials shall cover at least sixty percent (60%) of the facade of a building. Secondary materials may cover no more than thirty percent (30%) of the facade. Accent materials may include door and window frames, lintels, cornices, and other minor elements, and may cover no more than ten percent (10%) of the facade. Allowable materials are as follows:

a. Primary exterior building materials may be brick, stone, or glass. Bronze-tinted or mirror glass are prohibited as exterior materials in HOC-1, but allowed in HOC-2.

b. Secondary exterior building materials may be decorative block or integrally-colored stucco, fiber cement siding (color impregnated or painted) in vertical panel design only with hidden seams.

c. synthetic stucco may be permitted as a secondary material on upper floors only.

d. Accent materials may be wood, metal or fiber cement when used in trim, fascia or soffit if appropriately integrated into the overall building design and not situated in areas which will be subject to physical or environmental damage.

e. All primary and secondary materials shall be integrally colored, except where otherwise stated.

5. Decorative block shall be colored only by means of a pigment integral to the block material, not applied to the surface.

6. Sheet metal, corrugated metal, asbestos, iron, shakes, plain flat concrete block (whether painted or integrally colored or not) are not acceptable as exterior wall materials on buildings within the HOC District.

7. All mechanical equipment, whether roof-mounted or ground-mounted, shall be completely screened from the ground-level view of adjacent properties and public streets, or designed to be compatible with the architectural treatment of the principal building.

8. All exterior trash enclosures or other accessory structures shall be constructed of the same materials and colors as the principal building.

9. Consistent interior window treatments are required for windows which are visible from a public street or open space in offices and multiple residential complexes.

10. All buildings containing non-residential uses on the ground floor shall meet the following standards:

a. The building shall have entrances to a street or public open space spaced no more than sixty feet (60') apart.

b. Entrances shall be oriented conveniently to the street frontage and to on-street and off-street parking serving the use.

(B) **Trash Handling:** All trash, recyclable materials, and equipment for handling them, including compactors, shall be totally screened from eye-level view from public streets and adjacent properties, whether in the front, side or rear, either by being stored within the principal structure, totally screened from view by the principal building, or stored within an accessory structure enclosed by a roof and readily served through swinging doors or an overhead door on tracks.

(C) **Loading docks:** Loading docks shall be not located in the front yard and shall be completely screened from eye-level view of public streets and public open spaces, by means of landscaping which is at least eighty percent (80%) opaque at the time of installation, or by a screen wall of the same materials and colors as the principal building.

(D) **Landscaping:**

1. All land area not occupied by buildings, parking, driveways, sidewalks, or other hard surface shall be sodded or mulched and landscaped with approved ground cover, flowers, shrubbery and trees.

2. At least ten percent (10%) of the total land area within the perimeter of private parking and driveway areas shall be landscaped. Landscaped areas provided within the build-to line may be credited toward this ten percent (10%) landscaping requirement on a square-foot-for-square-foot basis, for up to half of the ten percent (10%) requirement, or five percent (5%).

3. Parking lot landscaped islands shall be a minimum of one hundred fifty (150) square feet in area and include at least one overstory or evergreen tree meeting the requirements of this ordinance.

4. Where parking abuts the site perimeter there shall be provided at least one overstory tree per twenty five feet (25’) of site perimeter.

5. At least one overstory tree shall be provided for every five hundred (500) square feet of landscaped area on the entire site.

6. The landscape plan shall include a full complement of overstory, ornamental and evergreen trees, shrubbery, and ground covers which are hardy and appropriate for the locations in which they are planted, and which provide year-round color and interest.

7. a. The following trees may not be used to satisfy the landscaping requirement of this section:

Acer negundo	Box Elder
Acer saccharinum	Silver Maple
Catalpa speciosa	Northern Catalpa
Elaegnus	Russian Olive
Ginkgo Biloba	F. Ginkgo (female prohibited, male permitted)
Morus alba	Mulberry
Populus deltoides	Cottonwood
Populus species	Poplars

b. The following trees may be used to satisfy the landscaping requirement of this Section, but only in areas that are reasonably protected from winter wind conditions:

Picea pungens glauca	Colorado Blue Spruce
Pinus alba	White Pine
Pinus resinosa	Red Pine

c. The following trees may be used to satisfy the landscaping requirement of this section, but only in areas that are not on, or immediately adjacent to, a public street boulevard:

Tilia cordata	Little Leaf Linden
Fraxinus mandshurica manacana	Mancana Ash

(E) **Signage:**

1. All signs erected on any building or land within the HOC District must comply with the standards of this section and sections 10-30-1, 10-30-2, and 10-30-3 of this title.

2. Wall signs:

a. Wall signage is allowed on buildings in the HOC District within a horizontal band no more than three feet (3') in height, at least ten feet (10') and no more than fifteen (15') above the ground.

b. Wall signage may be either:

(1) Attached: flat and parallel to the surface of the building and projecting no more than one foot (1’) from it, or

(2) Projecting: perpendicular to the surface of the building and no more than one foot (1’) in thickness.

c. Attached wall signage shall consist of individual letters or script logos mounted on the building.

d. Projecting signs may project no more than four feet (4’) from the front edge of the building and be no more than twelve (12) square feet in area.

e. Projecting signs may not extend over a public right-of-way or public property unless by conditional use permit.

f. Projecting signs may not extend over a designated parking space or loading area.

g. Box signs or cabinet signs, whether on a wall, projecting or on canopies, are prohibited, except for logo signs as approved as part of the overall signage plan.

h. Signs on canopies are allowed only if they are on a surface perpendicular to the ground and if all other requirements of this section as to area and location are adhered to.

i. Allowable area of wall signs is one and one half (1½) square feet of signage per lineal foot of building frontage on a public street, public open space, or private parking area. Each wall shall be calculated individually and sign area may not be transferred to another side of the building. In calculating the total allowable area of wall signage, only one side of a two (2) sided projecting sign shall be counted.

3. Freestanding signs are prohibited in the HOC-1 District, except directional signs at driveways and within parking areas, if no more than five feet (5') in height and no more than six (6) square feet in area. Directional signs must be setback at least two feet (2') from right-of-way, lot lines, and parking spaces.

4. Freestanding signs are allowed in the HOC-2 District according to the provisions of section 10-30 of this title using the standards for the B-1 district.

(F) **Lighting:**

1. All exterior lighting in the HOC District shall be downcast cutoff type fixtures, and shall follow the styles and types identified in the Framework Manual. No light source may be more than sixteen feet (16') above the ground, except by conditional use permit for buildings more than twenty feet (20') in height.

2. The applicant shall provide a photometric lighting diagram prepared by a qualified professional showing light levels, in foot-candles, from all exterior artificial lighting for all points on and within ten feet (10') of the site.

3. Lighting levels in exterior parking areas shall average one-half (1/2) foot candle, with a minimum of one-tenth (1/10) foot-candle in all locations.

4. Lighting levels in interior parking areas shall average two (2) foot-candles, with a minimum of one-half (1/2) foot-candle in all locations.

5. Lighting levels shall not exceed one-half (1/2) foot-candle at the abutting property line or right-of-way line, and no direct glare from lighting on site shall extend onto the public street, public open space or neighboring properties.

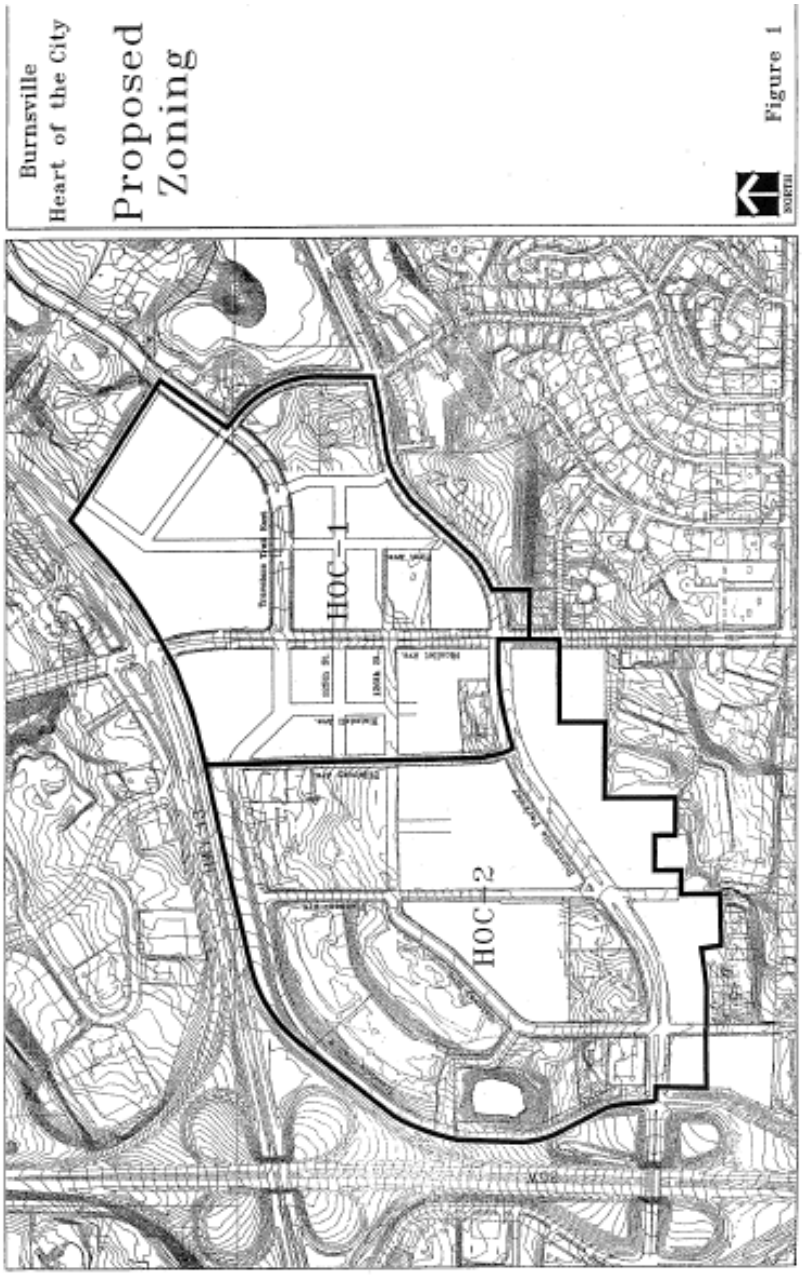
10-22B-11: **ADMINISTRATION:**

(A) **Heart of the City Design Review:** A design review committee is established for the Heart of the City which shall consist of three (3) to five (5) members appointed by, and serving at the pleasure of, the city council. The city council shall appoint one member to serve as chairperson to call and facilitate the meetings of the committee.

(B) All applications for development projects in the HOC-1 or HOC-2 Districts must first be submitted to the design review committee, who shall determine conformance of the proposed developments with the intent and requirements of this chapter. The committee shall also review and make recommendations to the planning commission and city council regarding land use and zoning applications in HOC-1 or HOC-2 District for those applications that are required under this title to have such review by the planning commission or city council.

(C) An applicant may appeal a decision of the HOC design review committee pursuant to section 10-5-8 of this title, in the same manner as an appeal from an action of the development review committee.

[8-18-99 Ord. 764]; [5-17-04 Amd. Sec. 10 (A) (4.), (b.), (d.), (e.) Ord. 923]; [8-2-04 Amd. Sec. 4 Ord 935] ; [12-4-06 Amd. Sec 3 Ord 1056]; [12-18-06 Amd. Sec 3 Ord 1059]; [8-19-08 Amd. Sec. 1, 3, 4, 5, 10(C), Ord. 1132]; [6-2-09 Amd. Secs. 2 & 3 Ord 1166];



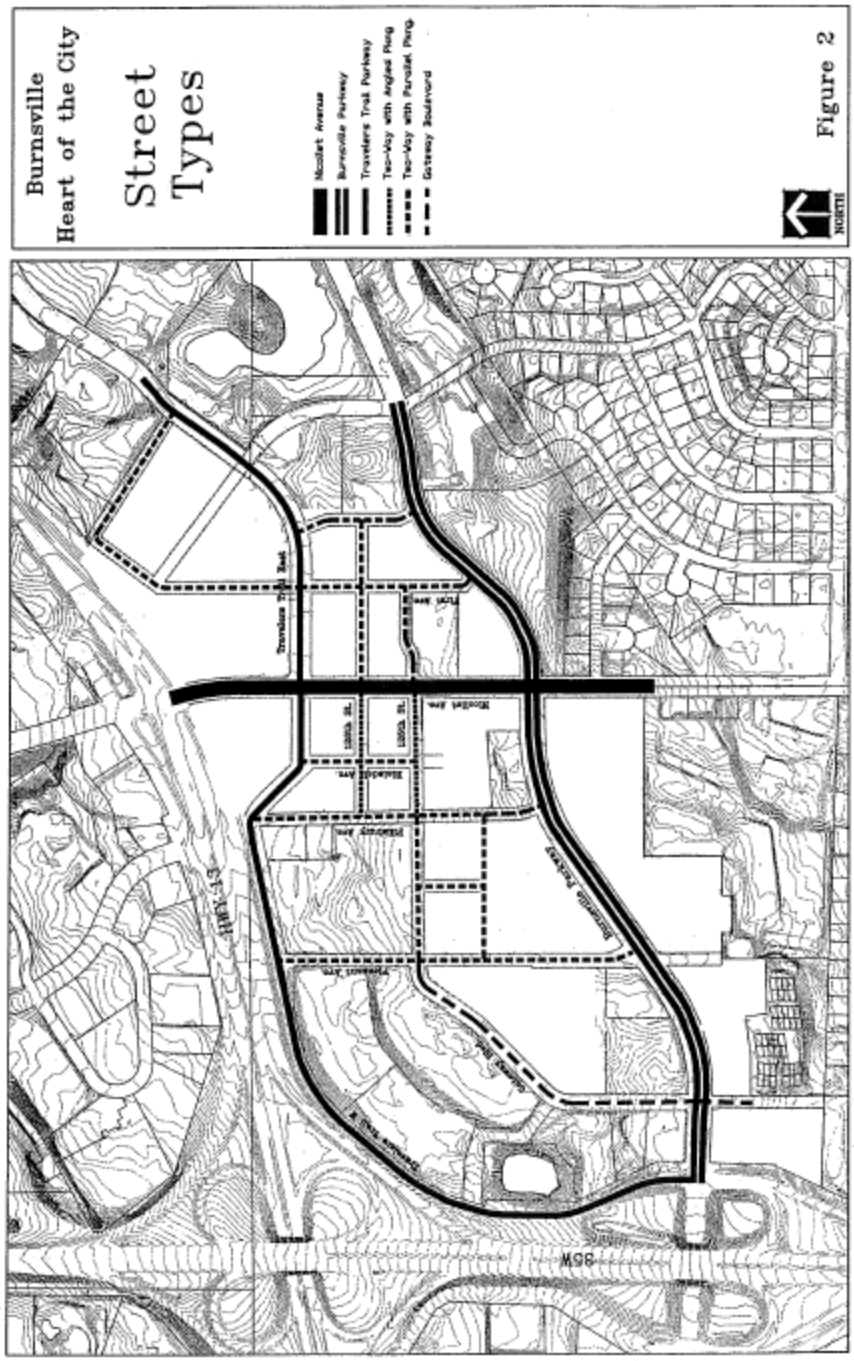

Burnsville
Heart of the City
Street
Types
Mesilart Avenue
Burnsville Parkway
Travelers Trail Parkway
Two-Way with Angled Ramp
Two-Way with Parallel Ramp
Gateway Boulevard
NORTH
Travelers Trail East
HWY 13
Burnsville Parkway
Nicollet Ave
Aldrich Ave
Bloomington Ave
Pleasant Ave
Garfield Ave
Dupont Ave
Xerxes Ave
Lyndale Ave
Portland Ave
Cedar Ave
Chicago Ave
Minnesota Ave
Pillsbury Ave
Upton Ave
Colfax Ave
Bryant Ave
Aldrich Ave
Bloomington Ave
Pleasant Ave
Garfield Ave
Dupont Ave
Xerxes Ave
Lyndale Ave
Portland Ave
Cedar Ave
Chicago Ave
Minnesota Ave
Pillsbury Ave
Upton Ave
Colfax Ave
Bryant Ave
Burnsville Parkway
Nicollet Ave
35W

Figure 2

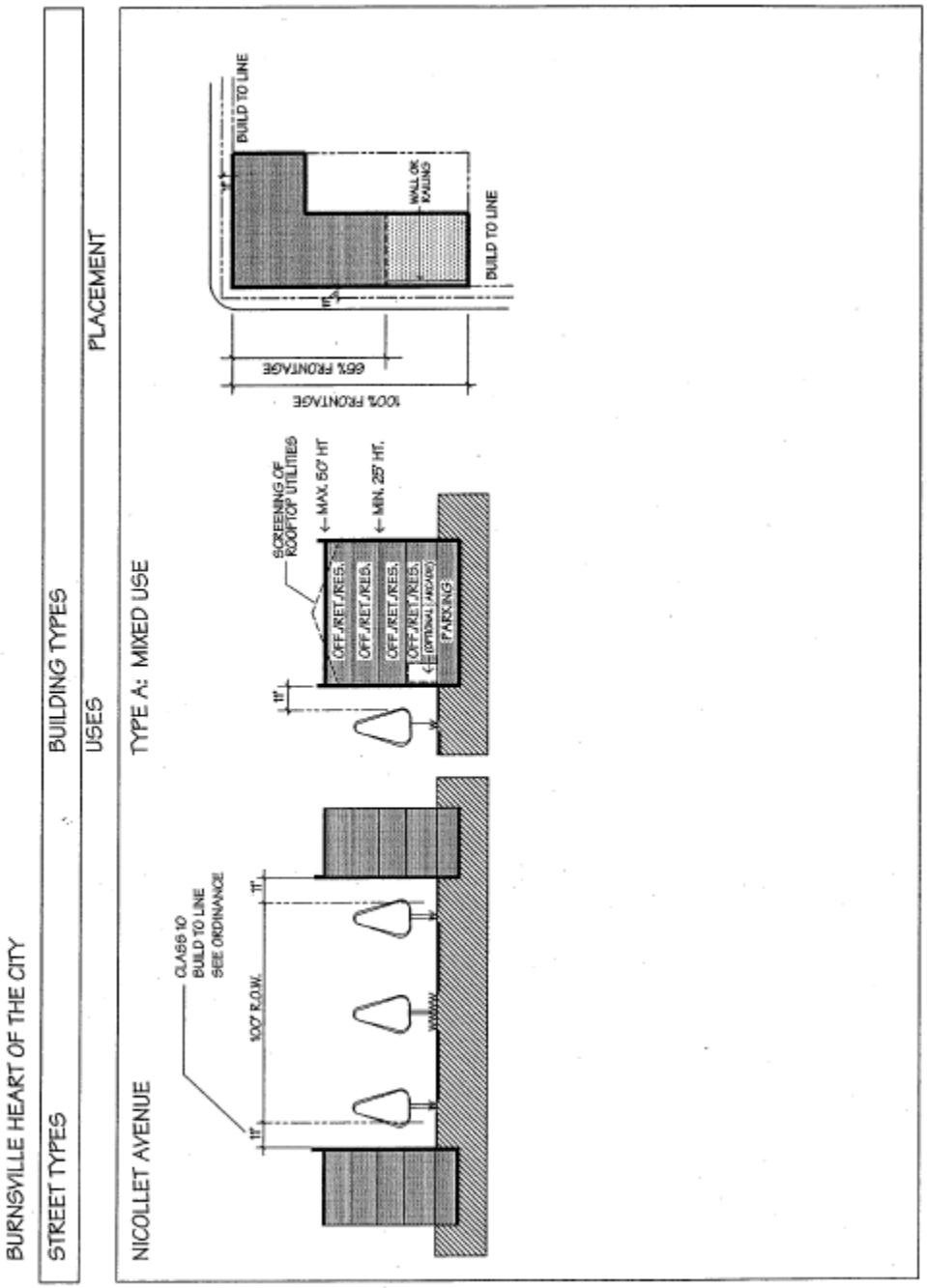

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
NICOLLET AVENUE
TYPE A: MIXED USE
CLASS 10
BUILD TO LINE
SEE ORDINANCE
100' R.O.W.
11'
11'
SCREENING OF
ROOFTOP UTILITIES
← MAX. 50' HT
← MIN. 25' HT.
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
(OPTIONAL AREA)
PARKING
100% FRONTAGE
66% FRONTAGE
BUILD TO LINE
WALL OR
RAILING
BUILD TO LINE

Figure 3

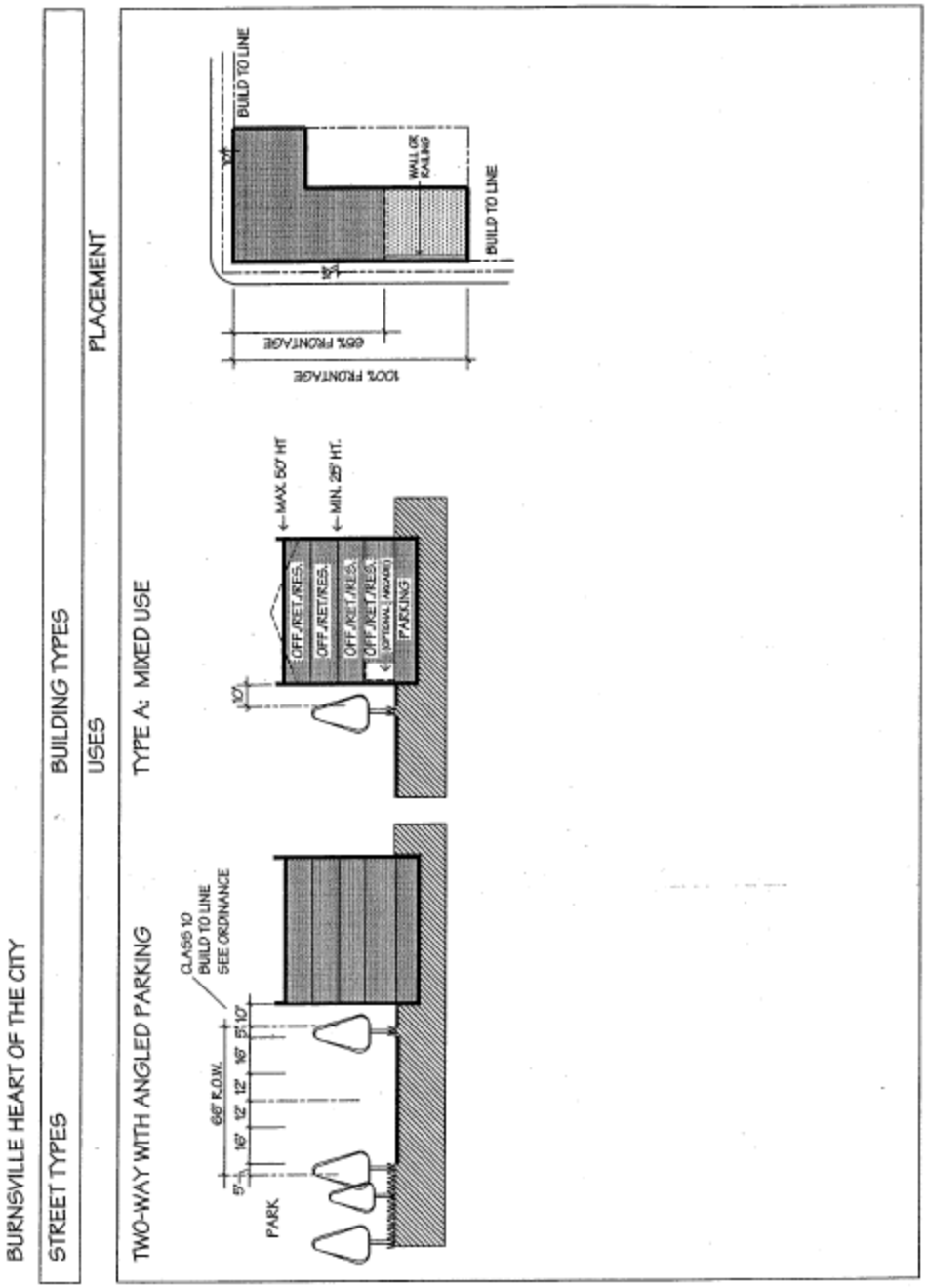

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
TWO-WAY WITH ANGLED PARKING
TYPE A: MIXED USE
CLASS 10
BUILD TO LINE
SEE ORDINANCE
66' R.O.W.
5'
16'
12'
12'
16'
5'
10'
PARK
10'
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
(OPTIONAL WALKUP)
PARKING
← MAX. 50' HT
← MIN. 25' HT.
100% FRONTAGE
65% FRONTAGE
BUILD TO LINE
WALL OR RAILING
BUILD TO LINE

Figure 4

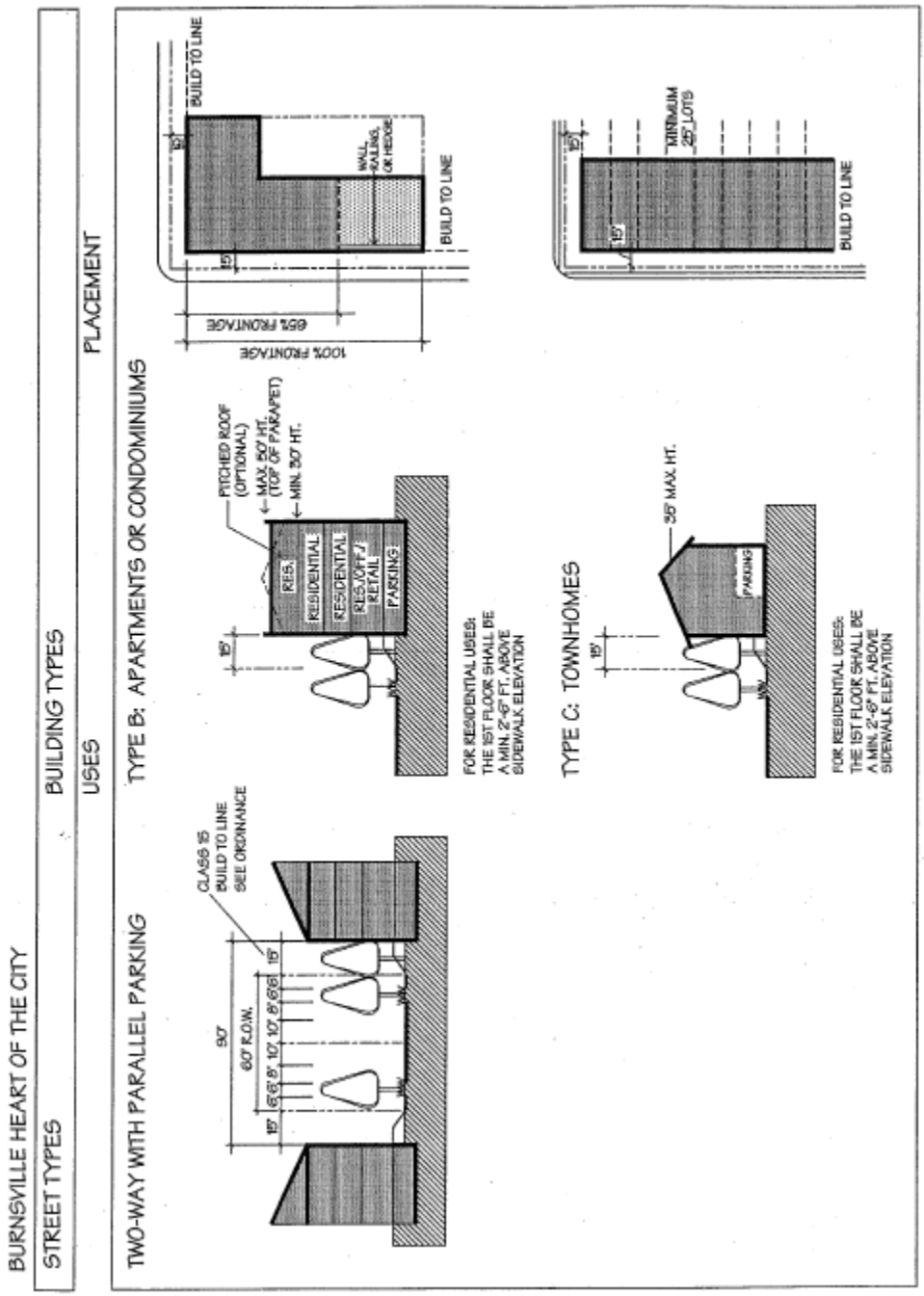

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
TWO-WAY WITH PARALLEL PARKING
CLASS 15
BUILD TO LINE
SEE ORDINANCE
90'
60' R.O.W.
15'
8'6" 8' 10' 10' 8' 8'6"
15'
TYPE B: APARTMENTS OR CONDOMINIUMS
PITCHED ROOF
(OPTIONAL)
MAX. 50' HT.
(TOP OF PARAPET)
MIN. 30' HT.
15'
RES.
RESIDENTIAL
RESIDENTIAL
RES./OFF./
RETAIL
PARKING
FOR RESIDENTIAL USES:
THE 1ST FLOOR SHALL BE
A MIN. 2'-6" FT. ABOVE
SIDEWALK ELEVATION
BUILD TO LINE
15'
WALL,
RAILING,
OR HEDGE
15'
BUILD TO LINE
65% FRONTAGE
100% FRONTAGE
TYPE C: TOWNHOMES
15'
35' MAX. HT.
PARKING
FOR RESIDENTIAL USES:
THE 1ST FLOOR SHALL BE
A MIN. 2'-6" FT. ABOVE
SIDEWALK ELEVATION
15'
MINIMUM
25' LOTS
15'
BUILD TO LINE

Figure 5

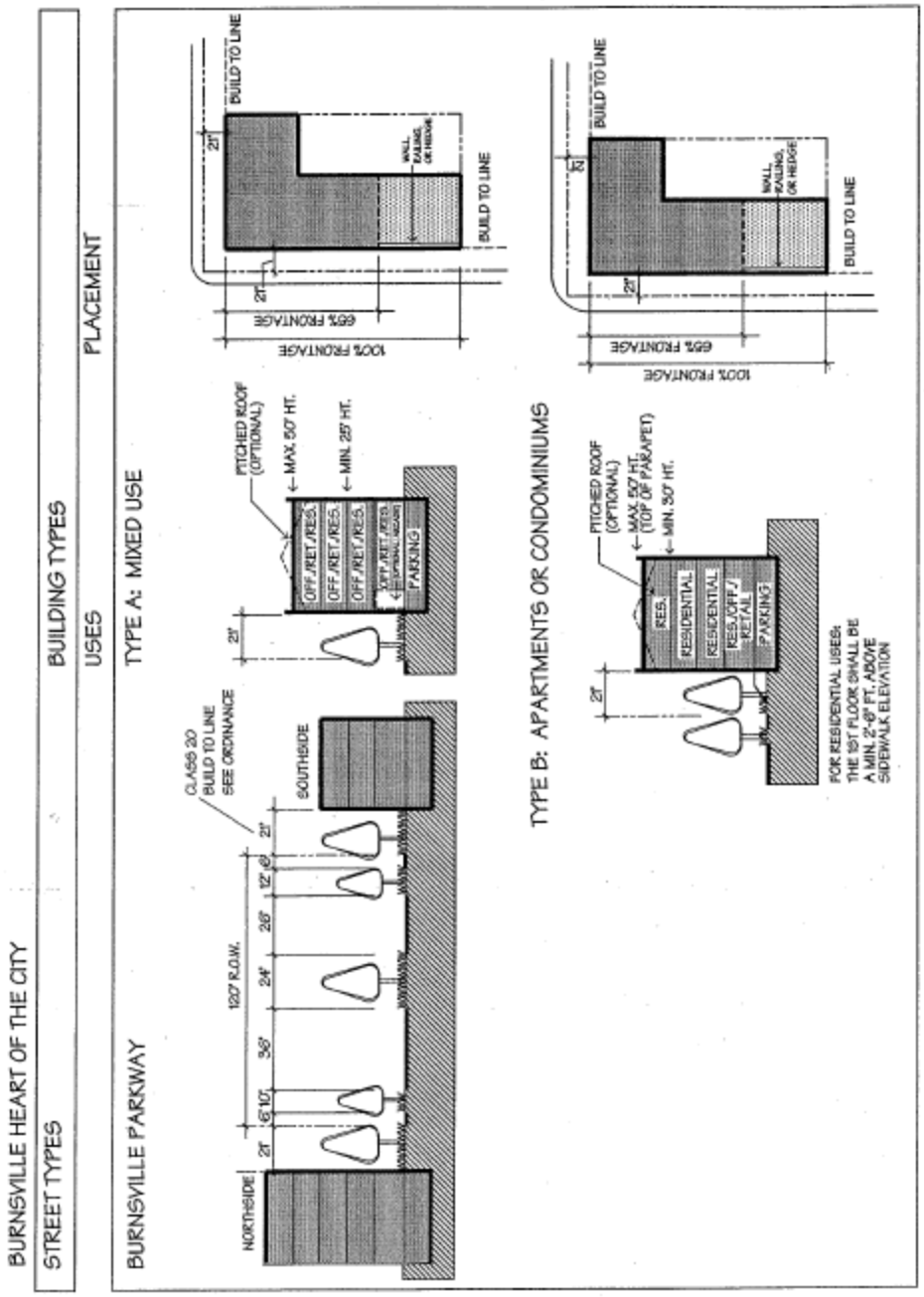

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
BURNSVILLE PARKWAY
TYPE A: MIXED USE
NORTHSIDE
SOUTHSIDE
122' R.O.W.
CLASS 2D BUILD TO LINE SEE ORDINANCE
PITCHED ROOF (OPTIONAL)
MAX. 50' HT.
MIN. 25' HT.
OFF./RET./RES.
PARKING
100% FRONTAGE
65% FRONTAGE
BUILD TO LINE
WALL, RAILING, OR HEDGE
TYPE B: APARTMENTS OR CONDOMINIUMS
MAX. 50' HT. (TOP OF PARAPET)
MIN. 50' HT.
RES.
RESIDENTIAL
RES./OFF./RETAIL
FOR RESIDENTIAL USES: THE 1ST FLOOR SHALL BE A MIN. 2'-6" FT. ABOVE SIDEWALK ELEVATION

Figure 6

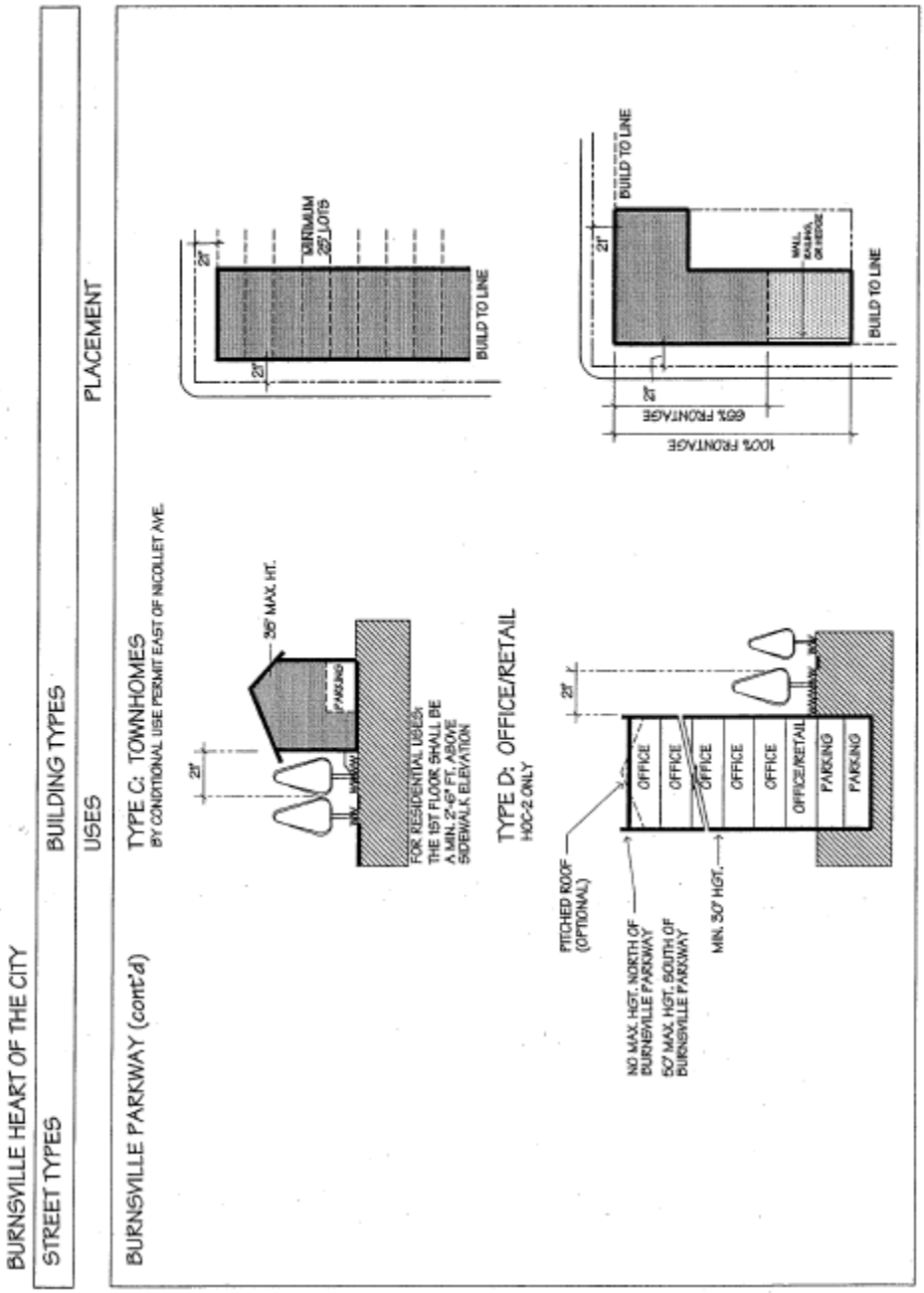

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
BURNSVILLE PARKWAY (cont'd)
TYPE C: TOWNHOMES
BY CONDITIONAL USE PERMIT EAST OF NICOLLET AVE.
21'
35' MAX. HT.
PARKING
FOR RESIDENTIAL USES, THE 1ST FLOOR SHALL BE A MIN. 2'-6" FT. ABOVE SIDEWALK ELEVATION
21'
MINIMUM 25' LOTS
BUILD TO LINE
TYPE D: OFFICE/RETAIL
HOC-2 ONLY
21'
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE/RETAIL
PARKING
PARKING
PITCHED ROOF (OPTIONAL)
NO MAX. HGT. NORTH OF BURNSVILLE PARKWAY
50' MAX. HGT. SOUTH OF BURNSVILLE PARKWAY
MIN. 30' HGT.
21'
BUILD TO LINE
WALL, RAILING, OR HEDGE
BUILD TO LINE
21'
65% FRONTAGE
100% FRONTAGE

Figure 7

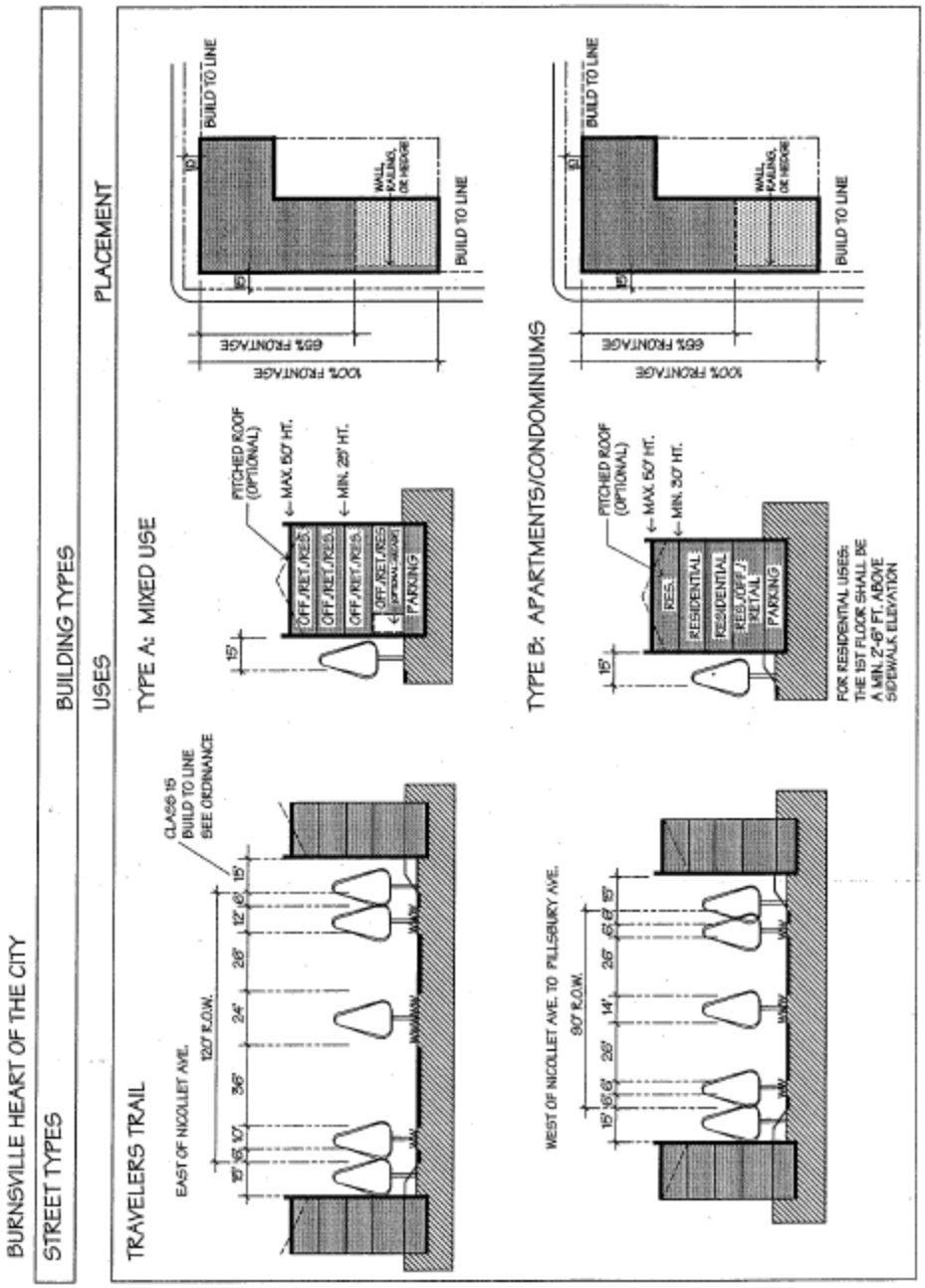

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
TRAVELERS TRAIL
EAST OF NICOLLET AVE.
120' R.O.W.
CLASS 15
BUILD TO LINE
SEE ORDINANCE
TYPE A: MIXED USE
PITCHED ROOF (OPTIONAL)
MAX. 50' HT.
MIN. 25' HT.
OFF./RET./RES.
PARKING
100% FRONTAGE
65% FRONTAGE
BUILD TO LINE
WALL, RAILING, OR HEDGE
WEST OF NICOLLET AVE. TO PILLSBURY AVE.
80' R.O.W.
TYPE B: APARTMENTS/CONDOMINIUMS
RES.
RESIDENTIAL
RES./OFF./RETAIL
FOR RESIDENTIAL USES: THE 1ST FLOOR SHALL BE A MIN. 2'-6" FT. ABOVE SIDEWALK ELEVATION

Figure 8

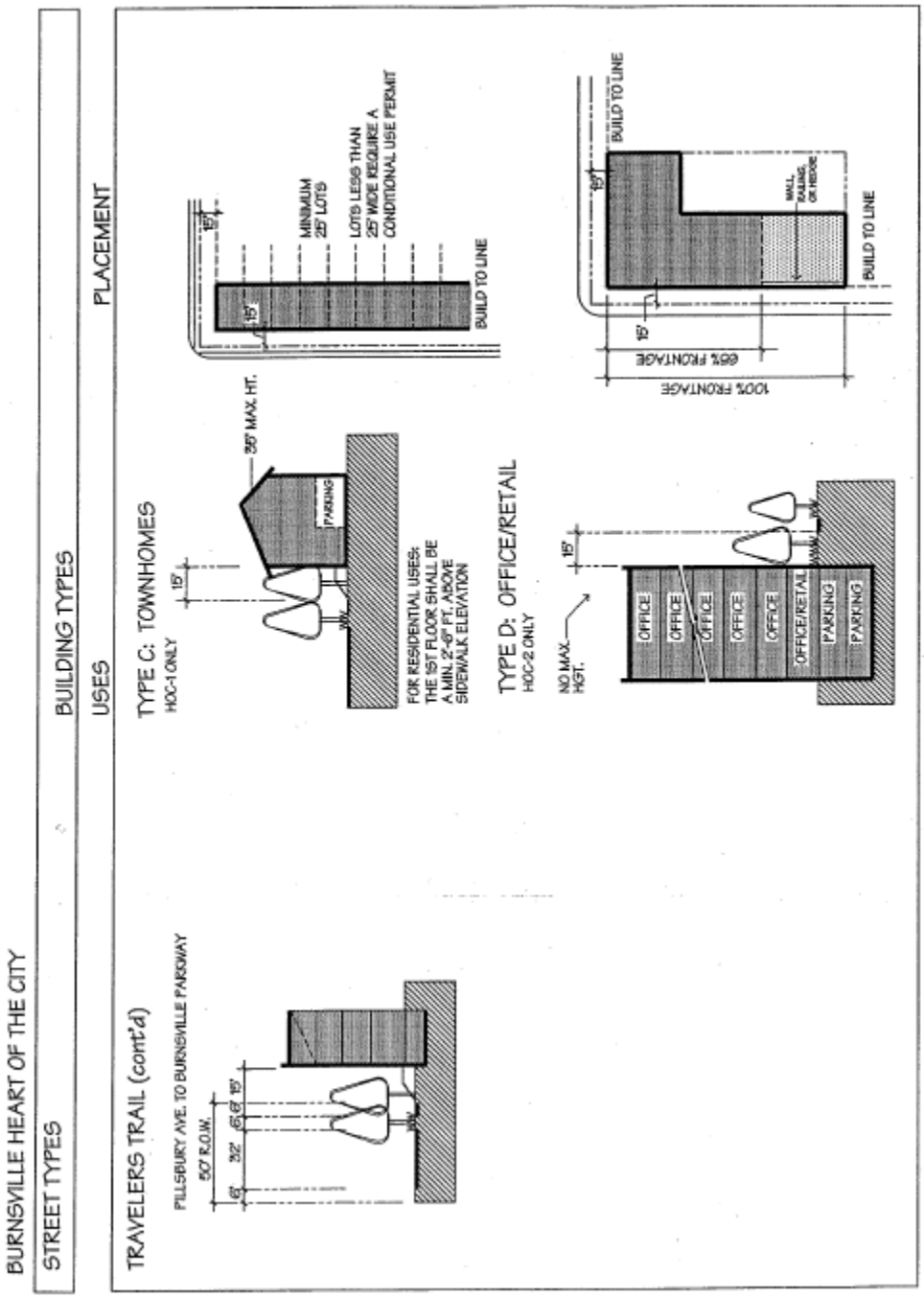

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
TRAVELERS TRAIL (cont'd)
PILLSBURY AVE. TO BURNSVILLE PARKWAY
50' R.O.W.
TYPE C: TOWNHOMES
HOC-1 ONLY
35' MAX. HT.
PARKING
FOR RESIDENTIAL USES:
THE 1ST FLOOR SHALL BE
A MIN. 2'-6" FT. ABOVE
SIDEWALK ELEVATION
MINIMUM
25' LOTS
LOTS LESS THAN
25' WIDE REQUIRE A
CONDITIONAL USE PERMIT
BUILD TO LINE
TYPE D: OFFICE/RETAIL
HOC-2 ONLY
NO MAX.
HGT.
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE/RETAIL
PARKING
PARKING
100% FRONTAGE
65% FRONTAGE
WALL,
RAILING,
OR HEDGE
BUILD TO LINE
BUILD TO LINE

Figure 9

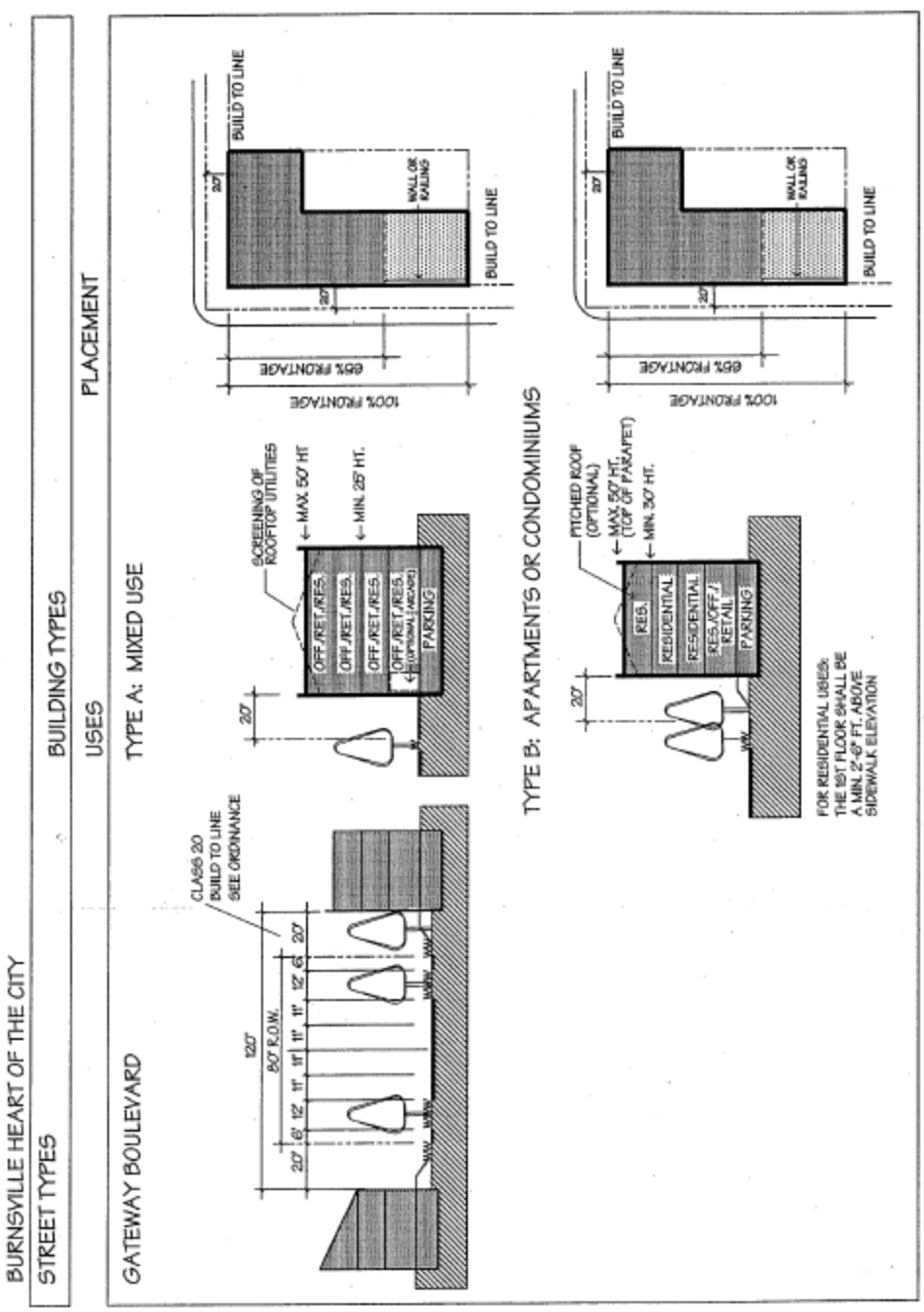

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
GATEWAY BOULEVARD
TYPE A: MIXED USE
CLASS 20
BUILD TO LINE
SEE ORDINANCE
120'
80' R.O.W.
20'
8'
12'
11'
11'
11'
11'
12'
8'
20'
SCREENING OF
ROOFTOP UTILITIES
MAX. 50' HT
MIN. 25' HT.
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
OFF./RET./RES.
(OPTIONAL LANDING)
PARKING
20'
BUILD TO LINE
20'
WALL OR
RAILING
BUILD TO LINE
20'
100% FRONTAGE
65% FRONTAGE
TYPE B: APARTMENTS OR CONDOMINIUMS
PITCHED ROOF
(OPTIONAL)
MAX. 50' HT.
(TOP OF PARAPET)
MIN. 30' HT.
RES.
RESIDENTIAL
RESIDENTIAL
RES./OFF./
RETAIL
PARKING
20'
FOR RESIDENTIAL USES,
THE 1ST FLOOR SHALL BE
A MIN. 2'-6" FT. ABOVE
SIDEWALK ELEVATION
BUILD TO LINE
20'
WALL OR
RAILING
BUILD TO LINE
20'
100% FRONTAGE
65% FRONTAGE

Figure 10

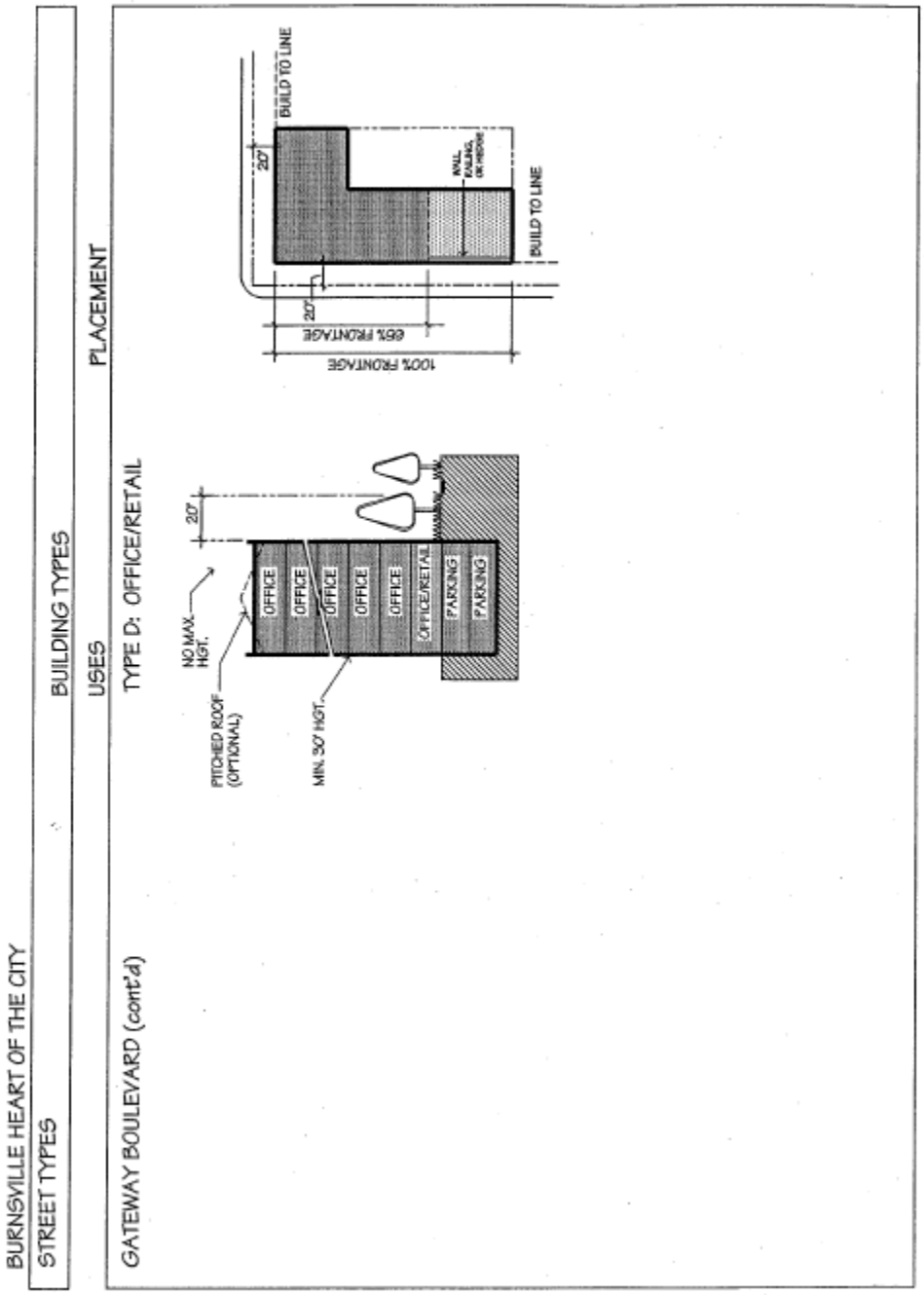

BURNSVILLE HEART OF THE CITY
STREET TYPES
BUILDING TYPES
USES
PLACEMENT
GATEWAY BOULEVARD (cont'd)
TYPE D: OFFICE/RETAIL
NO MAX. HGT.
PITCHED ROOF (OPTIONAL)
MIN. 30' HGT.
20'
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE
OFFICE/RETAIL
PARKING
PARKING
20'
20'
65% FRONTAGE
100% FRONTAGE
BUILD TO LINE
BUILD TO LINE

Figure 11

Building Type	Nicollet Ave.	2-way Angle	HOC-1 2-way Parallel	HOC-2 2-way Parallel	HOC-1 Burnsville Pkwy	HOC-2 Burnsville Pkwy	HOC-1 Travelers Trail	HOC-2 Travelers Trail	Gateway Blvd.
A Mixed Use	X	X	X	X	X	X	X	X	X
B Apts/Condo	X	X	X	X	X	X	X	X	X
C Townhouse			X	X	*		X		
D Office/Retail				X		X		X	X

* By CUP East of Nicollet Only

Figure 12

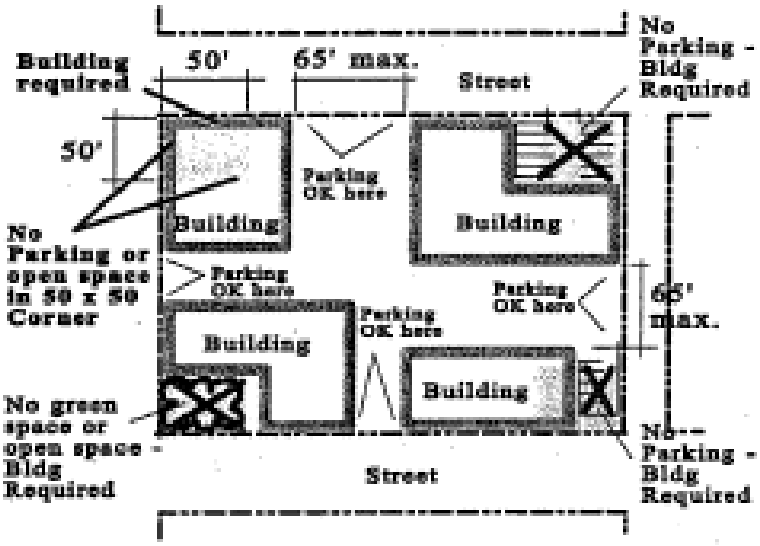


Figure 13

CHAPTER 23

SPECIAL REQUIREMENTS FOR ALL INDUSTRIAL DISTRICTS

SECTION:

10-23-1: Special Requirements And Performance Standards For All Industrial Districts
10-23-2: Accessory Retail Uses; Special Requirements
10-23-3: Retail Sales As Conditional Use; Special Requirements
10-23-4: Outdoor Accessory Merchandise Display By Conditional Use Permit
10-23-5: Alternative Exterior Building Materials; Special Requirements
10-23-6 Standards For Aggregate Processing, Related Products Manufacturing
10-23-7: Special Consideration For Properties Located In I-1, I-2, I-3, GIM And GIH Districts Affected By Public Improvement Projects Resulting In Land Taking

10-23-1: SPECIAL REQUIREMENTS AND PERFORMANCE STANDARDS FOR ALL INDUSTRIAL DISTRICTS:

(A) **Building Design and Materials:** All buildings shall be designed to accomplish the goals and policies of the Comprehensive Plan. Building materials shall be attractive in appearance, of a durable finish, and be of a quality that is compatible and harmonious with adjacent structures. All buildings shall be of good aesthetic and architectural quality, to ensure they will maintain and enhance the property values of neighboring properties and not adversely impact the community's public health, safety and general welfare.

1. Design Elements: All new building fronts and refacing of an existing building, shall include a minimum of three (3) of the following elements:

a. Accent materials;

b. A visually pleasing front entry that, in addition to doors, shall be accented a minimum of one hundred fifty (150) square feet around the door entrance for single occupancy buildings and a minimum of three hundred (300) square feet total for the front of multi-tenant buildings (this area shall be counted as 1 element);

c. Twenty five percent (25%) window coverage on each front that faces a street;

d. Contrasting, yet complementary material colors;

e. A combination of horizontal and vertical design features;

f. Irregular building shapes, or

g. Other architectural features in the overall architectural concept.

If the building configuration is placed on the lot in such a way that the main entrances are facing the side yard street, or interior side yard, they shall also meet the minimum of three elements.

If the applicant and the development review committee (DRC) cannot agree on the proposed building exterior elevations, the applicant shall be required to make an application for a conditional use permit to prove compatibility.

2. Accent Materials: Accent materials shall be wrapped around walls visible from public view. Painting accent bands on a major exterior material shall not be allowed as or substituted for visual relief, accenting, or a required element. Use of fiber cement trim, soffit and fascia shall be allowed as accent materials.

3. Major Exterior Materials: Major exterior materials of all walls including face brick, stone, glass, stucco, synthetic stucco, fiber cement vertical panel siding, architectural concrete and precast panels shall be acceptable as the major exterior wall material when they are incorporated into an overall design of the building. Stucco, synthetic stucco or fiber cement vertical panel siding shall not be allowed within twenty four inches (24”) from grade. Use of rain screens, panelized systems, or curtain walls are encouraged and will be verified for high quality design and materials through the development review committee. Fiber cement seam lines shall be architecturally integrated into the building design so that they are not visible. Seam lines can be filled, covered by other accent material or other method thereby making the seam lines invisible Color impregnated decorative block shall also be allowed as a major exterior wall surface, and shall be required to be sealed. All materials shall be color impregnated, with the exception of allowing architectural concrete precast panel systems and fiber cement siding to be painted. Painting shall not be allowed on color impregnated major exterior materials. Request for approval of cast in place systems shall be through a conditional use permit or planned unit development, whichever is deemed appropriate by city staff. If the architectural precast panel systems are painted, they shall be properly prepared and maintained regularly to prevent peeling, stripping, shading or any other form of deterioration or discoloration. Proof of manufacturer’s painting specifications shall be supplied prior to issuance of a building permit. This subsection (A)3 shall also apply to all exterior repairs, remodeling, or expansion of existing buildings that require a building permit.

4. Restricted Exterior Materials: Unadorned pre-stressed concrete panels, whether smooth or raked, nondecorative concrete block, sheet metal, corrugated metal or unfinished metal shall not be used as exterior materials. This restriction shall apply to all principal structures and to all accessory buildings. No more than twenty five percent (25%) of any exterior wall on a building shall be wood or metal accent material. This twenty five percent (25%) limit may be exceeded when used in a panelized system that consist of prefabricated, or factory-manufactured, panels that form a structural envelope, and significantly simplify on-site framing, and request for approval shall be through a conditional use permit or planned unit development.

5. Visual Relief: No wall shall exceed one hundred feet (100’) in length without visual relief. “Visual relief” may be defined as a varying design of the building by incorporating design features such as windows, horizontal and vertical patterns, contrasting material colors or varying wall depths.

6. Roofs: Roofs which are exposed or an integral part of the building aesthetics shall be constructed only of commercial grade asphalt shingles, wood shingles, standing seam metal, slate, tile, or copper. Flat roofs which are generally parallel with the first floor elevation are not subject to these material limitations.

7. Building and Roofing Materials: All building and roofing materials shall meet current accepted industry standards and tolerances, and shall be subject to review and approval by the development review committee for quality, durability, and aesthetic appeal. For all new buildings and building exterior renovations, the applicant shall submit to the city product samples, color building elevations, and associated drawings which illustrate the construction techniques to be used in the installation of such materials. Building and roofing materials not specifically approved in this Section may be allowed by a conditional use permit or planned unit development only after it is demonstrated that the proposed material is equal to or better than approved materials. The long range maintenance of the proposed material shall be incorporated as a condition of the approval and filed on the property.

(B) **Trash And Recyclable Materials:** All trash, recyclable materials, trash, recyclable materials handling equipment and compactors shall be one hundred percent (100%) screened from ground level view from public streets and adjacent properties. For the purposes of this section, "trash" means "mixed municipal solid waste" as defined under section 7-7-1 of this code.

(C) **Off Street Parking:** Design and maintenance of off-street parking areas shall be in accordance with section 10-7-26 of this title.

(D) **Accessory Structures:** Garages, accessory structures, screen walls and exposed area of retaining walls shall be of a similar type, quality and appearance as the principal structure.

(E) **Utilities:** The view of all rooftop equipment and related piping, ducting, electrical and mechanical utilities abutting a street on buildings constructed after January 1, 2006 shall be screened from the ground level view. Screening may include parapet walls, penthouses, or other architecturally integrated elements. Wood fencing or chain link with slats shall not be used for screening. The term '*ground level view'* shall be defined as *the view of the building from the furthest point of the width of the right-of-way from the property line(s) that abut a street*. A cross-sectional drawing shall be provided that illustrates the sight lines from the ground level view. For buildings constructed prior to January 1, 2006, for replacement of existing units, remodeling, and building expansions, the ground level view of all rooftop equipment and related piping, ducting, electrical and mechanical utilities shall be painted to match the building, designed to be compatible with the architectural treatment of the principal structure or screened by the use of parapet walls. Wood fencing shall not be used for screening.

(F) **Ground Mechanical Equipment:** Ground mechanical equipment shall be one hundred percent (100%) screened from contiguous properties and adjacent streets by opaque landscaping, or a screen wall shall be provided compatible with the architectural treatment of the principal structure.

(G) **Outdoor Storage:** Outdoor storage of materials or products may be authorized by conditional use permit.

(H) **External Loading And Service Areas:** All external loading and service areas accessory to industrial buildings must be one hundred percent (100%) screened from the ground level view from contiguous residential or commercial properties and adjacent streets, except at access points.

1. Whenever an Industrial district abuts an R-1 District, there shall be no loading docks on any building elevation that is either directly facing or oriented towards a residential use.

(I) **Height Limit:** There shall be no limit placed on the height of buildings in I Industrial Districts, except that any building in excess of forty five feet (45') shall be by conditional use permit.

(J) **Compatibility:** All structures shall be compatible with other structures in the area.

10-23-2: **ACCESSORY RETAIL USES; SPECIAL REQUIREMENTS:**

(A) Retail sales of products stored or manufactured on the site shall be allowed as an accessory use. A maximum of twenty percent (20%) of the floor area of the space occupied by the particular business, up to a maximum of eight hundred fifty (850) square feet, may be used for retail sales purposes. A single structure leased to more than five (5) tenants under separate leases shall have no more than ten percent (10%) of the total building area devoted to retail space as an accessory use. An accessory retail sales area of greater than eight hundred fifty (850) square feet per business may be approved by conditional use permit, provided that the maximum floor area percentages of this paragraph are not exceeded.

(B) Parking as required for retail in this title shall be provided in addition to that required for the principal use.

(C) No sign or display in excess of four (4) square feet shall be placed on or off the property advertising the existence of the retail sales facility.

(D) If excessive on-street parking of vehicles occurs, the sales shall cease or be reduced to the level that the off street parking can accommodate.

10-23-3: **RETAIL SALES AS PRINCIPAL USE; SPECIAL REQUIREMENTS:**

(A) Retail sales approved by conditional use permit as the principal use of a single tenant building shall have a minimum sales floor area of ten thousand (10,000) square feet. The minimum sales floor area in a multi-tenant building shall be five thousand (5,000) square feet per business tenant.

(B) All off street parking and loading shall be provided as required for retail uses in this title.

10-23-4: **OUTDOOR ACCESSORY MERCHANDISE DISPLAY BY CONDITIONAL USE PERMIT:** In I-1 and I-2 Districts, no outdoor merchandise display shall be allowed except by conditional use permit when such outdoor display is specifically intended to be accessory to the primary use(s) of the premises. A conditional use permit may be issued for accessory outdoor merchandise display in I-1 and I-2 Districts, provided the following standards are considered and satisfactorily met on a continuous basis:

(A) The outdoor merchandise display area shall be limited to one surface area per building. The display area shall be limited in size to fifteen percent (15%) of the gross floor area of the principal structure. The maximum dimension of a display area shall be thirty feet (30'), and in no case shall the larger dimension of the display area be more than two (2) times the lesser dimension. In no case shall the outdoor merchandise display area exceed a total of six hundred (600) square feet per site. For the purpose of these standards, the term "site" shall be defined as a lot or group of lots contained within a unified development project.

(B) The outdoor display area shall be clearly identified upon an approved site plan for the property. The display area shall meet the required side and rear yard setbacks for the district in which it is located, and shall be set back no less than ten feet (10') from the front property line. No outdoor display activities shall occur in a traffic visibility triangle as provided for by section 10-7-6 of this title. The display area surface may be elevated up to three feet (3') above the adjacent ground surface. The appropriate height of the display area shall be determined by considering the size of the item(s) to be displayed, the proportion of the display area to the building, and the location of the display area on the site.

(C) No displayed merchandise shall exceed a maximum height of twelve feet (12') above the display surface.

(D) Outdoor display areas shall be one hundred percent (100%) screened at a minimum of six feet (6’) in height from view of adjacent residential uses and residential uses located across the street.

(E) No additional lighting shall be installed to illuminate the display area.

(F) The display area shall be surfaced with concrete or an approved equivalent to control dust and erosion. The surface shall be properly maintained to prevent deterioration. The display area shall be architecturally compatible with the principle structure of the site through the use of similar building materials or fencing around the perimeter of the display area. The display area shall be enhanced with appropriate, year round landscaping.

(G) The display area shall not take up required parking spaces or landscaping areas. No outdoor display shall be permitted upon a sidewalk.

(H) The square footage of outdoor display areas shall be included in the calculation of required off-street parking for the principal use of the property.

(I) All display of merchandise shall occur in a neat and orderly fashion without signage. The display of wearing apparel, highly flammable materials, and merchandise with wind moveable parts and appendages shall be prohibited.

(J) Any power equipment and vehicles that are displayed shall be disabled to prevent them from being started and operated while they are on display.

(K) The provisions of section 10-5-5 shall be considered and satisfactorily met.

(L) Office-warehouse, office and wholesale showroom and multi-tenant warehouse facilities shall be subject to the requirements of section 10-7-44 of this title.

(M) Open storage lots shall be subject to the requirements of section 10-7-45 of this title.

(N) Open sales/rental lots shall be subject to the requirements of section 10-7-46 of this title.

10-23-5: **ALTERNATIVE EXTERIOR BUILDING MATERIALS; MINIMUM REQUIREMENTS:**

(A) Sheet aluminum, corrugated aluminum, asbestos, iron, plain or painted plain concrete blocks shall not be deemed acceptable as major exterior wall materials on buildings within I-2 General

Industrial Districts, except as permitted by a conditional use permit issued by the city council pursuant to section 10-5-5 of this title. The following standards apply to conditional use permits under this paragraph:

1. The building shall be an accessory structure.

2. The building shall not be occupied by personnel.

3. The building shall be used to house material, parts or equipment which would otherwise constitute open storage.

4. The building shall be generally not visible from major arterial roadway corridors.

5. The landscaping of the area surrounding the location shall provide natural visual barriers to the building.

6. The building shall be constructed of long term maintenance free materials. A manufacturer's warranty shall be prima-facie evidence of compliance with this standard.

(B) The applicant shall have the burden of establishing that these standards and the standards of section 10-5-5 of this title have been met. The planning commission and the city council may attach conditions they deem necessary to accomplish the goals and objectives of the Comprehensive Plan.

10-23-6: **STANDARDS FOR AGGREGATE PROCESSING, RELATED PRODUCTS MANUFACTURING:**

(A) Aggregate processing and related businesses shall be designed, operated and maintained to appear and function in a manner that is consistent with and comparable to other permitted uses within the GIH Gateway Industrial Heavy Districts. Processing, storage, receiving and shipping activities shall be located within or behind the principal structure, in the portions of lots that are opposite the railroad tracks, and will thereby, be substantially screened from view from the TH 13 corridor and adjacent streets. Every reasonable effort shall be made to house these activities and uses within buildings. Those activities and uses that cannot reasonably be located within buildings shall be located behind structures, and/or screened by one or a combination of berms, landscaping, approved walls or fences.

B) These businesses shall at all times be operated in strict compliance with the Minnesota Pollution Control Agency’s regulations covering, noise, dust emissions, air quality, odor, and surface and ground water quality protection.

10-23-7 **SPECIAL CONSIDERATION FOR PROPERTIES LOCATED IN I-1, I-2, I-3, GIM AND GIH DISTRICTS AFFECTED BY PUBLIC IMPROVEMENT PROJECTS RESULTING IN LAND TAKING:**

(A) Properties that become non-conforming in terms of green area, setbacks and parking requirements as a direct result of a public improvement project resulting in loss of land (taking) for public roadway right of way or easements shall be required to apply for a variance when proposing any building or parking expansion affected by the land taking. Such variance requests will be

reviewed by the planning commission and city council. Variance requests resulting from publicly acquired right-of-way and easements shall constitute a hardship as defined in section 10-5-4 (A) of this title as the "plight of the landowner is not created by the landowner." Variances to other performance standards shall be considered as set forth in section 10-5-4 of this title.

(B) Variances for setbacks, green area and parking requirements shall be based on the following criteria.

1. Setback variances for principle and accessory structures or parking shall only be considered on the side of the structure(s) or parking lot where the public taking resulted in the non-conformity.

2. Maximum setback variance that will be considered shall be the existing setback before the taking less the amount of the taking. A minimum setback for primary and accessory structures shall be ten feet (10'). A minimum setback for parking shall be five feet (5').

3. Maximum reduction in required green area for the total land area considered by a variance shall be the percent required by section 10-30A-9 of this title at the time of the taking less the percent removed as a result of the taking. Minimum required green area shall not be less than ten percent (10%) of the total lot area after taking.

4. Maximum reduction in required parking spaces considered by a variance shall be only the spaces eliminated as a direct result of the taking. If a property has an approved proof of parking plan with spaces not yet utilized as parking at the time of the taking, the owner shall install such spaces to replace those eliminated by the taking prior to consideration of a variance.

[2-3-97 Amd. Ord. 651] [3-3-97 Amd. Ord. 653] [12-1-97 Amd. Sec. 23 (G) (H) Ord. 695] [2-7-00 Amd. Sec. 1 A-L Ord. 783] [7-1-02 Amd Sec. 1 (I) Ord. 851] [11-18-02 Amd. Add Sec. 6 (A), (B) Ord. 862A] [5-17-04 Amd. Sec. 1(A) (2.), (3.) (5.) Ord 923] [12-6-04 Add Sec.7 Ord 951] [9-6-05 Amd. Sec. 1 (E) Ord. 991] ; [8-19-08 Amd Sec. 1 (B), (C), (F), (H), (J), (K), delete (I) &(L); Secs. 2, 3, 4 (D), Add (L), (M), (N) Ord 1132]; [12-1-08 Amd. Sec, 1(A) (3,4,5), Sec. 1(H) (1) Ord. 1145]; [4-6-2010 Amd. Sec. 1, Ord. 1196]

CHAPTER 24

I-1 INDUSTRIAL PARK DISTRICT

SECTION:

10-24-1: Purpose And Intent
10-24-2: Permitted Uses
10-24-3: Permitted Accessory Uses
10-24-4: Conditional Uses
10-25-5 Interim Uses
10-24-6: Lot Area, Lot Width And Yard Requirements

10-24-1: **PURPOSE AND INTENT:** The purpose of the I-1 Industrial Park District is to provide for the establishment of warehousing and light industrial development and large volume truck-oriented uses.

10-24-2: **PERMITTED USES:** Within any I-1 Industrial Park District, no structure or land shall be used except for one or more of the following uses:

Automobile upholstery, tire recapping and major repair when conducted entirely within an enclosed building.

Bottling works.

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Commercial zero lot line development, pursuant to section 10-7-41 of this title.

Conducting a process, fabricating, wholesale operation, assembly, packaging, warehouse, distribution, manufacturing, treatment or providing a service including, but not limited to, any of the following uses completely contained within a building, unless otherwise noted, and meeting the performance standards applicable to the I-1 District:

Batteries (wet cell).

Brick, ceramic, and glass operations.

Computers and accessories including circuit boards and software.

Electronic components and accessories.

Glass cutting and sales.

Measuring, analyzing, and controlling instruments.

Medical technologies/manufacturing.

Metalworking such as stamping, welding, machining, extruding, plating, grinding, polishing and Cleaning.

Millworking.

Office and commercial equipment.

Paper products from previously processed paper.

Pharmaceuticals, health and beauty products.

Plastic injection molding.

Secondary value added meat processing (excludes slaughterhouses and rendering plants).

Secondary value added operations for paint, plastic, or rubber (excludes manufacturing of raw materials).

Stonecutting.

Textiles and fabric.

Day care nursery.

Laundries.

Machine shops.

Mini-storage.

Office.

Office warehouse and multi-tenant office warehouse facilities: subject to the requirement of section 10-7-44 of this title.

Radio and television studios.

Research laboratories.

Trade or business school.

Warehousing and wholesaling subject to the requirements of section 10-7-44 of this title.

10-24-3: **PERMITTED ACCESSORY USES:** Within the I-1 Industrial Park District, the following uses shall be permitted accessory uses:

Antennas mounted on an existing structure, as regulated by chapter 29 of this title.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Off-street parking and loading as regulated by this title.

Residential structures and related residential uses necessary for security and safety reasons in relation to a principal use.

Signs as regulated by chapter 30 of this title.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

Temporary/seasonal outdoor sales uses, subject to the provisions of section 10-19-2-1 of this title.

10-24-4: **CONDITIONAL USES:** Within the I-1 Industrial Park District, no structure or land shall be used for the following uses except by conditional use permit:

Any conditional uses as allowed in the B-3 District.

Armories, convention halls, sports arenas and stadiums.

Contractors' yards when contained within a building or a completely fenced area.

Essential service structures.

Firearm range.

Heliports.

Medical waste transfer facility, as defined under section 10-4-2 of this title, provided that the containerization and decontamination of the waste shall be conducted entirely within a building, that the facility shall be the sole occupant of the building, that the building shall not be located adjacent to or across the street from any residential or commercial districts, and that the operator of the facility provide evidence that the facility is in compliance with all applicable county, state, and federal regulations.

Motor vehicle terminal and maintenance garage.

Open sales/rental lot subject to the requirements of section 10-7-46 of this title.

Open storage lot subject to the requirements of section 10-7-45 of this title.

Outdoor accessory merchandise display, subject to the provisions of section 10-23-4 of this title.

Recycling center, nonhazardous resource recovery facility, when conducted entirely within a building.

Religious assembly when incorporated into a multi-tenant building, and where the use or multiple religious assembly uses do not occupy more than forty nine percent (49%) of the total square footage of the building.

Retail sales as provided for in section 10-23-3 of this title.

Single satellite earth station antenna in excess of two meters (2 m) in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) or less in diameter, are regulated in chapter 29 of this title.

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

10-24-5: **INTERIM USES:** Within any I-1 Industrial Park District, no structure or land shall be used for the following uses except by interim use permit:

Interim uses permitted in the B-1 District, not including target, trap, and skeet shooting ranges.

Land reclamation, mining and soil processing subject to chapters 8, 9 and 10 of this title.

Miniature golf courses.

Required structures need not be accessory structures and need not comply with the special minimum requirements of subsection 10-23-1(A)2 of this title. The landscaping requirements of subsection 10-30A-9(A) may be waived where appropriate.

10-24-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

(A) Not more than fifty percent (50%) of the lot area shall be occupied by buildings.

(B) The following minimum requirements shall be observed subject to the additional requirements, exceptions and modifications as set forth in this section and chapter 23 of this title:

Lot area	40,000 square feet
Lot width	150 feet
Setback – principal structure	
Front yard	40[1] (60) feet
Side yard	20 (40) feet
Side yard (street)	40 (40) feet
Rear yard	20 (60) feet
Setback – accessory structure	
Front yard	40 (60) feet
Side yard	10 (20) feet
Side yard (street)	40 (40) feet
Rear yard	20 (20) feet

Setback – parking	
Front yard	20 (20) feet
Side yard	5 (20) feet
Side yard (street)	15 (20) feet
Rear yard	5 (20) feet

Setbacks in parentheses apply adjacent to R-1, R-1A and R-2 Districts. A twenty (20) foot setback is required for any structure or parking adjacent to any other residential district.

Note:
[1.] Plus one (1) foot for every one (1) foot of building height over thirty (30) feet (maximum setback of eighty (80) feet).

[7-7-97 Amd. Sec. 1, 2, 3 Ord. 674]; [10-6-97 Amd. Sec. 1 Ord 687]; [2-7-00 Amd. Sec. 3 Ord. 783]; [7-1-02 Amd. Sec. 1 Ord. 851]; [7-6-04 Amd Sec. 4 Ord. 932]; [4-17-06 Amd. Secs. 1, 2, 3, Ord 1025]; [12-4-06 Amd. Sec. 2 Ord. 1056]; [8-19-08 Amd. Secs. 1, 2, 3,(delete 3A), Amd. 4, Add 5, 6 Ord 1132]; [6-2-09 Amd. Sec. 2 Ord 1166]; [4-6-2010 Amd. Secs. 2, 3, 4, 5, 6 Ord. 1196]

CHAPTER 25

I-2 GENERAL INDUSTRY DISTRICT

SECTION:

10-25-1: Purpose And Intent
10-25-2: Permitted Uses
10-25-3: Permitted Accessory Uses
10-25-4: Conditional Uses
10-25-5: Interim Uses
10-25-6: Lot Area, Lot Width And Yard Requirements
10-25-7: Gateway Design Standards

10-25-1: **PURPOSE AND INTENT:** The purpose and intent of the I-2 General Industry District is to provide areas suitable for the location of general industrial activities, including heavy manufacturing and other such activities which, because of the nature of the product or character of operation, require isolation from or special protections for non-industrial uses.

10-25-2: **PERMITTED USES:** Within any I-2 General Industry District, no structure or land shall be used except for one of more of the following uses:

Any use permitted in the I-1 District as regulated therein.

Crude oil, gasoline or other liquid storage tanks.

Manufacturing, compounding, assembly, packaging, treatment or storage of the following products or materials: brewing, cement, concrete, stone cutting, brick, glass, batteries (wet cell), ceramic products, mill working, metal polishing and plating, paint (pigment manufacturing), rubber products, plastics, meat packing, flour, feed, grain milling, sawmill, lime, plaster of paris, cloth, adhesives.

10-25-3: **PERMITTED ACCESSORY USES:** Within any I-2 General Industry District, the following uses shall be permitted accessory uses:

Accessory uses permitted in I-1 Industrial Park District.

10-25-4: **CONDITIONAL USES:** Within the I-2 General Industry District, no structure or land shall be used for the following uses except by conditional use permit:

Acid manufacturing.

Any conditional use permitted in the I-1 district.

Auto wrecking, junk yard, used auto parts (open storage) subject to the requirements of section 10-7-45 of this title.

Explosives including all uses, storage or manufacture of materials or products such as TNT or dynamite which would decompose by detonation.

Firearm range.

Incineration or reduction of waste material other than customarily incidental to a principal use.

Kilns or other heat processes fired by means other than electricity.

Open storage lot (principal or accessory use) subject to the requirements of section 10-7-45 of this title.

Outdoor accessory merchandise display subject to section 10-23-4 of this title.

Rail unloading facility.

Refuse and garbage disposal.

Storage, use or manufacture of materials or products which could decompose by detonation.

Transient merchants subject to title 3 of this code.

Truck or freight terminal.

10-25-5: **INTERIM USES:** Within any I-2 General Industry District, no structure or land shall be used for the following uses except by interim use permit:

Interim uses permitted in the I-1 District.

An accessory structure authorized by conditional use permit under subsection 10-23-5(A) of this title may be occupied by personnel as an interim use for a period not to exceed one year to facilitate the expansion of the principle structure, provided that the accessory structure complies with all applicable requirements of the building and fire codes pertaining to the proposed occupancy and use.

10-25-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

(A) Not more than fifty percent (50%) of the lot area shall be occupied by buildings.

(B) The following minimum requirements shall be observed subject to the additional requirements, exceptions and modifications as set forth in this chapter and chapter 23 of this title:

Lot Area	40,000 square feet
Lot Width	100 feet
Setback – Principal Structure	
Front Yard	40 (50) feet
Side Yard	15 (50) feet
Side Yard (Street)	40 (50) feet
Rear Yard	30 (50) feet

Setback – Accessory Structure	
Front Yard	40 (50) feet
Side Yard	15 (50) feet
Side Yard (Street)	40 (50) feet
Rear Yard	30 (50) feet
Setback – Parking	
Front Yard	10 (20) feet
Side Yard	5 (20) feet
Side Yard (Street)	10 (20) feet
Rear Yard	5 (20) feet

Setbacks in parentheses apply adjacent to R-1, R-1A, and R-2 Districts. A twenty (20) foot setback is required for any structure or parking adjacent to any other residential district.

10-25-7: **GATEWAY DESIGN STANDARDS:** Within any gateway district as delineated on the official zoning map, all provisions of this code shall be met. In addition, all structures and uses shall comply with Burnsville North Gateway Guidelines as set forth in ordinance 1022, which is incorporated herein by reference. To the extent this title conflicts with ordinance 1022, ordinance 1022 shall control.

[11-15-82 Ord. 244]; [2-7-00 Amd. Sec. 3, Ord. 783]; [7-1-02 Amd. Sec. 3A Ord 851]; [7-6-04 Amd. Sec. 4 Ord. 932]; [4-3-06 Add Sec. 5 Ord 1022]; [8-19-08 Amd. Secs. 1, 2, 3, 3A, 4, 5, 6, 7, Ord. 1132]; [4-6-2010 Amd. Secs. 4, 6, Ord. 1196]

CHAPTER 26

I-3 OFFICE AND INDUSTRIAL PARK DISTRICT

SECTION:

10-26-1: Purpose And Intent
10-26-2: Permitted Uses
10-26-3: Permitted Accessory Uses
10-26-4: Conditional Uses
10-26-5: Interim Uses
10-26-6: Lot Area, Lot Width, And Yard Requirements

10-26-1: **PURPOSE AND INTENT:** The purpose of the I-3 Office And Industrial Park District is to provide for the establishment of warehouse, light manufacturing alongside a larger office type development. The city's objective for this district is to attract high quality industrial development that will provide higher income employment and provide an opportunity for creation and expansion of employment centers, business centers, corporate headquarters and a diverse tax base.

10-26-2: **PERMITTED USES:** Within any I-3 Office And Industrial Park District, no structure or land shall be used except for one or more of the following uses:

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Commercial zero lot line development, pursuant to section 10-7-41 of this title.

Day care or nursery.

Instruction/learning center.

Manufacturing, production, processing, cleaning, storage, servicing, repair or testing of materials, goods or products that is wholly contained within a building and which meets and maintains all applicable standards established by the State of Minnesota.

Mini-storage.

Offices of a general nature when they do not include retailing.

Office-service uses.

Office-warehouse and multi-tenant office-warehouse subject to the requirements of section 10-7-44 of this title.

Research laboratories.

Trade or business schools.

Warehousing and wholesaling subject to the requirements of section 10-7-44 of this title.

10-26-3: **PERMITTED ACCESSORY USES:** Within the I-3 Office And Industrial Park District, the following shall be permitted accessory uses:

Antennas mounted on an existing structure, as regulated by chapter 29 of this title.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Off-street parking and loading as regulated by chapter 7 of this title.

Signs as regulated by chapter 30 of this title.

Residential structures and related residential uses necessary for security and safety reasons in relation to a principal use.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

10-26-4: **CONDITIONAL USES:** Within the I-3 Office And Industrial Park District, no structure or land shall be used for the following uses except by conditional use permit:

Armories, convention halls, subject to title 3 of this code.

Essential service structures.

Heliports.

“Medical waste transfer facility”, as defined under section 10-4-2 of this title, provided that the containerization and decontamination of the waste shall be conducted entirely within a building, that the facility shall be the sole occupant of the building, that the building shall not be located adjacent to or across the street from any residential or commercial districts or uses, and that the operator of the facility provide evidence that the facility is in compliance with all applicable county, state, and federal regulations.

Open storage lot subject to the requirements of section 10-7-45 of this title.

Outdoor storage subject to screening and buffer requirements of section 10-7-18 of this title.

Recycling, reclamation.

Single satellite earth station antenna in excess of two meters (2 m) in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) or less in diameter, are regulated in chapter 29 of this title.

Sports arenas and stadiums.

Sports performance training center.

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

10-26-5: **INTERIM USES:** Within any I-3 Office And Industrial Park District, no structure or land shall be used for the following uses except by interim use permit:

Interim uses permitted in the I-1 District.

10-26-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

(A) Not more than forty percent (40%) of the lot area shall be occupied by buildings.

(B) The following minimum requirements shall be observed subject to the additional requirements, exceptions and modifications as set forth in this section and chapter 23 of this title.

(C)

Lot area	40,000 square feet
Lot width	150 feet
Setback - principal structure	
Front yard	40[1] (60) feet
Side yard	20 (40) feet
Side yard (street)	40 (40) feet
Rear yard	20 (60) feet
Setback – accessory structure	
Front yard	40 (60) feet
Side yard	10 (20) feet
Side yard (street)	40 (40) feet
Rear yard	20 (20) feet
Setback – parking	
Front yard	20 (20) feet
Side yard	15 (20) feet
Side yard (street)	20 (20) feet
Rear yard	15 (20) feet

Setback in parentheses apply adjacent to R-1, R-1A, and R-2 districts. A twenty (20) foot setback is required for any structure or parking adjacent to any other residential district.

Note:
[1.] Plus one (1) foot for every one (1) foot of building height over thirty (30) feet (maximum setback of eighty (80) feet).

[7-7-97 Amd. Sec. 1, 2, 3 Ord. 674]; [10-6-97 Amd. Sec. 1 Ord. 687]; [9-7-99 Amd. Sec. 4 (A) Ord. 768]; [2-7-00 Amd. Sec. 3 Ord. 783]; [7-1-02 Amd. Sec. 1 Ord 851]; [7-6-04 Amd. Sec. 4 Ord 932]; [6-19-06 Amd. Sec. 1, 3 Ord 1035]; [12-4-06 Amd. Sec 2 Ord 1056]; [8-19-08 Amd. Secs. 1, 2, 3, 3A, 4, 5, 6, Ord 1132]; [6-2-09 Amd. Sec. 2 Ord 1166]; 4-6-2010 Amd. Secs. 2, 3, 4, 6, Ord. 1196]

CHAPTER 26A

GIM GATEWAY INDUSTRIAL MEDIUM DISTRICT

SECTION:

10-26A-1: Purpose And Intent
10-26A-2 Permitted Uses
10-26A-3: Permitted Accessory Uses
10-26A-4: Conditional Uses
10-26A-5: Interim Uses
10-26A-6: Registered Uses
10-26A-7: Lot Area, Lot Width, And Yard Requirements
10-26A-8: Gateway Design Standards

10-26A-1: **PURPOSE AND INTENT:** The purpose of the GIM Gateway Industrial Medium District is to provide an area for future business parks, medical technologies and industrial uses that do not require outdoor storage as a component of their operations. This district was created to implement the Minnesota River Quadrant (MRQ) Plan identified by the Comprehensive Plan. The GIM District sets forth interim strategies to allow for the temporary use of property for exterior storage/display until conditions arise where permanent uses develop. Outdoor storage is required to be 100% screened, which will support an upgrade in the image of the area.

10-26A-2: **PERMITTED USES:** Within the GIM Gateway Industrial Medium district, no structure or land shall be used except for one or more of the following uses:

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Manufacturing, production, processing, cleaning, storage, servicing, repair or testing of materials, goods or products that is wholly contained within a building and which meets and maintains all applicable standards established by the State.

Office - service uses.

Office – warehouse subject to the requirements of section 10-7-44 of this title.

Offices of a general nature when they do not include retailing.

Research laboratories.

Warehousing and wholesaling when conducted completely within a building subject to the requirements of section 10-7-44 of this title.

10-26A-3: **PERMITTED ACCESSORY USES:** Within the GIM Gateway Industrial Medium District, the following shall be permitted accessory uses:

Antennas mounted on an existing structure, as regulated by chapter 29 of this title.

Daycare or nursery.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Off street parking and loading as regulated by chapter 7 of this title.

Rail loading/unloading facilities.

Signs as regulated by chapter 30 of this title.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multi-channel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

10-26A-4: **CONDITIONAL USES:** Within the GIM Gateway Industrial Medium District, no structure or land shall be used for the following uses except by conditional use permit:

Essential service structures.

Existing uses, lots and structures that become non-conforming as a result of the passage of ordinance 862, including truck terminals, provided that they involve no outdoor storage or display of either raw materials or finished products, not vehicles, and provided that all parking lots shall be substantially screened from view from all abutting streets.

Heliports.

Recycling, reclamation inside building.

Single satellite earth station antennas in excess of two meters (2 m) in diameter and single antennas designed to receive direct broadcast services or multi-channel multipoint distribution services in excess of one meter (1 m) or less in diameter, as regulated in chapter 29 of this title.

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

10-26A-5: **INTERIM USES:** Within the GIM Gateway Industrial Medium District, no structure or land shall be used for the following uses except by interim use permit:

Automobile sales when located entirely within a building.

Open sales/rental lot subject to the requirements of section 10-7-46 of this title.

Open storage lot subject to the requirements of section 10-7-45 of this title.

Outdoor storage subject to screen and buffer requirements of sections 10-7-18 and 10-7-21 of this title.

10-26A-6: **REGISTERED USES:**

(A) Within the GIM Gateway Industrial Medium District uses that become nonconforming as a result of the passage of ordinance 862 that are ineligible for a conditional use permit may be registered with the city.

(B) A registration statement shall be prepared by the landowner. The statement shall describe the nonconforming use and site.

(C) Following receipt of the recommendation of the planning commission, the city council shall approve the registration statement if it is complete and accurate. The city council may change the registration statement to make it complete and accurate.

(D) A registration statement approved by the city council shall be conclusive as to the extent and nature of the use.

10-26A-7: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

(A) Not more than forty percent (40%) of the lot area shall be occupied by buildings.

(B) The following minimum requirements shall be observed subject to the additional requirements, exceptions and modifications as set forth in this section and chapter 23 of this title.

Lot area	40,000 square feet
Lot width	150 feet
Setback – principal structure	
Front yard	40[1] (60) feet
Side yard	20 (40) feet
Side yard (street)	40 (40) feet
Rear yard	20 (60) feet
Setback – accessory structure	
Front yard	40 (60) feet
Side yard	10 (20) feet
Side yard (street)	40 (40) feet
Rear yard	20 (20) feet
Setback – parking	
Front yard	20 (20) feet
Front yards abutting TH 13, or its frontage road, or CSAH 5	25 (25) feet
Side yard	15 (20) feet
Side yard (street)	20 (20) feet
Rear yard	15 (20) feet

Setbacks in parentheses apply abutting to R-1, R-1A, and R-2 districts. A twenty (20) foot setback is required for any structure or parking adjacent to any other residential district.

Note: [1.] Plus one (1) foot for every one (1) foot of building height over thirty (30) feet (maximum setback of eighty (80) feet).

10-26A-8: **GATEWAY DESIGN STANDARDS:** Within any Gateway District as delineated on the official zoning map, all provisions of the code shall be met. In addition, all structures and uses shall comply with Burnsville North gateway guidelines as set forth in ordinance 1022, which is incorporated herein by reference. To the extent this title conflicts with ordinance 1022, ordinance 1022 shall control.

[11-18-02 Ord. 862]; [7-6-04 Amd. Sec. 6 Ord 932]; [12-20-04 Amd. Secs. 1 & 3 Ord 955]; [4-3-06 Add Sec. 7 Ord 1022]; [12-4-06 Amd. Sec. 2 Ord 1056]; [8-19-08 Amd. Secs. 1,2,3,4,5,6,7 Ord 1132]; [6-2-09 Amd. Sec. 2 Ord 1166]; [4-6-2010 Amd. Secs. 3, 4, 7, Ord. 1196]

CHAPTER 26B

GIH GATEWAY INDUSTRIAL HEAVY DISTRICT

SECTION:

10-26B-1: Purpose And Intent
10-26B-2: Permitted Uses
10-26B-3: Permitted Accessory Uses
10-26B-4: Conditional Uses
10-26B-5: Registered Uses
10-26B-6: Lot Area, Lot Width And Yard Requirements

10-26B-1: **PURPOSE AND INTENT:** The purpose of the GIH Gateway Industrial Heavy District is to provide areas for heavy industrial users with outdoor operations and storage needs. This district was created to implement the Minnesota River Quadrant (MRQ) plan identified by the Comprehensive Plan and provides an area of the community for heavy industrial uses with access to Highway 13 and the railroad.

10-26B-2: **PERMITTED USES:** Within the GIH Gateway Industrial Heavy District, no structure or land shall be used except for one or more of the following uses:

Bus benches, shelters, and transit facilities provided they comply with title 8 of this code.

Manufacturing, conducting a process, fabricating, wholesale operation or providing a service including any of the following meeting the performance standards applicable to the GIH Gateway Industrial Heavy District:

Aggregate products including asphalt and concrete (subject to section 10-23-6 of this title).

Automobile sales, when located entirely within a building.

Automobile upholstery, tire recapping and major repair when conducted entirely within an enclosed building.

Bottling works.

Laundries.

Machine shops.

Motor vehicle terminal and maintenance garage.

Off street parking and loading as regulated by this title.

Office.

Office-warehouse subject to the requirements of section 10-7-44 of this title.

Paper products from previously processed paper.

Radio and television studios.

Recycling/resource recovery totally within a building.

Research laboratories.

Temporary/seasonal outdoor sales uses, subject to the provisions of section 10-19-2-1 of this title.

Warehousing and wholesaling when completely within a building and subject to the requirements of section 10-7-44 of this title.

10-26B-2: **PERMITTED ACCESSORY USES:** Within the GIH Gateway Industrial Heavy District, the following uses shall be permitted accessory uses:

Antennas mounted on an existing structure, as regulated by chapter 29 of this title.

Daycare nursery.

Incidental accessory uses as permitted by section 10-7-42 of this title.

Off street parking and loading as regulated by this title.

Rail loading/unloading facilities.

Residential structures and related residential uses necessary for security and safety reasons in relation to a principal use.

Signs as regulated by chapter 30 of this title.

Single satellite earth station antenna two meters (2 m) or less in diameter and single antenna designed to receive direct broadcast services or multi-channel multipoint distribution services one meter (1 m) or less in diameter and antennas designed to receive television broadcast signals, as regulated in chapter 29 of this title.

10-26B-4: **CONDITIONAL USES:** Within the GIH Gateway Industrial Heavy District, no structure or land shall be used for the following uses except by conditional use permit:

Accessory car wash subject to section 10-7-43 of this title.

Antennas mounted on an existing structure, exceeding fifteen feet (15’) above the highest point of the structure, as regulated by chapter 29 of this title.

Auto repair.

Boat sales, showroom, limited inventory on site, screened.

Building materials sales.

Buildings temporarily located for purposes of construction on the premises for a period not to exceed time necessary to complete construction.

Car wash as a principal use.

Commercial (production) bakery.

Consumer repair services.

Contractors' yards when contained within a building or completely screened to meet the requirements of section 10-7-18 of this title.

Electrical contractor.

Essential service structures.

Exterminating services.

Existing uses, lots and structures that become nonconforming as a result of the passage of ordinance 862; provided, that they involve no outdoor storage, or display of either raw materials or finished products.

Firearm range completely within a building.

Furniture showroom.

Garden supply store (subject to outdoor storage or display standards).

Grocery store, fruit or vegetable store.

Heating and air-conditioning dealer.

Heliports.

Hotel.

Kennel.

Liquor store subject to the requirements of title 3 of this code.

Masonry contractor.

Newspaper and publishing facility.

Office and wholesale showroom subject to the requirements of section 10-7-44 of this title.

Open storage lot subject to the requirements of section 10-7-45 of this title and said outdoor storage shall be limited to twenty five percent (25%) of the site and located behind the building to the extent possible.

Open sales/rental lot subject to the requirements of section 10-7-46 of this title.

Outdoor accessory merchandise display, subject to the provisions of section 10-23-4 of this title.

Plumbing contractor.

Plumbing outlet store.

Printing shop.

Private garages, off-street parking and loading spaces as regulated in this title.

Public telephone booths.

Recreational vehicle sales subject to the requirements of section 10-7-46 of this title.

Recycling and reclamation of non-hazardous materials, when conducted entirely within a building.

Restaurant – freestanding - minimum five thousand (5,000) square feet.

Restaurant within a building having a principal use other than a restaurant.

Single satellite earth station antenna in excess of two meters (2 m) in diameter and single antenna designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) or less in diameter, as regulated in chapter 29 of this title.

Tenant restaurants, cafeterias and retail service limited to tenants of the building, provided that they be essentially limited to providing service to the users of the permitted use, and that no signs or other evidence of these uses are visible from the exterior of the building. (Ord. 364, 2-20-1990; amd. Ord. 674, 7-7-1997).

Towers as regulated in chapter 29 of this title.

Transient merchants subject to title 3 of this code.

Truck equipment sales located entirely within a building.

Truck terminals.

10-26B-5: **REGISTERED USES:**

(A) Within the GIH Gateway Industrial Heavy District uses that become non-conforming as a result of the passage of ordinance 862 that are ineligible for a conditional use permit may be registered with the city.

(B) A registration statement shall be prepared by the landowner. The statement shall describe the nonconforming use and site.

(C) Following receipt of the recommendation of the planning commission, the city council shall approve the registration statement if it is complete and accurate. The city council may change the registration statement to make it complete and accurate.

(D) A registration statement approved by the city council shall be conclusive as to the extent and nature of the use.

10-26B-6: **LOT AREA, LOT WIDTH AND YARD REQUIREMENTS:**

(A) Not more than fifty percent (50%) of the lot area shall be occupied by buildings.

(B) The following minimum requirements shall be observed subject to the additional requirements, exceptions and modifications as set forth in this section and chapter 23 of this title.

Lot area	40,000 square feet
Lot width	150 square feet
Setback – principal structure	
Front yard	40 (60) feet
Side yard	20 (40) feet
Side yard (street)	40 (40) feet
Rear yard	20 (20) feet
Setback – accessory structure	
Front yard	40 (60) feet
Side yard	10 (20) feet
Side yard (street)	40 (40) feet
Rear yard	20 (20) feet
Setback – parking	
Front yard	20 (20) feet
Front yard abutting TH 13 or its frontage road	25 (25) feet
Side yard	5 (20) feet
Side yard (street)	15 (20) feet
Rear yard	5 (20) feet

Setbacks in parentheses apply adjacent to R-1, R-1A and R-2 districts. A twenty (20) foot setback is required for any structure or parking adjacent to any other residential district.

[11-18-02 Ord 862]; [7-6-04 Amd. Sec. 5 Ord. 932]; [12-20-04 Amd. Secs. 1 & 3 Ord 955]; [12-4-06 Amd. Sec. 2 Ord 1056]; [8-19-08 Amd. Secs. 1,2,3,4,5,6, Ord 1132]; [6-2-09 Amd. Sec. 2 Ord 1166]; [4-6-2010 Amd. Secs. 2, 3, 4, 6, Ord. 1196]

CHAPTER 27

PLANNED UNIT DEVELOPMENT (PUD)

SECTION:

10-27-1: Authorization
10-27-2: Allowed Uses
10-27-3: Required Standards
10-27-4: Coordination With Subdivision Regulations
10-27-5: Revisions And/Or Changes
10-27-6: Phasing and Guarantee Of Performance
10-27-7: Control Of Planned Unit Development Following Completion
10-27-8: Procedure For Processing A Planned Unit Development

10-27-1: **AUTHORIZATION:** PUD authorization may allow:

(A) **Variety:** Within a comprehensive site design concept a mixture of land uses, housing types and densities.

(B) **Sensitivity:** Through the departure from the strict application of required setbacks, yard areas, lot sizes, minimum house sizes, minimum requirements, and other performance standards associated with traditional zoning, planned unit development can maximize the development potential of land while remaining sensitive to its unique and valuable natural characteristics.

(C) **Efficiency:** The consolidation of areas for recreation and reductions in street lengths and other utility related expenses.

(D) **Density Transfer:** The project density may be clustered, basing density on number of units per acre versus specific lot dimensions.

(E) **District Integration:** The combination of uses which are allowed in separate zoning districts, such as:

1. Mixed residential allows both densities and unit types to be varied within the project.

2. Mixed residential with increased density acknowledging the greater sensitivity of PUD projects, regulation provides increased density on the property if a PUD is utilized.

3. Mixed land uses with the integration of compatible land uses within the project.

10-27-2: **ALLOWED USES:** Uses within the PUD may include only those uses generally considered associated with the general land use category shown for the area on the official Comprehensive Plan. Specific allowed uses and performance standards for each PUD shall be delineated in an ordinance and development stage PUD. The development stage PUD shall identify all the proposed land uses and those uses shall become permitted uses with the acceptance of the plan. Any change in list of uses presented in the development stage PUD will be considered an amendment to the PUD and will follow the procedures specified in section 10-5-6 of this title.

10-27-3: **REQUIRED STANDARDS:** The city shall consider the proposed PUD from the point of view of all standards and purposes of the Comprehensive Plan to achieve a maximum coordination between the proposed development and the surrounding uses, the conservation of woodland, the use of pervious paving/paver systems to increase infiltration and reduce storm water runoff and the protection of health, safety and welfare of the community and residents of the PUD. To these ends, the city council shall consider the location of the buildings, compatibility, installation of fiber optics to the premises, parking areas and other features with respect to the topography of the area and existing natural features such as streams and large trees; the efficiency, adequacy and safety of the proposed layout of internal streets and driveways; the adequacy and location of green areas including plant diversity of no more than 25% of any single variety of plantings; the adequacy, location and screening of parking areas; and such other matters as the council may find to have a material bearing upon the stated standards and objectives of the Comprehensive Plan.

10-27-4: **COORDINATION WITH SUBDIVISION REGULATIONS:** Subdivision review pursuant to title 11 of this code may be carried out simultaneously with the review of the development stage PUD. A plat shall be submitted if required by title 11 of this code, or if required as a condition of concept stage PUD approval, or as otherwise directed by the city council. The plans required under this chapter shall be submitted in a form which will satisfy the requirements of the subdivision ordinance for preliminary and final plat.

10-27-5: **REVISIONS AND/OR CHANGES:**

(A) Minor changes such as the location, placement and height of structures may be authorized by the development review committee (DRC) if required by engineering or other circumstances not foreseen at the time the development stage PUD was approved.

(B) Changes in uses, any rearrangement of lots, blocks and building tracts, changes in the provision of common open spaces, and all other changes to the approved development stage PUD may be made only after a public hearing conducted by the city council. Any changes shall be recorded as amendments to the recorded development stage PUD.

(C) All of the provisions of this title applicable to the original underlying zoning district within which the PUD zoning district is established shall apply to the PUD zoning district except as otherwise provided in approval of the development stage PUD.

(D) Review: If substantial development has not occurred within a reasonable time after approval of the PUD zoning district, the city council may instruct the planning commission to initiate rezoning to the original zoning district. It shall not be necessary for the city council to find that the rezoning was in error.

10-27-6: **PHASING AND GUARANTEE OF PERFORMANCE:**

(A) The planning commission shall compare the actual development accomplished in the various PUD zones with the approved development schedule.

(B) Upon recommendation of the planning commission and for good cause shown by the property owner, the city council may extend the limits of the development schedule.

(C) The construction and provision of all of the common open space and public and recreational facilities shown on the development stage PUD must proceed at the same rate as the construction of dwelling units, if any. The planning department shall review all of the building permits issued for the PUD and examine the construction which has taken place on the site. If the rate of construction of dwelling units is greater than the rate at which common open spaces and public and recreational facilities have been constructed and provided, the planning department shall forward this information to the city council for possible action.

10-27-7: **CONTROL OF PUD FOLLOWING COMPLETION:**

(A) The use of the land and the construction, modification or alteration of any buildings or structures within the PUD shall be governed by the approved development stage PUD.

(B) After the certificate of occupancy has been issued, no changes shall be made in the approved development stage PUD except upon application as provided below:

1. Any minor extensions, alterations or modifications of existing buildings or structures may be authorized by the DRC if they are consistent with the purposes and intent of the development stage PUD. No change authorized by this section may increase the cube of any building or structure by more than ten percent (10%).

2. Any building or structure that is totally or substantially destroyed may be reconstructed only in compliance with the development stage PUD unless an amendment to the development stage PUD is approved under section 10-5-6.

3. Any other changes in the development stage PUD including changes in the use of common open space must be authorized by an amendment of the development stage PUD under section 10-5-6.

10-27-8: **PROCEDURE FOR PROCESSING A PUD:**

(A) **Application Conference:** Prior to filing an application for PUD, the applicant should contact the planning department to arrange for and attend a conference with the DRC. The primary purpose of the conference is to provide the applicant with an opportunity to gather information and obtain guidance as to the general suitability of the proposal for the area for which the PUD is contemplated and its conformity to the provisions of this title before incurring substantial expense in the preparation of plans, surveys and other data.

(B) **Concept Stage PUD:**

1. Purpose: The concept stage PUD provides an opportunity for the applicant to submit a plan to the city showing his basic intent and the general nature of the entire development without incurring substantial cost. The plan shall include the following:

a. Overall maximum PUD density range.

b. General location of major streets and pedestrian ways.

c. General location and extent of public and common open space.

d. General location of residential and nonresidential land uses with approximate type and intensities of development.

e. Staging and time schedule of development.

f. Other special criteria for development.

2. Schedule:

a. The applicant should meet with a planner to discuss the proposed development.

b. The applicant shall file the concept stage PUD application together with all supporting data.

c. The application shall be processed pursuant to section 10-5-6 of this title.

d. The city may request additional information from the applicant or retain expert testimony at the expense of the applicant concerning operational factors.

3. Development Stage PUD: Following concept stage PUD approval, the applicant shall submit the development stage PUD application and may also submit preliminary and final plat. The application shall be processed in accordance with section 10-5-6 of this title. If appropriate due to the limited scale of the proposal, the concept stage PUD and development stage PUD may proceed simultaneously.

4. Applications: A development application and supporting materials shall be submitted to the planning department and as outlined for each stage of the PUD as follows:

Concept Stage PUD:

a. General Information:

(1) The landowner's name and address and interest in the subject property.

(2) The applicant's name and address if different from the landowner.

(3) The names and addresses of all professional consultants who have contributed to the development of the PUD plan being submitted, including attorney, land planner, engineer and surveyor.

(4) Evidence that the applicant has sufficient control over the subject property to effectuate the proposed PUD, including a statement of all legal, beneficial, tenancy and contractual interests held in or affecting the subject property and including an up-to-date certified abstract of title or registered property report, and such other evidence as the c may require to show the status of title or control of the subject property.

b. Present Status:

(1) The address and legal description of the property.

(2) The existing zoning classification and present use of the subject property and all lands within one thousand feet (1,000') of the property.

(3) A map depicting the existing development of the property and all land within one thousand feet (1,000') thereof and indicating the location of existing streets, property lines, easements, water mains and storm and sanitary sewers, with invert elevations on and within one hundred feet (100') of the property.

(4) A written statement generally describing the proposed PUD and the market which it is intended to serve and its demand showing its relationship to the city's Comprehensive Plan and how the proposed PUD is to be designed, arranged and operated in order to permit the development and use of neighboring property in accordance with the applicable regulations of the city.

(5) Site Conditions: Graphic reproductions of the existing site conditions at a scale of one inch equals one hundred feet (1" = 100'). All of the graphics should be the same scale as the final plan to allow easy cross reference. The use of overlays is recommended for clear reference.

(a) Contours; minimum two foot (2') intervals.

(b) Location, type and extent of tree cover.

(c) Slope analysis.

(d) Location and extent of water bodies, wetlands, and streams and flood plains within three hundred feet (300') of the property.

(e) Significant rock outcroppings.

(f) Existing drainage patterns.

(g) Vistas and significant views.

(h) Soil conditions as they affect development.

(6) Schematic drawing of the proposed development concept including but not limited to the general location of major circulation elements, public and common open space, residential and other land uses.

(7) A statement of the estimated total number of dwelling units proposed for the PUD and a tabulation of the proposed approximate allocations of land use expressed in acres and as a percent of the total project area, which shall include at least the following:

(a) Area devoted to residential uses by building type.

(b) Area devoted to private common open space.

(c) Area devoted to public open space.

(d) Area devoted to streets.

(e) Area devoted to, and number of, off-street parking and loading spaces and related access.

(f) Approximate area, and floor area, devoted to commercial industrial and/or office uses.

(8) When the PUD is to be constructed in stages during a period of time extending beyond a single construction season, a schedule for the development of such stages or units shall be submitted stating the approximate beginning and completion date for each such stage or unit and the proportion of the total PUD public or common open space and dwelling units to be provided or constructed during each such state and overall chronology of development to be followed from stage to stage.

(9) When public or private common open space or service facilities are proposed, a statement describing how care and maintenance of such open space or service facilities shall be provided.

(10) Schematic utility plans indicating placement of water, sanitary and storm sewers.

(11) The city may waive a submittal requirement, specific item of information or document required in this stage which it finds to be unnecessary to the consideration of the specific proposal.

(12) The city may require the submittal of any additional information or documentation which it finds necessary or appropriate to conduct a complete review of the proposed PUD.

(13) The city will consider the use of pervious paving/paver systems as a benefit to the PUD and encourages their use for parking lots, pedestrian walkways, overflow parking areas, within raised medians and islands, emergency vehicle lanes and other low traffic areas. The city may require the submittal of soils information for review by the city engineer to identify whether appropriate conditions exist for proper function of pervious paving/paver systems on site. A maintenance agreement shall be required to ensure ongoing maintenance and operation of all pervious paving/paver systems.

(C) **Development Stage PUD**: Development stage PUD submittals should depict and outline the proposed implementation of the concept stage PUD. Information from the concept stage PUD should be included for background and to provide a basis for the development stage PUD application. The development stage PUD submittals shall include but not be limited to:

1. A preliminary plat and supporting information as required by title 11 (subdivision regulations) of this code, or a condition of concept stage PUD approval or as otherwise directed by the city council.

2. The location, size, use and arrangement including height in stories and feet and total

square feet of ground area coverage and floor area of proposed buildings, including temporary sales offices, model homes, and existing buildings proposed to remain, if any.

3. Location, dimensions of all driveways, entrances, curb cuts, parking stalls, loading spaces and access aisles, and all other circulation elements including bike and pedestrian; and the total site coverage of all circulation elements.

4. Location, designation and total area of all common open space.

5. Location, designation and total area proposed to be conveyed or dedicated for public open space, including parks, playgrounds, school sites and recreational facilities.

6. Any other information that may have been required by the planning commission or city council in conjunction with the approval of the concept stage PUD.

7. An accurate legal description of the entire area within the PUD for which final development plan approval is sought.

8. A tabulation indicating the number of residential dwelling units and expected population.

9. A tabulation indicating the gross square footage, if any, of commercial and industrial floor space by type of activity (e.g. drug store, dry cleaning, supermarket).

10. Preliminary architectural "typical" plans indicating use, floor plan, elevations and exterior wall finishes of proposed buildings.

11. A detailed site plan showing the physical layout, design and purpose of all streets, easements, rights of way, utility lines and facilities, lots, block, public and common open space, general landscaping plan, structure, including model homes, temporary sales offices and all other uses.

12. Any restrictive covenants that are to be recorded with respect to property in the proposed PUD.

13. A storm water pollution prevention plan pursuant to section 10-8-8 of this title.

14. Final plat and all supporting documents as required by title 11 of this code, or as required as a condition of concept stage PUD approval, or as otherwise required by the city council.

[8-16-04 Amd Sec. 8 (B) (2) (f.) Ord. 941]; [5-15-06 Amd Sec. 3 Ord 1030]; [8-21-06 Amd Sec. 3; Sec. 8, (B) (4) (c) Add 14, Ord. 1044]; [12-6-08 Amd Sec. 3 & Sec. 8(B) Ord. 1146]; [4-6-2010, Ord. 1196]

CHAPTER 28

CONSERVANCY DISTRICT (CD)

SECTION:

10-28-1: Purpose
10-28-2: Permitted Uses
10-28-3: Conditional Uses
10-28-4: Special Provisions

10-28-1: **PURPOSE:** The purpose of this district is to provide areas within the city for the preservation of sensitive natural areas and the protection and enhancement of wildlife habitat. The Conservancy District (CD) may be applied to either public or private land where appropriate. Areas included in the Conservancy District are unsuitable for residential, commercial, industrial, and most institutional development, due to flooding, high water table, restrictive soil conditions, steep slopes, significant and valuable vegetation and/or wildlife habitat.

10-28-2: **PERMITTED USES:**

(A) Permanent open space.

(B) Public and private natural conservation and wildlife management areas.

(C) Recreational and interpretive trail systems, consistent with the Parks Master Plan excluding trails for motorcycles, snowmobiles, and other motorized recreational vehicles and equipment.

10-28-3: **CONDITIONAL USES:**

(A) Nature centers and recreational services buildings.

(B) Utility uses.

C) Picnic areas and playgrounds

(D) Expansion of existing uses which are not in conformity with district use provisions.

10-28-4: S**PECIAL PROVISIONS:**

(A) In no case shall a public or private structure occupy more than twenty percent (20%) of the land within any separate parcel of land zoned CD.

(B) If in its review of site and building for developments within the CD, the city finds that the protection of natural features warrants performance standards beyond that which would be provided by applicable setback, buffering and related standards, the city may require additional or increased development standards to protect such features. Additionally, the city may impose resource management standards to protect the natural features of the site.

[5-6-96 Amend. Sec. 2(C), 3, 4 Ord. 614]

CHAPTER 29

TOWERS AND ANTENNAS

SECTION:

10-29-1: Purpose
10-29-2: Definitions
10-29-3: Height Restrictions
10-29-4: Setbacks
10-29-5: Towers In Residential Zoned Districts
10-29-6: Lighting
10-29-7: Signs And Advertisements
10-29-8: Accessory Utility Buildings
10-29-9: Design Standards
10-29-10: Tower Collocation Requirements
10-29-11: Tower Construction Requirements
10-29-12: Antenna Collocation Requirements
10-29-13: Existing Antennas And Towers
10-29-14: Abandoned Or Unused Towers Or Portions Of Towers
10-29-15: Interference With Public Safety Communications
10-29-16: Additional Submittal Requirements
10-29-17: Exemptions
10-29-18: Violations

10-29-1: **PURPOSE:** In order to accommodate the communication needs of residents and businesses while protecting the public health, safety, and general welfare of the community, the council finds that these regulations are necessary to:

(A) Maximize the use of existing and approved towers and buildings to accommodate new personal wireless service antennas in order to reduce the number of new towers necessary to serve the community;

(B) Ensure antennas and towers are designed, located, and constructed in accordance with all applicable code requirements to avoid potential damage to adjacent properties from failure of the antenna and tower through structural standards and setback requirements;

(C) Require antennas and tower sites to be secured in order to discourage trespassing and vandalism;

(D) Require tower equipment to be screened from the view of persons located on properties contiguous to the site and/or to be camouflaged in a manner to complement existing structures to minimize adverse visual effects of antennas and towers; and

(E) Establish criteria under which wireless communication providers may utilize public utility structures within city controlled public right of way and drainage and utility easements adjacent to public right of way for collocation of antennas.

10-29-2: **DEFINITIONS:**

ANTENNA: Any structure or device used for the purpose of collecting or transmitting electromagnetic waves, including but not limited to directional antennas, such as panels, microwave dishes, and satellite dishes, and omnidirectional antennas, such as whip antennas.

FIXED WIRELESS SIGNAL: Any commercial nonbroadcast communication signals transmitted via wireless technology to and/or from a fixed customer location, which may include the following: audio, video and data communications. The definition does not include broadcast communication signals such as: AM radio, FM radio, amateur ("HAM") radio, Citizen's Band (CB) radio, and Digital Audio Radio Service (DARS) signals.

PERSONAL WIRELESS SERVICES: Commercial mobile services, unlicensed wireless services, and common carrier wireless exchange services;

PROTECTED RESIDENTIAL PROPERTY: Any property within the city that meets all of the following requirements:

A. The property is zoned R-1, R-1A, R-2, R-3A, or R-3D;

B. The property is designated on the comprehensive plan as residential, including manufactured housing park; and

C. The property is used or subdivided for use as residential.

PUBLIC UTILITY: Persons, corporations, or governments supplying gas, electric, transportation, water, sewer, or land line telephone service to the general public. For the purpose of this ordinance, personal wireless services shall not be considered public utility uses, and are defined separately.

TOWER: Any ground or roof mounted pole, spire, structure, or combination thereof taller than fifteen feet (15'), including supporting lines, cables, wires, braces, and masts, intended primarily for the purpose of mounting an antenna, meteorological device, or similar apparatus above grade.

TOWER, MULTI-USER: A tower which is designed to accommodate the antennas of more than one personal wireless service provider or governmental entity.

10-29-3: **HEIGHT RESTRICTIONS:**

(A) **Height Determination:** The height of towers shall be determined by measuring the vertical distance from the tower's point of contact with the ground or rooftop to the highest point of the tower, including all antennas or other attachments. When towers are mounted upon other structures, the combined height of the structure at the tower's point of attachment and tower must meet the height restrictions of this section.

(B) **Maximum Height:** Except as provided in subsection (C) of this section, maximum heights for towers are as follows:

1. In all protected residential property, the maximum height of any tower, including all antennas and other attachments, shall be thirty feet (30'), except that no tower shall be in excess of a height equal to the distance from the base of the antenna and tower to the nearest overhead electrical power line which serves more than one dwelling or place of business, less five feet (5').

2. In residential zoned property other than protected residential property, the maximum height of any tower, including all antennas and other attachments, shall not exceed one foot (1') for each two feet (2') the tower is setback from protected residential property up to a maximum height of seventy five feet (75') for towers and antennas located on property developed for apartment buildings and one hundred fifty feet (150') in all other cases, except that no tower

shall be in excess of a height equal to the distance from the base of the antenna and tower to the nearest overhead electrical power line which serves more than one dwelling or place of business, less five feet (5').

3. In all nonresidential zoning districts, the maximum height of any tower, including all antennas and other attachments, shall not exceed one foot (1') for each two feet (2') the tower is set back from protected residential property, up to a maximum height of one hundred fifty feet (150'). The city council may allow towers up to two hundred feet (200') high if the applicant can demonstrate that based upon the topography of the site and surrounding area, siting of the antenna, antenna design, surrounding tree cover and structures and/or through the use of screening, that off-site views of the tower will be minimized. Owners of certain antenna structures more than two hundred (200') feet above ground level at the site must notify the federal aviation administration and register with the Federal Communications Commission.

(C) **Exceptions:** The following are exceptions to the maximum height restrictions for towers:

1. Multiuser Towers. Multiuser towers may exceed the height limitations of this section by up to twenty feet (20'), provided that if only the antennas of a single personal wireless service provider will be attached to the tower at the time of application, the additional twenty feet (20') will not be used but will remain vacant for use by a second personal wireless service provider.

2. Amateur Radio Antenna. In accordance with the preemption ruling PRB1 of the Federal Communications Commission, towers supporting amateur radio antennas that comply with all other requirements of this section are exempted from the height limitations of this section up to a total height of seventy feet (70'), provided that such height is technically necessary to receive and broadcast amateur radio signals.

3. Attached To Structures: Towers and other antenna devices which are attached to a structure and not freestanding may be located in residential zoned districts under the following conditions:

a. The towers and antennas are located upon existing or proposed structures allowed as principal or conditional uses in the underlying zoning district and/or upon public structures; and

b. The towers and antennas are limited to a height of fifteen feet (15') projecting above the structure. The city council may permit antenna heights of up to twenty five feet (25') above the structure if the applicant can demonstrate that, by a combination of antenna design, positioning of the structure and/or by screening erected or already in place on the structure, off-site views of the antenna are minimized to accepted levels.

4. Public Utility Structures: Public utility structures, including but not limited to water towers, antennas, lights and signals, power and telephone poles, and poles supporting emergency warning devices.

5. Wireless Antennas Attached To Public Utility Structures: Wireless antennas located on or attached to public utility structures within public right of way or in drainage and utility easements adjacent to public right of way allowed pursuant to a lease or master agreement with the city providing for review of the location, height and safety of the structure and antenna.

10-29-4: **SETBACKS:** Towers shall conform with each of the minimum setback requirements:

(A) **Principal Structure Setbacks:** Towers shall meet the principal structure setbacks of the underlying zoning district except that towers may be located five feet (5') from the rear property line, provided that the rear property line abuts industrially zoned property and the tower does not encroach upon any easements.

(B) **Protected Residential Property:** For protected residential property, the required setback for an antenna and tower not rigidly attached to a building, shall be equal to the height of the antenna and tower. Those antennas and towers rigidly attached to a building, and whose base is on the ground, may exceed this required setback by the amount equal to the distance from the point of attachment to the ground.

(C) **Public Rights Of Way And Roadway Easements:** Towers shall be set back from all public rights of way and roadway easements by a minimum distance equal to one-half (1/2) of the height of the tower including all antennas and attachments.

(D) **Location Between Principal Structure And Public Street:** Towers shall not be located between a principal structure and a public street, with the following exceptions:

1. In industrial zoning districts, towers may be placed within a side yard abutting an internal industrial street.

2. On sites adjacent to public streets on all sides, towers may be placed within a side yard abutting a local street.

(E) A tower's setback or its location in relation to a public street may be reduced through a conditional use permit, at the sole discretion of the city council provided ground equipment is screened.

(F) **Exceptions:** The following are exceptions to the setback provision for towers and antennas:

1. The setbacks in this section shall not apply to antennas co-located on existing buildings, towers or structures or public utility structures, including but not limited to water towers, antennas, light poles, signals, power and telephone poles, and poles supporting emergency warning devices that are located within public rights of way or in drainage and utility easements adjacent to public rights of way.

10-29-5: **TOWERS IN RESIDENTIAL ZONING DISTRICTS:** Towers in the residential zoning districts are subject to the following restrictions:

(A) Towers supporting amateur radio antennas and conforming to all applicable provisions of this code shall be allowed only in the rear yard of residentially zoned parcels.

(B) Towers supporting personal wireless service antennas and conforming to all applicable provisions of this code shall be allowed only in the following residentially zoned locations with a conditional use permit:

1. Church sites;

2. Park sites, when compatible with the nature of the park;

3. Sites guided under the city's comprehensive plan as commercial recreational business sites;

4. Apartment complex or development; and

5. Government, school, utility, and institutional sites.

(C) Public utility towers supporting wireless antennas and conforming to all provisions of this code allowed pursuant to a lease or master agreement with the city shall be permitted in public right of way and in drainage and utility easements adjacent to public right of way.

(D) Only one tower shall exist at any one time on any one residential parcel, unless additional towers or antennas could be incorporated into existing structures such as a church steeple, light pole, power line support device, or similar structure. This provision shall not apply to public utility towers supporting wireless antennas and conforming to all provisions of this code located in public rights of way and within drainage and utility easements adjacent to public rights of way that are allowed pursuant to a lease or master agreement with the city.

10-29-6: **LIGHTING:** Towers shall not be illuminated by artificial means and shall not display strobe lights unless such lighting is specifically required by the Federal Aviation Administration or other federal or state authority for a particular tower. When incorporated into the approved design of the tower for camouflage purposes, light fixtures used to illuminate ball fields, parking lots, or similar areas may be attached to the tower.

10-29-7: **SIGNS AND ADVERTISING:** No signage, advertising, or identification of any kind intended to be visible from the ground or other structures is permitted, except applicable warning and equipment information signage required by the manufacturer or by federal, state, or local authorities.

10-29-8: **ACCESSORY UTILITY BUILDINGS:** All utility buildings and structures accessory to a tower shall be architecturally designed to blend in with the surrounding environment and shall meet the minimum setback requirements for accessory structures of the underlying zoning district. Ground mounted equipment shall be screened from view by suitable vegetation, except where a design of non-vegetative screening better reflects and complements the architectural character of the surrounding neighborhood. The setback provision shall not apply to public utility towers supporting wireless antennas and conforming to all provisions of this code that are located in public rights of way or in drainage and utility easements adjacent to public rights of way that are allowed pursuant to a lease or master agreement with the city.

10-29-9: **DESIGN STANDARDS:** Proposed or modified towers and antennas shall meet the following requirements:

(A) Towers and antennas (including antenna cables) shall be designed to blend into the surrounding environment to the maximum extent possible as determined by the city through the use of building materials, colors, texture, screening, landscaping, and other camouflaging architectural treatment, except in instances where the color is dictated by federal or state authorities such as the federal aviation administration;

(B) Personal wireless service towers shall be of a monopole design unless the city council determines that an alternative design would better blend in to the surrounding environment. This provision shall not apply to public utility towers supporting wireless antennas and conforming to all provisions of this code that are located in public right of way or in drainage and utility easements adjacent to public right of way that are allowed pursuant to a lease or master agreement with the city.

10-29-10: **TOWER CO-LOCATION REQUIREMENT:** All personal wireless service towers erected, constructed, or located within the city shall comply with the following requirements:

(A) A proposal for a new personal wireless service tower shall not be approved unless the city council finds that the telecommunications equipment planned for the proposed tower cannot be accommodated on an existing or approved tower or building, that is greater than seventy five feet (75') in height, within a one-quarter (1/4) mile search radius for towers less than one hundred twenty feet (120') in height or a one-half (1/2) mile search radius for towers equal to or greater than one hundred twenty feet (120') in height of the proposed tower due to one or more of the following reasons:

1. The planned equipment would exceed the structural capacity of the existing or approved tower or building as documented by a qualified and licensed professional engineer, and the existing or approved tower cannot be reinforced, modified, or replaced to accommodate planned or equivalent equipment at a reasonable cost.

2. Existing or approved towers and buildings within the search radius cannot accommodate the planned equipment at a height necessary to function reasonably as documented by a qualified radio frequency engineer.

3. Other unforeseen reasons that make it infeasible to locate the planned telecommunications equipment upon an existing or approved tower or building.

(B) The applicant must demonstrate that a good faith effort to collocate antennas on existing towers and structures was made, but an agreement could not be reached.

(C) Proposed personal wireless service towers shall be designed, structurally, electrically, and in all respects, to accommodate both the applicant's antennas and comparable antennas for at least two (2) additional users if the tower is over one hundred feet (100') in height or for at least one additional user if the tower is over seventy five feet (75') in height. Towers must be designed to allow for future rearrangement of antennas upon the tower and to accept antennas mounted at varying heights.

10-29-11: **TOWER CONSTRUCTION REQUIREMENTS:** All towers erected, constructed, or located within the city, and all wiring therefore, shall comply with the following requirements:

(A) **Building Permit:** It shall be unlawful for any person, firm, or corporation to erect, construct, place or re-erect, replace, or make structural repairs to any tower without first making application for and securing a building permit as provided in title 4, of this code, except as provided in subsection (C) of this section.

(B) **Professional Engineer's Report:** The applicant shall provide a report from a qualified and licensed professional engineer which demonstrates the tower's compliance with all applicable structural and electrical, but not radio frequency, standards, including, but not limited to, the Minnesota state building code, and includes the engineer's certification.

(C) **Exceptions:** Building Permits are not required for:

1. Adjustment, repair, or replacement of existing antennas or the elements of an antenna array affixed to a tower or antenna; provided, that adjustments or replacement does not reduce the safety factor.

2. Routine maintenance (e.g., painting) and other nonstructural related repairs of towers.

3. Antennas and/or towers erected temporarily for test purposes, for emergency communication, or for broadcast remote pick up operations, provided that all requirements of subsection (E) of this section are met, with the exception of subsection (E)8 of this section (regarding corrosive material) which is waived. Temporary antennas shall be removed within seventy two (72) hours following installation, unless additional time is approved by the chief building official. Temporary towers erected for emergency purposes may be exempt from setback requirements of this chapter as determined by the chief building official.

4. Public utility structures supporting wireless antennas and conforming to all provisions of this code that are located within public right of way allowed pursuant to a lease or master agreement with the city providing for review of the location, height and safety of the structure and antenna.

(D) **Fee:** The fee to be paid is that prescribed under building permit fees, section 4-1-3 of this code.

(E) **Construction Requirements:** All antennas and towers erected, constructed, or located within the city, including all necessary wiring, shall comply with the following requirements:

1. Applicable Provisions: All applicable provisions of this code.

2. Certification: Towers and their antennas shall be certified by a qualified and licensed professional engineer to conform with the latest structural standards and wind loading requirements of the 2006 international building code, the Electronics Industry Association, the requirements of the Federal Aviation Administration, Federal Communications Commission and all other applicable reviewing agencies or that the tower is exempt from those regulations.

3. Extension Over Public Right Of Way Prohibited: With the exception of necessary electric and telephone service and connection lines approved by the city and public utility towers supporting wireless antennas and conforming to all provisions of this code and allowed pursuant to a lease or master agreement with the city, no part of any antenna or tower, nor any lines, cable, equipment, or wires or braces in connection with either shall at any time extend across or over any part of the right of way, public street, highway, sidewalk, or property line.

4. Electrical Engineering Methods And Practices: Towers and their antennas shall be designed to conform with accepted electrical engineering methods and practices and to comply with the provisions of the national electric code.

5. Occupational Safety And Health Administration Requirement: All towers shall be constructed to conform with the requirement of the occupational safety and health administration.

6. Protection: All towers shall be reasonably protected against unauthorized climbing.

7. Zoning Restrictions: Antennas and towers may only be erected in accordance with applicable zoning restrictions.

8. Corrosive Resistant Metal Material: Towers shall be constructed of corrosive resistant metal material.

9. Insurance: Persons responsible for all communication towers and their antennas shall maintain a general liability insurance policy that provides coverage from any damage to property or injuries to persons caused by collapse of the tower. Said insurance policy shall provide coverage on an occurrence basis in an amount no less than one million dollars ($1,000,000.00).

10. Inspections: All towers may be inspected at least once each year by an official of the building and inspection services division to determine compliance with original construction standards. Deviations from original design for which a permit is obtained constitutes a violation of this chapter.

a. Notice of violations shall be sent by registered mail to the owner of the property and the owner shall have thirty (30) days from the date the notification is issued to make repairs. The owner shall notify the building and inspection division that the repairs have been made, and as soon as possible thereafter, another inspection shall be made and the owner notified of the results.

10-29-12: **ANTENNA CO-LOCATION REQUIREMENTS:**

(A) **Requirements:** The placement of personal wireless service antennas on roofs, walls, and existing towers may be approved by the city, with a building permit. In addition to the submittal requirements required elsewhere in this code, an application for a building permit for antennas to be mounted on an existing structure shall be accompanied by the following information.

1. A site plan showing the location of the proposed antennas on the structure and documenting that the request meets the requirements of this code;

2. A building plan showing the construction of the antennas and the proposed method of attaching them to the existing structure, and documenting that the request meets the requirements of this code;

3. Certification by a qualified and licensed professional engineer indicating the existing structure or tower's ability to support the antennas.

(B) **Exceptions:** No building permit shall be required for:

1. Personal wireless service antennas located on or attached to public utility structures within public right of way and allowed pursuant to a lease or master agreement with the city that provides for review of the location, height and safety of the structure and antenna. The requirements of title 8, chapters 13, “Telecommunications Permit Requirements” and 14, “Right Of Way”, of this code shall be met.

2. Antennas that meet the exemptions under subsection 10-29-17(A) of this chapter.

10-29-13: **EXISTING ANTENNAS AND TOWERS:** Antennas and towers in existence as of the effective date of this ordinance which do not conform or comply with this chapter are subject to the following provisions:

(A) Towers may continue in use for the purpose used and existing as of the effective date of this ordinance, but may not be replaced or structurally altered without complying in all respects with this chapter.

(B) If such towers are subsequently damaged or destroyed due to any reason or cause whatsoever, the tower may be repaired and restored to its former use, location, and physical dimensions upon obtaining a building permit for the repair or restoration, but without otherwise complying with this chapter, provided, however, that if the cost of repairing the tower to the former use, physical dimensions, and location would be fifty percent (50%) or more of the cost of a new tower of like kind and quality, then the tower may not be repaired or restored except in full compliance with this chapter.

10-29-14: **ABANDONED OR UNUSED TOWERS OR PORTIONS OF TOWERS:** All abandoned or unused towers and associated facilities shall be removed within twelve (12) months of the cessation of operations at the site unless a time extension is approved by the city. In the event that a tower is not removed within twelve (12) months of the cessation of operations at a site, the tower and associated facilities may be removed by the city and the costs of removal assessed against the property. After the facilities are removed, the site shall be restored to its original or an improved state.

10-29-15: **INTERFERENCE WITH PUBLIC SAFETY TELECOMMUNICATIONS:** No new or existing telecommunications service shall interfere with public safety telecommunications.

10-29-16: **ADDITIONAL SUBMITTAL REQUIREMENTS:**

(A) In addition to the information required elsewhere in this title, an application for a building permit or conditional use permit for towers and antennas shall include the following supplemental information:

1. A report from a qualified and licensed professional engineer which does the following:

a. Describes the tower height and design including a cross section and elevation;

b. Documents the height above grade for all potential mounting positions for co-located antennas and the minimum separation distances between antennas;

c. Describes the tower's capacity, including the number and type of antennas that it can accommodate; and

2. A letter of intent committing the tower owner and his or her successors to allow the shared use of the tower if an additional user agrees in writing to meet reasonable terms and conditions for shared use, so long as there is no negative structural impact upon the tower and there is no disruption to the service provided.

10-29-17: **EXEMPTIONS:**

(A) **Exempt:** The following antennas are exempt from the requirements under this chapter except as otherwise provided in subsection (B) of this section:

1. Satellite earth station antennas that are two meters (2 m) or less in diameter and located or proposed to be located in a business or industrial district;

2. Except as otherwise provided under subsection (A)3 of this section, antennas designed to receive signals as follows, provided the mast supporting the antennas does not extend more than fifteen (15') feet above the roofline of the building:

a. Antennas that are one meter (1 m) or less in diameter and that are designed to receive direct broadcast satellite service, including direct to home satellite services; or to receive or transmit fixed wireless signals via satellite;

b. Antennas that are one meter (1 m) or less in diameter and that are designed to receive video programming services via multipoint distribution services, including multichannel multipoint distribution services, instructional television fixed services, and local multipoint distribution services; or to receive or transmit fixed wireless signals other than via satellite; or

c. Antennas designed to receive television broadcast signals.

3. The exception provided for antennas designed to receive or transmit fixed wireless signals under subsection (A)2 of this section applies to "customer end antennas", which are antennas placed at a customer location for the purpose of providing service to customers at that location, but does not apply to hub or relay antennas, which are antennas used to transmit signals to and/or receive signals from multiple customer locations.

(B) **Requirements:** Antennas exempted under subsection (A)2 of this section are subject to the following requirements:

1. Antennas (including antenna cables) shall be designed to blend into the surrounding environment through the use of appropriate colors, except in instances where the color is dictated by federal or state authorities such as the federal aviation administration;

2. No lighting, signage, advertising, or identification of any kind intended to be visible from the ground or other structures is permitted, except applicable warning and equipment information signage required by the manufacturer or by federal, state, or local authorities;

3. Antennas and any guy wires or guy wire anchors shall not be erected within a public or private utility and drainage easements, and shall be set back a minimum of five feet (5') from all lot lines. This provision shall not apply to public utility towers supporting wireless antennas and conforming to all provisions of this code that are located in public right of way or in drainage and utility easements adjacent to public right of way that are allowed pursuant to a lease or master agreement with the city;

4. Antennas shall meet the setback requirements specified under this chapter and, to the extent feasible, placed in a position that is not visible from the street, unless placement in accordance with these requirements would impair reception of an acceptable signal;

5. Antennas shall meet the height limitations in this chapter, unless the applicable height limitation would impair reception of an acceptable signal; in which case, antennas shall be limited to the maximum height necessary to obtain an acceptable signal;

6. Antennas shall not be constructed, installed, or maintained so as to create a safety hazard or cause damage to the property of other persons;

7. With the exception of necessary electric and telephone service and connection lines approved by the city, and public utility towers supporting wireless antennas and conforming to all provisions of this code that are located in public rights of way or drainage and utility easements adjacent to public rights of way allowed pursuant to a lease or master agreement with the city, no part of any antenna nor any lines, cable, equipment, or wires or braces in connection with the antenna shall at any time extend across or over any part of the right of way, public street, highway, sidewalk, or property line;

8. Antennas, masts, and supporting cables shall conform with the latest structural standards and wind loading requirements of the uniform building code and the Electronics Industry Association and any other applicable reviewing agencies.

(C) **Residential District Standards:** Satellite earth station antennas in excess of one meter (1 m) in diameter and antennas designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) in diameter may be allowed as a conditional use within the residential zoning districts of the city and, in addition to the requirements of this chapter, shall comply with the following standards:

1. The lot on which the antenna is located shall be of sufficient size to assure that an obstruction free receive window can be maintained within the limits of the property ownership;

2. Except where the antenna is screened by a structure exceeding the antenna height, landscape buffering and screening shall be maintained on all sides of the antenna in a manner in which growth of the landscape elements will not interfere with the receive window;

3. The antenna is not greater than three meters (3 m) in diameter; and

4. The conditional use permit provisions of this chapter are considered and determined to be satisfied.

(D) **Business District Standards:** Satellite earth station antennas in excess of two meters (2 m) in diameter and antennas designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) in diameter are allowed as a conditional use within the B-1, B-2, B-3, and B-4 districts of the city and, in addition to the requirements of this chapter, shall comply with the following standards:

1. The lot on which the antenna is located shall be of sufficient size to assure that an obstruction free transmit-receive window or windows can be maintained within the limits of the property ownership;

2. Except where the antenna is screened by a structure exceeding the antenna height, landscape buffering and screening shall be maintained on all sides of the antenna in a manner in which growth of the landscape elements will not interfere with the transmit-receive window; and

3. The conditional use permit provisions of this title are considered and determined to be satisfied.

(E) **Industrial District Standards:** Satellite earth station antennas in excess of two meters (2 m) in diameter and antennas designed to receive direct broadcast services or multichannel multipoint distribution services in excess of one meter (1 m) in diameter may be allowed as a conditional use within the I-1, I-2, I-3, GIM and GIH districts of the city and, in addition to the requirements of this chapter, shall comply with the following standards:

1. The lot on which the antenna is located shall be of sufficient size to assure that an obstruction free transmit-receive window or windows can be maintained within the limits of the property ownership;

2. Except where the antenna is screened by a structure exceeding the antenna height, landscape buffering and screening shall be maintained on all sides of the antenna in a manner in which growth of the landscape elements will not interfere with the transmit-receive window; and

3. The conditional use permit provisions of this title are considered and determined to be satisfied.

10-29-18: **VIOLATIONS:** Any person who shall violate any of the provisions of this chapter shall be guilty of a misdemeanor.

[7-7-97 Amd. Ord. 674]; [11-18-02 Amd. 17 (E) Ord 864]; [8-6-07 Amd. Ord. 1088]; [1-22-08 Amd. Secs.2, 3(B)(3), 17(A), 12(B) Ord 1106]

CHAPTER 30

SIGNS

SECTION:

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10-30-1: **PURPOSE:** Signs have an impact on the character and quality of the environment as a prominent part of the scenery; they attract or repel the viewing public and affect the safety of vehicular traffic. Their suitability or appropriateness helps to set the tone of the neighborhood. The purpose of this section shall be to regulate the placement, erection and maintenance of signs in the city so as to promote the health, safety, aesthetics, economic welfare and general welfare of the community. The following standards in this chapter are, therefore, adopted to regulate signs.

10-30-2: **DEFINITIONS:** For purposes of this chapter, the following words and terms are defined as follows:

ADDRESS SIGN: A sign communicating street address only, whether script or in numerical form.

ALTER: Refers to any major change to a sign, but shall not include routine maintenance or painting.

ANIMATED SIGN: *Any sign that uses technology of any type to create movement or to depict action or create a special effect or scene, including devices with or without a commercial message, such as spinners and windsocks, but not including barber poles and time and temperature signs and changeable copy signs. A sign on which the message changes more frequently than one (1) time for every sixty (60) second interval shall be considered an animated sign.* ***(Interim Ord. expires 8-1-2010)***

AREA IDENTIFICATION SIGN: A freestanding sign which identifies the name of a residential subdivision consisting of fifty (50) or more lots; a multiple residential complex consisting of twenty (20) or more units or three (3) or more structures; an office, business or industrial structure containing three (3) or more independent businesses or organizations; a single business and/or industrial complex consisting of three (3) or more separate structures existing on individual platted lots or as a planned unit development; a mobile home court; or any integrated combination of the above.

AWNING: A temporary hood or cover that projects from the wall of a building, and which can be retracted, folded or collapsed against the face of the supporting building.

BALLOON: A flexible, nonferrous inflated bag in various shapes and colors.

BANNER: Flexible material affixed to a building, vehicle, poles, or other supporting structures by all corners.

BANNERETTE: Flexible material that resembles a flag, and has minimum dimensions of two feet by two feet (2' x 2') and no larger than three feet by five feet (3' x 5'). A smaller sized bannerette is defined as a pennant.

BEACON: Any light with one (1) or more beams directed into the atmosphere or directed at one (1) or more points not on the same lot as the light source; also, any light with one (1) or more beams that rotate or move.

BILLBOARD: See off-premise advertising sign.

BUILDING FACADE: That portion of any exterior elevation of a building extending from grade to the top of the parapet wall or eaves and the entire width of the building elevation.

BUSINESS SIGN: Any sign which identifies a business.

CABINET SIGN: A sign that has framing around the entire sign message with a removable face.

CAMPAIGN SIGN: A temporary sign promoting the candidacy of a person running for a government office, or promoting an issue to be voted on at a governmental election.

CANOPY SIGN: The area of copy, graphic or identification which is affixed to a projection or extension of a building or structure, including a marquee, erected in such a manner as to provide a shelter or cover over the approach to any entrance of a store, building or place of assembly. The portion of the canopy, projection or other architectural feature which contains no copy or graphic identification, shall not be defined as signage, but if illuminated shall be included in the total sign area pursuant to subsection 10-30-3(P) of this chapter.

CHANGEABLE COPY SIGN: *A sign or portion thereof with characters, letters, or illustrations that can be changed or rearranged without altering the face or the surface of the sign. Signs or portions thereof shall not change in content, color, illumination or intensity more frequently than one (1) time for every sixty (60) second interval. A sign on which the only copy that changes is an electronic or mechanical indication of time or temperature shall be considered a "time and temperature" portion of a sign and not a changeable copy sign for purposes of this chapter.* ***(Interim Ord. expires 8-1-2010)***

COMMERCIAL MESSAGE: Any sign wording, logo, or other representation that, directly or indirectly, names, advertises, or calls attention to a business, product, service, or other commercial activity.

COMMUNITY EVENT SIGN: A temporary off premise sign promoting an event sponsored by a school district, athletic association, or the city.

CONDO FOR SALE BANNER: A banner placed on a building (principal structure or garage) advertising that particular property for sale. The banner message or wording has no restrictions, other than to advertise the property it is located on.

CONSTRUCTION SIGN: A non-illuminated sign placed at a construction site identifying the project or the name of the architect, engineer, contractor, financier and other involved parties, or announcing the character of the building enterprise or the purpose for which the building is intended.

DEVELOPMENT PROJECT SIGN: A sign placed at a development site for the purpose of selling or promoting the project.

DIRECTORY SIGN: An exterior informational sign which identifies the names and/or addresses of businesses or tenants within a multi-tenant building.

EMPLOYMENT SIGNS: A temporary sign to announce employment opportunities in business and industrial zoning districts as well as each public and institutional conditional use in residential districts.

FLAG: A piece of cloth or bunting varying in color and design, used as a symbol, standard, emblem or insignia identifying a governmental agency or any civic, charitable, religious, institutional, patriotic, corporate, fraternal or similar organization.

FREESTANDING SIGN: Any sign supported by structures or supports that are permanently anchored in the ground and that are independent from any building or structure.

GOVERNMENTAL SIGN: A sign which is erected by a governmental unit or transit authority with the permission of the city, for identification or traffic.

GROUND SIGN: A freestanding sign under eight feet (8') in height erected on one or more freestanding shafts, posts, or piers which are solidly affixed to the ground and not attached to a building. A ground sign shall be considered one sign though it may have two (2) faces.

HOLIDAY SIGN: A sign or display that contains or depicts a message pertaining to a national, state, local, or religious holiday.

ILLUMINATED SIGN: Any sign which is lighted by an artificial light source either external (light source not within sign) or internal (light source within sign), or by means of reflective materials. Illuminated architectural features or portions thereof which contain no copy or graphics shall not be defined as an illuminated sign, but shall be included in the total sign area pursuant to subsection 10-30-3(P) of this chapter.

INFLATABLE DEVICES: Any three dimensional object supported or filled by forced air, helium or other gas.

INFORMATION SIGN: Any sign, including on premise directional signs, menu boards, and public information service signs, giving information to employees, visitors or delivery vehicles, but containing no advertising or identification.

INTEGRAL SIGN: A sign carrying the name of a building, its date of erection, incidental information about its construction, monumental citations, commemorative tablets and the like when carved into stone, concrete or similar material or made of bronze, aluminum or other permanent type of construction and made an integral part of the structure.

LOGO SIGNS: Any brand name, trademark, logo, distinctive symbol, or other similar device or thing used to identify a particular business, institution, or activity.

MAXIMUM HEIGHT: The vertical distance measured from the highest adjacent grade, within one foot (1') of the base of the sign, to the top of a sign.

MINIMUM HEIGHT: The vertical distance measured from the highest adjacent grade, within one foot (1') of the base of the sign, to the bottom of such sign.

MONUMENT SIGN: A freestanding sign that is intended to be incorporated into some form of landscaping design scheme or planter box, is attached to the ground by means of a freestanding support structure, is solid from grade to the top of the structure, has materials that are constructed of the same primary building materials of the principal structure, is placed directly on the ground or on an interior planter base which is incorporated into a design arrangement. A monument sign shall be considered as one sign though it may have two (2) faces.

MULTI-FACED SIGN: Any sign with a sign face oriented to more than two (2) directions.

NAME PLATE SIGN: Any sign in a residential district which states the name and/or address of a business or occupant of the lot where the sign is placed.

NEW BUSINESS BANNER: Banners stating "Now Open" or "Grand Opening" not exceeding fifty (50) square feet in total area. New business banners may only be used within the first three (3) months of the commencement of operation of the business advertised.

NON-COMMERCIAL SPEECH: Messages concerning political, religious, social, ideological, public service and informational topics.

OFF-PREMISES ADVERTISING SIGN: A billboard, poster panel, painted bulletin board or other communicative device which is used to advertise products, goods, services, ideas or noncommercial speech which are not exclusively related to the premises or owner of the property on which the sign is located.

OFF-PREMISES DIRECTIONAL SIGN: A directional sign located upon property other than the lot of a development or use for which off-site direction is intended.

ON PREMISES DIRECTIONAL SIGN: A sign erected on private property which contains no advertising, and is specifically intended to facilitate the safe movement of pedestrians and vehicles into, out of and circulating upon the site on which such signs are located.

OPAQUE: Impervious to the passage of light.

PARAPET: A low protective wall which is located along the edge of a roof on a building.

PENNANTS: Flexible material, whether or not containing a message of any kind, suspended from a rope, wire, or string, usually triangular shaped and in a series, designed to move in the wind.

PORTABLE SIGN: Any sign not permanently attached to the ground or other permanent structure, or a sign designed to be transported, including, but not limited to, signs designed to be transported by means of wheels; signs converted to A- or T-frames; menu and sandwich board signs; umbrellas used for advertising; and signs attached to or painted on vehicles parked and visible from the public right-of-way, unless said vehicle is used in the normal day to day operations of the business.

PRINCIPAL BUILDING: A building or buildings in which is conducted the principal use of the lot, not including storage buildings, garages, and buildings for other clearly accessory uses.

PROJECTING SIGN: A sign other than a wall sign which is perpendicular to and projects from a building, is supported by a wall of a building or structure, where the leading edge extends more than 12 inches (12”) beyond the surface of such wall.

PUBLIC INFORMATION SERVICE SIGN: A sign designating the current time and/or temperature and/or stock market data on the exterior of a building or pylon so as to be viewed by the passing public from a public right of way.

PYLON SIGN: A free-standing sign erected on one or more freestanding shafts, posts, or piers which are solidly affixed to the ground and not attached to a building. A pylon sign shall be considered as one sign though it may have two (2) faces.

REAL ESTATE SIGN: A sign placed upon a property advertising that particular property for sale, for rent or for lease. A real estate sign shall be considered as one sign though it may have two (2) faces.

RIBBONS OR STREAMERS: Long or varied lengths of flexible material used to decorate.

ROOF SIGN: Any sign which is erected, constructed or attached wholly or in part upon any roof or over the highest roof line of a building.

ROOFLINE: The top of the coping; or, when the building has a pitched roof, as the intersection of the outside wall with the roof as illustrated below.

RUMMAGE SALE SIGN: Signs advertising infrequent temporary display and sale by an occupant on his premises of personal property, including general household rummage, used clothing and appliances.

SANDWICH BOARD SIGN: Two (2) sided self-supporting temporary signs which may be no more than three feet (3’) in width and four feet (4’) in height. Sandwich board signs are allowed only during business hours and must be removed on a daily basis.

SECURITY SIGN: A sign identifying the presence of a security system.

SERVICE ENTRANCE: Secondary passage or opening to a structure which is intended for delivery and removal of merchandise or goods, and which is not intended as a public entrance.

SIGN: Any written announcement, declaration, demonstration, display, illustration, insignia or illumination used to advertise or promote the interest of any person or persons when the same is displayed or placed out of doors in view of the general public, or inside of a building within three feet (3') of a transparent window. A sign shall be considered as a structure or a part of a structure for the purpose of applying yard and height regulations except as herein provided.

SIGN AREA: That area that includes the smallest rectangle around each line of copy for individually mounted letter signs and the entire face of a sign, including the advertising surface and any framing, trim, or molding but not including the supporting structure for all other signs. The maximum sign area is the maximum allowable gross surface area in square feet of a sign or signs. The maximum number of signs cannot be arranged and integrated so as to create a cumulative gross sign area in excess of such requirements as may be applicable.

SIGN CRITERIA: A comprehensive signage plan for a multi-tenant building to be established by the owner or owner's association (as in the case of a condominium) and the city, which shall include the following components: height, location, size, number, type, basic decorative theme, design, decor and material of signs to be placed on the buildings.

SIGN SETBACK: The distance from the property line and curb to the nearest part of the sign, measured perpendicularly to the property line or curb.

SIGN STRUCTURE: The supports, uprights, bracing and framework for a sign.

SPECIAL EVENTS: A temporary indoor or outdoor promotional or sales event.

STREET FRONTAGE: The side of a lot abutting one or more streets. An interior lot has one street frontage and a corner lot has two (2) or more frontages.

TEMPORARY INDOOR PROMOTIONAL OR SALES EVENT: A temporary promotional or sales event directed towards the general public including only grand openings, storewide sales, craft shows, registration for day care, an educational, recreational, civic or religious activity, and community celebrations.

TEMPORARY OUTDOOR PROMOTIONAL OR SALES EVENT: A temporary promotional or Special event sale directed towards the general public, including only grand opening sales, storewide sales of materials and products that are typically sold or serviced on the premises, registration for day care, an educational, recreational, civic or religious activity, community celebrations, warehouse sales, tent sales, sidewalk sales, craft shows, flea markets, inventory reduction and liquidation sales, and mechanical or animal rides.

TEMPORARY SIGN: Any sign which is erected or displayed for a specific period of time, and not of a permanent nature.

VEHICLE SALES SIGN: A sign painted or applied to the window of a vehicle.

WALL GRAPHICS: A sign which is painted directly on an exterior wall surface.

WALL SIGN: A sign which is affixed to the exterior wall of a building and which is parallel to the building wall. A wall sign does not project more than twelve inches (l2") from the surface to which it is attached, nor extend beyond the top of the parapet wall. Banners do not qualify as a wall sign.

WINDOW SIGN: A temporary sign affixed to the outside or inside of a window or inside the building within three feet (3’) of a window in view of the general public. This does not include merchandise on display. Window signage shall not include business and logo signs.

10-30-3: **GENERAL PROVISIONS:**

(A) No sign permitted by this title shall, by reason of its location, color or intensity, create a hazard to the safe, efficient movement of vehicular or pedestrian traffic. No private sign shall contain words which might be construed as traffic controls, such as "Stop", "Caution", "Warning", etc., unless such sign is needed to direct traffic on the premises.

(B) All signs and sign structures shall be properly maintained in a safe, orderly condition at all times, including the replacement of defective parts, cleaning and other items required for maintenance of the sign. Vegetation around, in front of, behind, and underneath the base of ground signs for a distance of ten feet (10’) shall be neatly trimmed and free of weeds, and no rubbish or debris that would constitute a fire or health hazard shall be permitted under or near the sign.

(C) All signs shall be constructed in accordance with the Minnesota state building code and the national electrical code. The maximum brightness shall not exceed 100 foot lamperts. *(A unit of brightness equal to 1/π candle per square centimeter.)*

(D) No sign shall be erected, placed or maintained on, fences, trees, power and light poles or the supports thereof, except as allowed as special events. Signs on rocks shall be allowed if they use metal letters and numbers or the commercial message is etched into the surface of the rock.

(E) All signs utilizing electricity shall be subject to the state's electrical code and electrical service wiring shall be buried or concealed.

(F) No signs other than governmental signs shall be erected or temporarily placed within any street rights of way or upon any public lands or easements or rights of way, except by conditional use permit.

(G) No sign or sign structure shall be erected or maintained if it prevents free ingress or egress from any door, window or fire escape. No sign or sign structure shall be attached to a standpipe or fire escape.

(H) Window signs shall not cover more than thirty five percent (35%) of the window area on each elevation of a building. Holiday signs placed in windows shall be included in the thirty five percent (35%) window area. All window signs shall be placed on the inside surface of the glass, except for temporary painting applied directly to the glass surface. ***(Interim Ord. expires 8-1-2010)***

(I) A minimum of one address sign identifying the correct property number as assigned by the city shall be required on each principal building in all districts. Such sign shall be of sufficient size to be legible from the nearest street yet shall not exceed nine (9) square feet in area. The numbers shall be metal, glass, plastic or durable material and the numbers shall not be less than four inches (4") in height, in a contrasting color to the base or made of some reflective material and so placed to be easily seen from the street.

(J) No seasonal/holiday decoration shall be allowed on or within the right of way.

(K) Commercial message of the sign shall be neat and orderly and not obscene. The signs shall be professionally prepared.

(L) Signs in all B-1 and B-2 districts may only be illuminated during business hours, or until eleven o'clock (11:00) p.m., whichever is later.

(M) Signs with external lighting shall have no exposed light sources or fixtures unless decorative fixtures are utilized and the light source is fully concealed and diffused. If a wall sign is mounted above the first floor of a building, the illumination, if any, shall be internal.

(N) No more than three (3) flags may be displayed outside of a building. This number may, however, be increased to a total of six (6) flags provided a permit is issued and the following standards are met:

1. No two (2) pairs of flags may be the same.

2. Where multiple flag poles are used, there shall be a maximum spacing of twenty feet (20') allowed between the poles.

(O) The maximum angle permitted between faces of a double face freestanding sign is sixty degrees (60°), anything less is one sign, anything more is two (2) signs.

(P) Illuminated architectural features or portions thereof, not defined as signage or a canopy sign, shall be applied at the rate of one-third (1/3) the architectural feature area toward the maximum allowable sign area permitted under sign table A in subsection 10-30-15(A) of this chapter. Illuminated architectural features shall include, but not be limited to, wall, roof and window mounted neon, the wall surface between multiple rows of neon, illuminated sign bands, backlit canopies, awnings or wall banding features, etc.

10-30-4: ALLOWABLE AND PROHIBITED SIGNS IN ANY ZONING DISTRICT:

(A) **Allowable Signs**: The following signs are allowed without a permit unless otherwise specified. These signs, if placed in accordance with the following standards, will not apply toward the maximum allowable sign area, but shall comply with all other applicable provisions of this title:

1. Governmental Signs: Signs of a public, noncommercial nature including safety signs, danger signs, trespassing signs, traffic signs, public transit signs, signs indicating scenic or historical points of interest, memorial plaques and the like, when these signs are erected by or on order of a public officer or employee in the performance of official duty.

2. On Premise Directional Signs: Shall not exceed four (4) square feet in area.

3. Integral Signs: Shall not exceed nine (9) square feet in area.

4. Campaign Signs: Shall not be placed upon public right of way or property. Campaign signs erected on private property should be erected with permission of the property owner or lessee. Those installing campaign signs shall comply with the fair campaign practices act contained in state of Minnesota statutes chapter 211B.

5. Holiday Signs: Shall not be displayed for over sixty (60) days. Holiday signs placed in windows shall be included in the thirty five percent (35%) maximum window coverage as provided under section 10-30-3(H) of this chapter. ***(Interim Ord. expires 8-1-2010)***

6. Security Signs: Shall not exceed one (1) square foot with one sign per driveway connection to a public right of way.

7. Real Estate Signs:

a. Property for sale signs shall be wall or freestanding signs and shall be removed within ten (10) days after the closing on a property.

(1) Such signs shall be professionally designed and painted on all sides, including support posts. Freestanding signs shall be properly anchored into the ground using posts with minimum dimensions of four inches (4”) square or three inches (3”) in diameter.

(2) Such signs shall be limited to one per street frontage of the property.

(3) The content of the commercial message on these signs shall include an offer of the property for sale, the realty company name, the phone number, and other information related to the sale

(4) Such signs shall not measure more than twelve (12) square feet in R-1, R-1A, R-2, and R-3D districts, and shall not measure more than forty (40) square feet in all other districts. The forty (40) square feet limitation may be increased to sixty four (64) square feet, provided a permit is issued and the following standards are met:

(a) The sign shall be a maximum height of twelve feet (12').

(b) The sign shall be set back from the front property line no less than one foot (1') per one foot (1') of sign height.

(c) The sign shall be non-illuminated.

b. Temporary property for lease signs shall be wall or freestanding signs.

(1) The gross area and total height of a temporary property for lease signs shall be limited to the maximums prescribed in sign table C in subsection 10-30-15(C) of this chapter, except that the real estate sign area for a building that contains a minimum of fifty thousand (50,000) square feet of aboveground leasable area may be increased to thirty two (32) square feet regardless of the adjoining street classification and speed limit, provided that the building is located in a B or I district.

(2) Temporary property for lease signs shall be set back from the front property line no less than one foot (1') per one foot (1') of sign height, except that if the sign cannot be located to comply with the minimum setback requirement from the front property line without locating the sign in a parking lot or other paved surface, the sign may be located up to the front property line provided that the sign does not exceed sixteen (16) square feet in area and four feet (4') in width, and further provided that the sign will not disrupt any public utility service and interfere with the sight line visibility of motorists on the adjoining roadway.

(3) The content of the commercial message on such signs shall include an offer of the property for lease, the management company or owner's name, the phone number, and other information related to the lease.

(4) Such signs shall be limited to one per street frontage of the property, and if ground mounted, shall at a minimum meet the following requirements:

(a) Signs shall be constructed of painted, smooth-finish plywood, and if ground mounted, shall have either flush or side mounted, four inch by four inch (4" x 4"), painted wood posts.

(b) Sign faces up to thirty two (32) square feet in area shall be constructed of one sheet of material, and larger sign faces shall not be constructed of more than two (2) sheets.

(c) Flush mounted signs shall include a four inch (4") wide painted border on the sign faces in a color to match the sign posts and contrast with the background of the sign face. The sign face area shall include the border.

(d) Side mounted signs shall include decorative post tops and four inch (4”) wide painted top and bottom supports in a color to match the sign posts and contrast with the background of the sign faces. The sign face area shall not include the posts and supports.

(e) Skirting and landscaping in addition to sod shall be optional for ground mounted signs, and all such landscaping shall be maintained to the standard prescribed in subsection 10-30-3(B) of this chapter.

c. For new buildings in B and I zoning districts on Interstate 35 west and east, Highway 13, Cliff Road, and County Road 42, a wall mounted leasing banner may be installed during construction and the first six (6) months following the issuance of a certificate of occupancy. The banner may be displayed up to an additional six (6) months if the building is less than fifty percent (50%) occupied at six (6) months past the date of occupancy for a maximum of one year, including any time the banner is displayed during construction. Such banners shall be constructed with top and bottom ropes seamed into the banner and securely attached to the building, and shall comply with the following requirements:

(1) Minimum twelve (12) ounce weight vinyl material.

(2) Minimum two hundred forty (240) pounds per square yard of tensile strength

(3) Minimum one hundred ten (110) pounds per square yard of tear strength.

Such banners may be illuminated. The maximum size of such banners shall not exceed two (2) times the area limits in sign table C in subsection 10-30-15(C) of this chapter.

d. All nonconforming real estate signs shall be brought into conformance with these requirements by July 1, 1999.

8. Construction Signs: Shall be confined to the site of the construction, alteration or repair, and single tenant building signs shall be removed within thirty (30) days, and multi-tenant buildings shall be removed within sixty (60) days after the particular project or building under continuous construction is issued the first certificate of occupancy. Signs shall be allowed on each major street frontage the project abuts. Signs shall be professionally designed and painted on all sides, including support posts. No sign may exceed forty eight (48) square feet.

9. Development Project Signs: Shall be allowed in all zoning districts by permit. For the purpose of selling or promoting a development project of three (3) to twenty five (25) acres, one sign not to exceed one hundred (100) square feet of advertising surface may be erected on the project site. For projects of twenty six (26) through fifty (50) acres, one or two (2) signs not to exceed two hundred (200) aggregate square feet of advertising surface may be erected. For projects over fifty one (51) acres, one, two (2) or three (3) signs not to exceed three hundred (300) aggregate square feet of advertising surface may be erected. No dimension shall exceed twenty five feet (25') exclusive of supporting structures. Such sign shall not remain after ninety five percent (95%) of the project is developed. If such signs are lighted, they shall be illuminated only during those hours when business is in operation or when the model homes or other development are open for conducting business. The sign shall be set back from all property lines

no less than one foot (1’) per one foot (1’) of sign height. Signs shall be professionally designed and painted on all sides, including support posts.

10. Rummage Sale Signs: On site and off premise signs shall not exceed four (4) square feet and shall be removed at the termination of the sale.

11. Informational Signs: Shall not exceed six (6) square feet.

12. Vehicle Sales Signs: Shall be limited to vehicles on display in approved open sales lots. The letter height shall not exceed twelve inches (12”).

13. Barber Pole Signs.

14. Time and Temperature Signs.

15. Public Transit Signage: Signage to identify public transit locations, as regulated in title 8 of this code. For the purposes of this chapter, such signage shall not be considered to be off premises advertising signage.

16. Sandwich Board Signs: Sandwich board signs are two (2) sided temporary signs which are allowed by annual permit only. Sandwich board signs may be no more than three feet (3’) in width and four feet (4’) in height and must be located within twenty feet (20’) of the main entrance to the business they advertise. Sandwich board signs must be placed upon private property, leaving a minimum of four feet (4’) of clearance for pedestrian access. Sandwich board signs may not be placed upon the public sidewalk. Sandwich board signs may be used only during business hours and must be removed daily.

17. New Business Banner: Banners stating “Now Open” or “Grand Opening” may be used for one thirty (30) day period. New business banners are allowed with a permit for which there shall be no charge. New business banners may not exceed fifty (50) square feet in total area and may include the business name or logo. New business banners shall be placed upon a building wall. New business banners may be used within the first three (3) months of the commencement of operation of the business advertised.

18. Community Event Signs: Community event signs shall be permitted subject to the following standards and conditions:

a. Signs shall be sandwich board or freestanding signs and may be erected up to ten (10) days prior to the event and shall be removed within twenty four (24) hours after the conclusion of the event.

b. Signs shall be professionally designed and painted on all sides, including any support posts.

c. Signs placed on private property shall be erected with permission of the property owner or lessee.

d. Signs may be placed in city rights of way excluding state and county rights of way; however, signs shall be set back from the back of all curbs by no less than two feet (2’) per one foot (1') of sign height.

e. Signs shall be limited to one per street intersection and shall not interfere with traffic visibility or pedestrian ways.

f. Signs shall include the community event information and shall include the name and phone number for the organization sponsoring the event.

g. Sign area shall be limited to twelve (12) square feet.

h. Signs shall be anchored to the ground.

i. Signs shall not be illuminated.

j. Signs shall not be attached to any tree or permanent structure including, but not limited to light or power poles, utility infrastructure, or buildings.

(B) **Prohibited Signs**: The following signs are prohibited in all zoning districts:

1. Any sign which obstructs or impairs the vision of drivers or pedestrians or detracts from the visibility of any official traffic control device.

2. Any sign which contains or imitates an official traffic sign or signal, except for private, on-premise directional signs.

3. Off-premise advertising and directional signs except as permitted in sections 10-30-7, 10-30-9 and 10-30-10 of this chapter.

4. Business signs on or attached to equipment, such as semitruck trailers, being used in such a manner that advertising is a principal use of the equipment.

5. Animated signs.

6. Projecting signs.

7. Roof signs.

8. Any sign which contains or consists of banners, bannerettes, pennants, ribbons, streamers, strings of light bulbs, balloons and hot or cold air inflatable devices, spinners or similar outdoor advertising devices, except as may be approved by a special event permit in accordance with the provisions as set forth in subsection 10-30-5 and subsection 10-30-7(H) of this chapter.

9. Wall graphics.

10. Beacons.

11. Multifaced signs.

12. Signs supported by guywires.

13. Cabinet signs on buildings, except for logo signs.

14. Portable signs, except for sandwich board signs and community event signs, as allowed by permit.

10-30-5: **SPECIAL EVENTS:**

(A) **Permit Required**. No special event shall be held without first obtaining a permit.

(B) **Types of Special Events**. The following events shall be the only allowed special events:

1. Temporary indoor promotional or sales events.

2. Temporary outdoor promotional or sales events.

(C) **Number Of Events**: The businesses in all business and industrial zoning districts as well as each public and institutional conditional use in residential districts shall be allowed six (6) temporary indoor or outdoor promotional or sales event special events per calendar year. Each special event shall not exceed ten (10) days and shall not be extended for more than three (3) consecutive time periods for each business. Once the time period has expired for the special event the business shall wait the same number of days that the permit was issued to start a new special event.

(D) **Permitted Advertising Devices**: Advertising devices for special events must be directly related to the activity being conducted as a special event. The advertising devices described below are permitted for special events in addition to the maximum allowable sign area, provided they are professionally done and the following standards are met and complied with:

1. Small Balloons:

a. The size of small balloons or a group of connected balloons shall not exceed two feet (2’) as the largest dimension, except that balloon arches extending across streets and private driveways shall not exceed twenty feet (20’) in height. Balloon arches over streets require the street to be closed.

b. Small balloons may be multicolored and incorporate logos and messages.

c. Helium balloons shall be regularly maintained and refilled.

2. Tents:

a. Tents, including all ties, ropes, stakes, etc., shall be located entirely upon the permittee's property and shall comply with the city's setback requirements for accessory buildings.

3. Bannerettes:

a. Bannerettes may be used on light standards or flag poles.

b. No more than one bannerette shall be allowed per standard or pole.

c. Bannerettes shall be smaller than any U.S. flag on the property, and shall not be flown at a height greater than any U.S. flag allowed on the property.

4. Banners:

a. Banners may be attached to poles, tents, and buildings, provided they are well secured and are prevented from being blown around uncontrollably by the wind.

b. No more than two (2) banners shall be allowed.

c. Banners shall not be larger than one hundred (100) square feet nor higher than the wall of the principal building on the lot.

d. All banners shall be maintained such that they do not become ripped, torn, defaced, damaged, loose, or unsecured.

5. Inflatable Devices:

a. The size of inflatable devices shall not exceed twenty four feet (24’) as the largest dimension.

b. Inflatable devices may be multicolored and incorporate logos and messages.

c. Helium inflatable devices shall be refilled daily.

d. Inflatable devices must be anchored or tethered and must be kept in a weather tight and presentable condition.

e. Inflatable devices may be located on rooftops, in green space, or in parking lot areas.

f. Inflatable devices shall be allowed for one event per business per calendar year and shall not exceed ten (10) days in duration.

6. Searchlights: Searchlights may be allowed by permit as a temporary use, provided such use shall not exceed a duration of three (3) consecutive days and no more than fifteen (15) days in one calendar year.

7. Off Premises Advertising or Directional Signs: Off premises advertising or directional signs shall be permitted subject to the following standards and conditions:

a. Signs shall be sandwich board or freestanding signs only. Subject to the special event permit, signs may be erected only to coincide with the days of the event and shall be removed within twenty four (24) hours after the conclusion of the event.

b. Signs shall be professionally designed and painted on all sides, including any support posts.

c. Signs placed on private property shall be erected with permission of the property owner or lessee.

d. Signs may be placed in city rights of way excluding state and county; rights of way; however, signs shall be set back from the back of all curbs by no less than two feet (2’) per one foot (1') of sign height. Signs shall be limited to one per street intersection and shall not interfere with traffic visibility or pedestrian ways.

e. Signs shall not be located more than one mile from the site of the event and no more than twelve (12) signs per event are permitted.

f. Signs shall include the special event information and shall include the name and phone number for the business/organization sponsoring the event.

g. Sign area shall be limited to twelve (12) square feet.

h. Signs shall be anchored to the ground.

i. Signs shall not be illuminated.

j. Signs shall not be attached to any tree or permanent structure including, but not limited to light or power poles, utility infrastructure, or buildings.

8. Off Premises Signs For Community Events: Off premises signs for community events and festivals shall be allowed as permitted in subsection 10-30-4(A)18 of this chapter.

(E) **Prohibited Advertising Devices For Special Events**: The advertising devices or activities described below are prohibited for special events:

1. Animated signs, beacons, light bulb strings, pennants, portable signs, ribbons, and streamers.

2. Displays or special features on any landscaped areas or on roofs.

3. Aerial rides.

4. Large balloons or collections of small balloons exceeding two feet (2') in diameter**,** except for balloon arches not exceeding twenty feet (20') in height.

5. Additional lighting that does not meet city code.

6. Any advertising device in the public right of way.

7. Hot air inflatable devices.

(F) **Permit Requirements For Special Event Lot Decorations:** Before any special event signs or decorations shall be permitted to be used for an event, the responsible lot owner or organization shall submit a completed application for a permit with the city. In addition to other requirements, the applicant shall show that when the event is held, adequate parking area will continue to exist, even though a portion of required parking spaces may be used to celebrate the event. Only after the city issues the permit, may a business display the special event signs and decorations.

(G) **Violations:**

1. It is a violation for any person, company or organization to provide, erect, fail to remove or display any beacons, balloons or other advertising device which is not in conformity with the provisions of this section.

2. It is a violation for any person, company or organization to display special event signs and decorations not removed by the last day of the special event.

10-30-6: **SIGNS ALLOWED BY PERMIT:** Signs will be allowed by permit in R-1, R-1A, R-2, R-3A, R-3B, R-3C, R-3D districts.

(A) **Nameplate Signs**: Any nameplate signs over two (2) square feet shall be set back at least ten feet (10') from any property line. No sign shall exceed twelve (12) square feet in area or ten feet (10') in height above the average grade level. Signs may be illuminated, but such lighting shall be diffused or indirect and not illuminate beyond any lot line.

(B) **Ground or Monument Signs**: Ground or monument signs shall be allowed for the purpose of permanent identification of residential areas. Signs shall be set back a minimum of five feet (5') from all property lines. At each principal entrance to such an area, a maximum of two (2) signs, not to exceed twenty (20) square feet per sign (of actual sign area exclusive of walls or supports),

shall be allowed. Larger signs may be allowed as part of a planned unit development or conditional use permit.

(C) **Freestanding And Wall Signs**: Freestanding and walls signs shall be allowed for conditional uses and subject to the following requirements:

1. The cumulative total wall sign area, when added to the gross sign area of all freestanding signs on the site, except for wall and freestanding signs that do not count toward the maximum allowable sign area pursuant to subsection 10-30-4(A) of this chapter, shall not exceed the maximum allowable sign area set forth in sign table A in subsection 10-30-15(A) of this chapter.

2. The gross area and total height of a freestanding sign shall be limited by the formula and regulations set forth in sign table B in subsection 10-30-15(B) of this chapter.

3. Freestanding signs up to six feet (6') in height shall be located no closer than five feet (5') from a street right of way.

4. Freestanding signs over six feet (6') in height shall be located no closer than twenty feet (20') from the front street right of way. In the case of a corner lot, all sides fronting on a public right of way shall be deemed the front.

5. No part of a freestanding sign, except for an on premise directional sign, shall be located closer than five feet (5') from any driveway or parking space.

6. All or portions of the permitted freestanding sign area may be comprised of changeable copy signage. Color, illumination or intensity shall not change more frequently than one (1) time for every sixty (60) second interval. No scrolling, flashing, or continuous movement shall be permitted. ***(Interim Ord. expires 8-1-2010)***

(D) **Leasing Banners**: Banners may be placed on a multi-family building (principal structure or garage) advertising that particular property for lease or rent as permitted in section 3-28-14, "Rental Licensing STAR Program And Benefits" of this code. Leasing banners may be displayed as follows:

1. A sign permit is required from the building inspection department for each month or portion thereof that the sign is displayed. The fee for each permit is set forth in the city's fee schedule.

2. Leasing banners may be displayed May 1 through October 31. The banner message or wording must be an advertisement for the property upon which it is located.

3. No more than one banner up to one hundred fifty (150) square feet in size shall be allowed for each multi-family rental property up to one hundred fifty (150) square feet displayed on one side of one building, except that if the property is a corner lot, then one banner up to one hundred (100) square feet may be displayed on each of two (2) sides of the building.

4. Banners shall not be placed above the roofline of the building.

5. Banners shall not be placed on poles or other devices or located on the ground.

6. Banners must be maintained such that they do not become ripped, torn, defaced, loose or unsecured.

7. All banners must be removed by October 31.

10-30-7: **WALL SIGNS ALLOWED BY PERMIT.** Wall signs will be allowed by permit in B-1, B-2, B-3, B-4, I-1, I-2, I-3, GIM, GIH districts.

(A) The maximum number of wall signs on any principal building shall be two (2), and in all cases, each sign shall be placed on a separate building facade, with or without street frontage except as allowed in subsection (G) of this section.

(B) The maximum number of wall signs allowed may be increased over two (2) by conditional use permit for single occupancy buildings provided the following minimum standards are met:

1. There shall be no freestanding sign exceeding six feet (6') in height upon the lot.

2. The wall signs shall consist of individual letters.

3. The wall signs shall be identical in style, wording, color and size.

(C) The cumulative total wall sign area, when added to gross sign area of all freestanding signs on the site, except for wall and freestanding signs that do not count toward the maximum allowable sign area pursuant to subsection 10-30-4(A) of this chapter, shall not exceed the maximum allowable sign area under sign table A in section 10-30-15 of this chapter.

(D) Wall signs shall be constructed as individual mounted letter signs, and may be mounted on exposed raceways that are painted to match the sign band area. No cabinet signs are allowed except for logo signs and descriptive tag lines that are subordinate to the main business name, constructed in a cabinet form with a maximum height of eight inches (8”); and except as architecturally integrated into the building design and approved through a conditional use permit.

(E) Wall signs shall be constructed with a maintenance free/permanent finish material. Wall signs shall not be painted.

(F) When a building faces two (2) or more streets, calculation of the maximum allowable sign area shall be based upon the front building facade and the smallest building facade facing a street frontage. Signs may also be placed on the side of a building not facing a street. No building side may have signage in excess of the signage allowed for that side of the building based upon the maximum allowable sign area of that building facade.

(G) For multiple occupancy buildings, each occupant shall have no more than one business sign, except that the end tenants may have a maximum of two (2) signs each to be located on the front and side elevations of the tenant space. The building owner shall prescribe a comprehensive sign criteria distributing the proposed signs to the occupants. The comprehensive sign criteria shall be subject to review and approval by the city.

(H) Temporary business signs made of cloth or cloth-like material are allowed as a wall sign for temporary businesses located within a structure and for interim use until permanent signs are installed, subject to the following requirements:

1. Permits shall be limited in duration to no more than three (3) months.

2. Temporary wall signs shall be securely attached to the building in such a manner that no portion of the sign will be allowed to blow around freely in the wind.

3. Where a sign criteria has been prescribed for multiple occupancy buildings, the temporary wall sign shall be sized to fit within the specified sign band area.

4. There shall be no additional sign lighting allowed in addition to that which has been approved for the building.

(I) A sign that is above the highest roofline of a building but on a parapet wall that does not extend all the way around the building shall be architecturally integrated into the building design. This type of sign shall not be considered a roof sign.

(J) The maximum size for any one wall sign shall be three hundred (300) square feet.

(K) Changeable copy signs shall not be allowed as a wall sign, except as may be approved by a conditional use permit. ***(Interim Ord. expires 8-1-2010)***

(L) **Transient Merchant Signage:** Signage for transient merchants as defined and regulated in title 3 of this code, shall be limited to one (1) thirty-two (32) square foot temporary sign.

(M) Temporary/Seasonal Outdoor Sales Uses shall be subject to the requirements of section 10-19-2-1(H)6 of this title.

10-30-8: **FREESTANDING SIGNS ALLOWED BY PERMIT:** Freestanding signs will be allowed by permit in B-1, B-2, B-3, B-4, I-1, I-2, I-3, GIM, GIH districts.

(A) Monument signs up to six feet (6') in height shall be located no closer than five feet (5') from a street right of way.

(B) Freestanding signs over six feet (6') in height shall be located no closer than twenty feet (20') from the front street right of way; however, the freestanding sign front setback limitation of twenty feet (20') may be decreased where a corresponding decrease in the sign height occurs. The formula for determining the height and setback variation shall be established at or below a diagonal plane beginning at the point twenty feet (20') back from the front property line and rising to the corresponding height limitation set forth in sign table B of subsection 10-30-15(B) of this chapter. From that point, the plane descends to a second point five feet (5') back from the front property line at a height of six feet (6'). In the case of a corner lot, all sides fronting on a public right of way shall be deemed the front.

(C) Freestanding signs except for an on-premise directional sign, shall be located no closer than five feet (5') from any driveway or parking space.

(D) Pylon signs shall be located no closer than fifteen feet (15') to the front property line.

(E) The minimum pylon sign height clearance to the bottom of the sign, including the cross bracing, framing or sign enclosure shall be eight feet (8').

(F) A maximum of one freestanding sign is allowed upon any single lot. Additional freestanding signs may be allowed provided they are in compliance with the following standards:

1. The signs are constructed as a monument sign and shall not exceed a height of six feet (6').

2. Decorative shrubbery and flowers must be incorporated as a part of the monument design and are maintained on a regular basis.

3. The signs, if illuminated, may be either internally or externally lighted in accordance with these regulations.

4. The gross area of the signs, when added together with all other freestanding and wall sign areas, does not exceed the maximum allowable sign area established for the lot.

5. Monument signs may incorporate additional berming on a slope of three to one (3:1) where the berming is incorporated into an overall landscaping design plan. Landscaping shall be provided on the slopes of the berm in an interesting and varied appearance. Where a planter box is incorporated, the landscaping shall occur in and around the planter with a similar attractive design. In both cases, the height of the sign, including the planter box shall not exceed six (6) feet.

6. Signs allowed pursuant to subsection 10-30-4(A) of this chapter.

(G) The gross area and total height of a freestanding sign shall be limited to the maximums prescribed in sign table B of subsection 10-30-15(B) of this chapter. The maximum size and height of each sign shall be determined by the classification of the street towards which the sign is oriented, provided that the property on which the sign is to be located either fronts on the street or is part of a planned unit development that fronts on the street.

(H) In the case of a multiple-occupancy building, which is a center for industrial, commercial or retail purposes on properties over ten (10) acres, a freestanding sign larger than that provided for in sign table B in subsection 10-30-15(B) of this chapter may be approved by conditional use permit.

(I) For monument signs, the copy and graphic area shall not exceed the maximum square feet permitted under sign table B in subsection 10-30-15(B) of this chapter.

(J) The cumulative gross sign area of all freestanding signs, except as provided for in section 10-30-4 of this chapter, when added to the total wall sign area, shall not exceed the maximum allowable sign area under sign table A in subsection 10-30-15(A) of this chapter.

(K) In all B districts and approved retail businesses in I districts, changeable copy signs may be incorporated as part of a freestanding sign. Changeable copy sign approvals will be granted only upon the elimination of all existing illegal temporary signage. Changeable copy signs may not exceed the brightness or illumination set forth in subsection 10-30-3(C) of this chapter. The following criteria will be applied when reviewing changeable copy sign applications:

1. The signs shall be attached to the pylon sign beneath the business name or incorporated into an alternative freestanding sign proposal. The design of the sign shall complement other existing signage on the site.

2. The background color shall complement other existing signage on the site.

3. The size of the sign shall not exceed twenty five percent (25%) of the gross sign area when added to an existing pylon sign. This percentage limitation does not apply to totally new signage.

4. The gross area of a freestanding sign under sign table B in subsection 10-30-15(B) of this chapter and the maximum allowable sign areas specified in columns a and c under sign table A in

subsection 10-30-15(A) of this chapter may be increased by twenty four (24) square feet to accommodate a changeable copy sign.

5. The lower portion of the changeable copy sign shall meet the eight foot (8') minimum height clearance requirement. If the bottom of a changeable copy sign is proposed at a height below eight foot (8'), the message board shall be enclosed with a vandal proof encasement and shall be designed as a ground sign.

6. Changeable copy signs shall not be allowed as a wall sign, except as may be approved by a conditional use permit.

7. Color, illumination or intensity shall not change more frequently than one (1) time for every sixty (60) second interval. No scrolling, flashing, or continuous movement shall be permitted.

8. Changeable copy signs may not operate at brightness levels that exceed five-tenths (0.5) foot-candle measured on the property line when adjoining residential zones and one (1.0) foot-candle measured on the property line when such line adjoins a similar zone and land use.

9. Each changeable copy sign must have a light sensing device that will adjust the brightness of the display as the natural ambient light conditions change. ***(Interim Ord. expires 8-1-2010)***

(L) Where there is a grade difference of more than four feet (4') between the proposed location of a freestanding sign and the higher grade of the street frontage towards which the sign is oriented, the sign height base elevation may be established at the center line of the street, provided that the property on which the sign is to be located either fronts on the street or is part of a planned unit development that fronts on the street.

10-30-9: **BILLBOARDS:**

(A) Billboards are permitted only in I-1 and I-2 districts and only where the adjacent streets are intermediate arterial or interstate freeway roadways, as shown in the Burnsville Comprehensive Plan.

(B) A conditional use permit shall be required for approval of a billboard pursuant to section 10-5-5 of this title.

(C) Upon obtaining a conditional use permit for a billboard, the company or person obtaining the permit shall file with the city a letter of credit in the minimum amount of ten thousand dollars ($l0,000.00) to guarantee compliance with the terms and conditions of the permit. The ten thousand dollars ($10,000.00) shall cover one through five (5) signs.

(D) The maximum sign size shall be seven hundred fifty (750) square feet. Billboards may incorporate cut outs protruding beyond the framed perimeter of the sign face providing the total sign area not exceed seven hundred fifty (750) square feet.

(E) The maximum sign height to the uppermost portion shall be forty five feet (45'). The building setback limitation for the zoning district in which the sign is located shall apply to principle structure setbacks for billboards.

(F) The minimum radius distance between billboards shall be two thousand feet (2,000').

(G) No billboard shall be constructed within two thousand feet (2,000') of the city's corporate limits.

(H) No billboard shall be constructed within one hundred fifty feet (150') of the point of tangency of the entrance or exit ramp on any intermediate arterial or interstate freeway or within one hundred fifty feet (150') of the intersection of the nearest right-of-way lines of any other class of street. The point of tangency shall be measured from the point where the off ramp meets the adjacent traffic lane. No billboard shall be constructed between ramps of an interchange.

(I) Billboards shall be a single support, metal structure free of any supports or guywires. The metal shall be either painted or treated in such a manner as to prevent deterioration.

(J) Billboards shall have a maximum of two (2) faces.

(K) Billboard signs or portions thereof shall not change in content, color, illumination or intensity more frequently than eight (8) times per day. No scrolling, flashing, or continuous movement is permitted. ***(Interim Ord. expires 8-1-2010)***

(L) All electrical wiring shall be underground and concealed.

(M) The lot on which a billboard is located shall be improved by landscaping and must be maintained in an acceptable manner.

(N) Billboards are a principal use of property. Notwithstanding subsection 10-7-3(B) of this title, a billboard shall not be erected on the same lot with a building, and billboards shall be removed from a lot before any other building or structure is erected on the lot.

(O) In B-3 districts, a billboard or off-premise advertising sign may be proposed as a second principal use of a lot only pursuant to a planned unit development plan which is consistent with the Comprehensive Plan, meets the requirements of this title, and is approved by the city council in compliance with the following additional standards:

1. The billboard or sign must be a pre-existing, nonconforming use.

2. The owner of the billboard or sign must hold an ownership interest or easement in the underlying real estate where the billboard or sign is located.

3. The billboard or sign must be located adjacent to a minor arterial or principal arterial roadway.

(P) Existing legal nonconforming billboards are subject to the general requirements of section 10-30-13, for “Non-Conforming Signs”, of this chapter.

10-30-10: **OFF-PREMISES DIRECTIONAL SIGNS:** No person shall install or cause to be installed an off premise directional sign, except as follows:

(A) The development review committee, as defined under section 10-5-2 of this title, may authorize the city to install off premise directional signs in the public right of way, provided such signs comply with the following standards:

1. The sign shall be installed solely for the purpose of traffic direction and control, and not as an advertising medium.

2. The sign may include a street name and a street classification, such as a frontage road designation, but shall not include the name, logo, or trademark of a business, development, or institution.

3. The sign shall direct traffic to a particular street or to the collective businesses on said street when access to the businesses is unreasonably indirect or circuitous.

4. The sign shall be green with white lettering in a size approved by the development review committee. Factors to be considered by the committee when determining the appropriate sign size shall include the sign's location, purpose, amount of lettering, and proximity to other existing signs, and the posted speed limit of the street along which the sign is to be installed.

5. The development review committee may authorize temporary directional signs for any business areas that have access to any public street that is under construction or reconstruction, or is being repaired. The signs shall redirect traffic to alternate access streets, shall comply with the provisions of this section except that the signs shall be orange with black lettering and may include the names of affected businesses, and shall be removed upon completion of the street construction, reconstruction, or repairs.

6. In order to direct tourism traffic to Burnsville hotels and motels, the development review committee may authorize the city to install off-premise directional lodging signs in the public right of way.[1] The signs shall be blue with white lettering, shall include only the word "lodging" and a directional arrow, and shall be placed to direct traffic from a principle arterial level street to a hotel or motel. Wherever practicable, such signs shall be located on existing sign poles.

(B) The development review committee may authorize the installation of off premise directional signs, either in the public right of way or on public property, for government buildings, public parks, hospitals, and emergency care facilities. Such signs shall not exceed ten (10) square feet in area and, if located on public property, shall comply with the setback requirements of section 10-30-8 of this chapter. Such signs may include only the name, logo, and address of the building, park, hospital, or facility and other directional information necessary to direct traffic to the building, park, hospital, or facility.

(C) The development review committee may authorize the installation of off premise directional signs on private property for religious facilities located on streets that are not classified in the comprehensive plan as collectors, principal or minor arterials. Such signs shall not exceed ten (10) square feet in area and shall comply with the setback requirements of section 10-30-8 of this chapter. Such signs may include only the name, logo, and address of the facility and other directional information necessary to direct traffic to the facility.

(D) The development review committee (DRC) may authorize the installation of signs in public parks subject to section 10-12B-2 of this title. ***(Interim Ord. expires 8-1-2010)***

(E) In a multiple lot planned unit development (PUD) that includes shared driveways and parking areas among the lots, a sign directing traffic from one lot of the PUD to a business on another lot in the same PUD shall not be considered to be an off premise directional sign. Each such sign shall not exceed ten (10) square feet in area, shall be included in the total allowable sign area for the building to which the traffic is being directed, and shall be compatible with the other signs in the PUD.

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[1] No other tourism related directional signs are allowed because printed directional information on area retail, restaurant, and service establishments is readily available at hotels and motels.

(F) For the purpose of providing off premises direction to a new residential development, the developer may obtain sign permits to erect non-illuminated off premise directional signs as follows:

1. Each development shall be allowed two (2) such signs per entrance to the development up to a maximum of four (4) such signs.

2. Each sign shall not exceed thirty two (32) square feet in area and six feet (6') in height.

3. Each sign shall be erected on private property and shall be set back at least five feet (5') from all lot lines.

4. Signs shall be professionally designed and painted on all sides, including support posts. The signs shall be uniform in design and size.

5. Such signs may remain in place until occupancy permits have been issued by the city for ninety percent (90%) of the lots in single-family subdivisions and eighty percent (80%) of the units in all other residential developments, at which time the signs shall be removed. The city shall issue no additional building permits for new construction within the development until all off-premise signs have been removed.

(G) Temporary off premise directional signs for residential open house events, including model homes and rental units, may be installed by any person as follows:

1. Sign Size: Each sign shall not exceed twenty eight inches by twenty eight inches (28” x 28”) inches in size.

2. Sign Content: Each sign shall include either the words “open house”, “rental unit available”, or “model home”, and the name and telephone number of the person responsible for the sign.

3. Sign Placement: The signs shall be directional in nature and shall be placed solely to facilitate the direction of traffic to open house events. Placement of the signs shall be as follows:

a. The signs shall not be located more than one mile from the site of the open house event.

b. The signs shall not be placed closer than five feet (5’) to any curb.

c. The signs shall not be placed on a sidewalk.

d. The signs shall not interfere with traffic visibility.

e. The signs shall not be placed on private property without the written consent of the property owner.

4. Sign Quantity: To maintain the directional nature of the signs, they shall be limited to a maximum of twelve (12) signs per open house site, with a maximum of two (2) signs per intersection.

5. Sign Duration:

a. The signs may be in place from one hour before to one hour after a weekday open house event.

b. The signs may be in place from ten o'clock (10:00) p.m. on Fridays through six o'clock (6:00) a.m. on Mondays for a weekend open house event.

c. Signs for annual, metro area, special real estate events, such as the Parade of Homes, may be in place for the duration of the event.

(H) Rummage sale signs allowed under subsection 10-30-4(A)(10) of this chapter shall be exempt from this section.

(I) All decisions of the development review committee pursuant to this section shall be consistent with the provisions of section 9-1-8: "Installation of Traffic Control Devices" of this code, and shall be subject to review by the city engineer. An appeal of the city engineer's review shall be made in writing to the city manager, or his or her designee, within ten (10) days of the city engineer's decision.

10-30-11: **PERMIT AND FEE REQUIRED:** Except as otherwise provided in this chapter, no sign or structure shall be erected, constructed, altered, rebuilt or relocated until the required fee as determined by city policy has been paid and a permit has been issued by the city.

10-30-12: **REMOVAL OF UNSAFE AND ILLEGAL SIGNS:** If the city finds that any sign or sign structure is unsafe or in violation of the provisions of this chapter, the chief building official, or his/her designee, shall give written notice to the owner and/or party responsible for the sign to comply with the standards required by this chapter in a prescribed time frame and manner. The removal of the signs shall be done in the following manner:

(A) **Permanent Illegal Signs**: The chief building official, or his/her designee, shall order the removal of any permanent sign erected or maintained in violation of this title. Thirty (30) days' notice in writing shall be given to the owner of such sign, or of the building, structure or premises on which such sign is located, to either comply with this title or remove the sign. The owner of the sign, building, structure, or premises shall also, upon removal of any sign, be fully responsible for repairing, replacing and returning the ground, building wall or other mounting surface to its original condition or to a proper condition consistent with the present appearance of the area, building wall or surface.

(B) **Temporary Or Illegal Signs**: The city may impound signs which have been illegally installed upon public property or within public right of way or easement. The sign owner may retrieve the signs according to the following:

1. Fee Payment. For impounded signs there shall be an impoundment and storage fee as may be approved from time to time by council resolution.

2. Retrieval Of Sign: The sign shall be retrieved from a designated impound area during routine business hours and within fifteen (15) days from the date of impounding. After fifteen (15) days, the city will dispose of the sign.

3. Liability: The city shall not be held liable for any damage to impounded signs.

(C) **Closed Business Signs**: Signs not used for signing when a business closes or leaves the tenant space for twelve (12) consecutive months shall be addressed in the following manner:

1. Wall signs (individual letters) – shall be removed.

2. Wall signs (cabinet) – a blank face shall be inserted in the cabinet

3. Freestanding signs – the sign area shall be totally covered.

10-30-13: **NONCONFORMING SIGNS:** Any sign legally existing on the effective date of this chapter which does not conform to the requirements set forth in this chapter shall become a legal nonconforming use. Except as specified elsewhere, legal nonconforming on-premises signs shall be allowed to be maintained, repaired and refaced, but shall not be expanded without being brought into compliance with all the requirements of this chapter. (Ord. 704, 2-2-1998) No maintenance, repair, re-facing or alteration of any nonconforming sign is permitted if the maintenance, repair, refacing or alteration involves a change that incorporates any element or display prohibited by this chapter. The addition of any changeable copy technology to an existing fixed sign shall be considered an expansion of the use and function of the sign. A sign may not be changed, maintained, repaired or altered from one type of nonconformity to any other type of nonconformity.

10-30-14: **BANNERS ON LIGHT POLES:**

(A) In order to provide unity and identity for multiple building planned unit developments, decorative banners may be installed for year-round or seasonal display on privately owned light poles in any zoning district by conditional use permit, provided that the banners comply with the following standards and requirements:

1. Banners may be approved only for developments with multiple principal buildings and multiple businesses, such as a multi-building retail or service center, a mixed-use campus, or an office/industrial park. In no case shall banners be approved for a single principle building development, a single business development, or a residential development that is not part of a mixed-use commercial development.

2. All banners shall be constructed of high quality, durable, fade resistant cloth.

3. The banners may be of various colors and designs, provided that the banners are consistent with an approved comprehensive design plan. The banners may contain the name and logo of the development and seasonal or special event greetings. In no case shall a banner advertise a business name, a product name, or a service.

4. The top and bottom of each banner shall be mounted to the light pole by appropriate brackets. Banners may be mounted only on light poles owned by the applicant, and shall be mounted to provide a minimum of fifteen feet (15’) of clearance between the bottom of the banner and the ground adjacent to the light pole. No more than two (2) banners on opposing sides, may be mounted to each light pole, and banners shall not be attached to more than seventy-five percent (75%) of the light poles on the site.

5. Each banner shall not exceed a maximum size of two and one-half feet (2 ½’) in width and five feet (5’) in length.

6. The banners shall be included in the total allowable sign area for the buildings in the development, consistent with sign table A, subsection 10-30-15(A) of this chapter.

(B) The applicant for a conditional use permit shall provide to the city a color drawing of the proposed banner design or designs, fabric samples, a site plan showing all light poles and noting the proposed banner locations, and mounting details.

(C) A banner that has become torn, faded, loose, or otherwise in disrepair shall be promptly replaced or removed. Failure to comply with this requirement may result in the revocation of the conditional use permit, pursuant to subsection 10-5-5(H) of this title.

10-30-15: **SIGN TABLES:**

(A) **SIGN TABLE A: MAXIMUM ALLOWABLE SIGN AREA**

	A		B
B-1 district	50 sq. ft.	or	10%
CUPs in R districts	50 sq. ft.	or	12%
B-2, I-3 & GIM districts	50 sq. ft.	or	14%
B-3 district	100 sq. ft.	or	16%
B-4, I-1, I-2 & GIH districts	125 sq. ft.	or	18%

A. Allowable sign area regardless of building facade.
B. Maximum allowable sign area based on percentage area of building facade.

(B) **SIGN TABLE B:**
FREESTANDING SIGN STANDARDS EXCEPT AS OTHERWISE SPECIFIED

Street Classification[1]	Speed (MPH)	Area (Square Feet)	Height (Feet)
City	30	20	6
Collector	30	25	16
	35	50	20
	40	100	24
Principal and Minor Arterials	30	50	18
	35	100	22
	40	125	24
	45	150	26
	50+	175	28
	65	200	32

(C) **SIGN TABLE C:**
PROPERTY FOR LEASE SIGN SIZE LIMITS

Speed	Area [2]	Height

Street Classification[1]	(MPH)	(Square Feet)	(Feet)
City	30	16	8
Collector	30 – 40	16	8
Principal and Minor Arterials	30 – 35	16	8
	40 – 45	32	12
	50+	64	12
	65+	64	12

Notes:

1. Street classifications are defined by the official comprehensive plan as adopted and amended. Signs on directly adjoining frontage roads may use the standards for the adjoining street classification.

2. Signs limited to twelve (12) square feet in R-1 and R-2 zoning districts.

10-30-16: **EMPLOYMENT SIGNS**: Employment signs allowed by permit.

(A) **Sign Permit**: The businesses in all business and industrial zoning districts as well as each public and institutional conditional use in residential districts shall be allowed one employment sign permit per month.

(B) **Permitted Devices**: One of the devices described below is permitted for employment signs, in addition to the maximum allowable sign area. Employment signs shall be professionally designed and shall meet the following standards:

1. Banners:

a. Banners may be attached to poles and buildings, provided they are well secured and resecured if they come loose. Banners attached to buildings shall not be placed above the roofline of the building.

b. No more than one banner shall be allowed for each business, except that end tenants may have a maximum of two (2) banners to be located on the front and side elevations of the tenant space.

c. Banners shall not be larger than one hundred (100) square feet.

d. Ground mounted employment signs shall have either flush or side mounted, four inch by four inch (4” x 4”), painted wood posts and shall not exceed eight feet (8’) in height. Banners mounted to posts on the ground shall be well secured and re-secured if they come loose. A banner shall be set back from the front property line no less than one foot (1’) per one foot (1’) of sign height, except that if the sign cannot be located to comply with the minimum setback requirement from the front property line without locating the sign in a parking lot or other paved surface, the sign may be located up to the front property line provided that the sign does not exceed sixteen (16) square feet in area and four feet (4’) in width, and further provided that the sign will not disrupt any public utility service.

e. Banners shall not be installed on fences.

2. Metal:

a. Metal signs shall be painted on each side, and mounted in the ground with the posts painted to match the background color of the sign.

b. No more than one metal sign shall be allowed.

c. Metal signs shall not be larger than six (6) square feet nor higher than four feet (4') off the ground.

(C) **Permit Required**: Before any employment sign shall be displayed, the responsible lot owner of business shall submit a complete application for a permit. No employment sign shall be displayed without first obtaining a permit.

10-30-17: **SUBSTITUTION CLAUSE**: The owner of any sign which is otherwise allowed by this sign ordinance may substitute non-commercial speech in lieu of any other commercial speech or non-commercial speech. This substitution of copy may be made without any additional approval or permitting. The purpose of this provision is to prevent any inadvertent favoring of commercial speech over non-commercial speech, or favoring of any particular non-commercial speech over any other non-commercial speech. This provision prevails over any more specific provision to the contrary.

10-30-18: **BANNER SIGNS FOR CONDOMINIUMS**

(A) **Temporary Display of Condo For Sale Banners**: Condo for sale banners may be displayed as follows:

1. Banners may be displayed from February 1 through October 31.

2. A sign permit is required from the building inspection department for each month or portion thereof the sign is displayed.

3. No more than one (1) banner shall be allowed for each condominium building up to one hundred fifty (150) square feet displayed on one (1) side of one (1) building except that if the building is on a street corner, then one (1) banner up to one hundred (100) square feet may be displayed on each side of the building facing the street corner.

4. Banners shall not be placed above the roofline of the building.

5. Banners shall not be placed on poles or other devices and located on the ground.

6. All banners shall be maintained such that they do not become ripped, torn, defacte, loose, or unsecured.

[2-2-98 Amd. Ord. 704]; [10-18-99 Amd. Ord. 772]; [3-20-00 Amd. Ord. 786]; [7-1-02 Amd. Sec. 15 (B) (C) Ord. 851]; [11-18-02 Amd. Sec. 7, 8, 15 Ord. 864]; [7-6-04 Amd. Sec. 4 (A) (11) Ord. 932]; [8-2-04 Amd. Sec. 13 Ord 935]; [4-4-05 Amd. Sec. 4(A) (4), Sec. 5(C), (D), (E), (G) Ord. 970]; [11-21-05 Amd. Secs. 2, 14 (A) (4.), Add Sec. 17 Ord. 1001]; [2-21-06 Amd. Sec. 3 (I) Ord 1016]; [5-1-06 Add 6 (D) Ord 1026]; [10-16-06 Amd. Sec. 7 (D) Ord. 1051]; [12-18-06 Amd. Sec. 3 Ord. 1059]; [2-20-07 Amd. Secs. 2, 8 (K), 9, 13 Ord. 1065]; [5-7-07 Amd. Secs. 2, 4(A); 4(B); 5(D); 5(E) (4) Ord. 1074]; [7-16-07 Amd. Secs. 7, 15(A) Ord. 1085}; [10-21-08 Amd. Secs. 2, 4(A), 4(B), 5(D) Ord. 1139]; [6-2-09 Amd. Secs. 2 & 4 Ord. 1166]; [8-18-09 Amd. Secs. 2, 3(H), 4(A), 6(C), 7, 8(K), 9, 10 Ord. 1178]; [4-6-2010 Amd. Secs. 2, 4(A)18e, 5(D)7.d, 7(D), (H), (L), (M), 9(C), (O), 10(C), 18, Ord. 1196]

Interim Ordinances:

Ord. 1178 – Approved August 18, 2009 – Expires August 1, 2010

CHAPTER 30A

LANDSCAPE REQUIREMENTS

SECTION:

10-30A-1: Purpose And Intent
10-30A-2: Definitions
10-30A-3: General Landscape Requirements
10-30A-4: Guarantees And Securities
10-30A-5: Grading Permit
10-30A-6: Erosion Control Guarantee
10-30A-7: Landscaping Requirements In Residential Districts
10-30A-8: Landscaping Requirements In Multiple Family Residential, Business And Industrial Districts
10-30A-9: Landscaping Requirements Specific To Business Districts
10-30A-10: Landscaping Requirements Specific To Industrial Districts

10-30A-1: **PURPOSE AND INTENT:** The purpose of this chapter is to clearly express the city's intent for all properties to be landscaped and maintained with great care. Properties shall be landscaped to express sensitivity to environmental conditions as well as the aesthetic needs of the general public.

(A) The requirements of this chapter are intended to guide landscaping within commercial, industrial and residential zoning districts. All plantings installed by property owners in addition to the standards required by this chapter do not need to comply with plant size specifications.

(B) All landscaping must be designed to add visual beauty to the property and provide a high level of aesthetic value. The quantity and quality of the design should be compatible with each zoning district and the intended use of the property. Landscaping shall also be consistent with areas which have established unique design concepts, patterns, and any applicable Overlay Districts.

(C) All new development or full redevelopment of a site shall comply with the landscape requirements of this chapter and incorporate sustainable landscape elements in the planting design to include, but not be limited to, xeriscaping, use of native species, rain gardens/bioretention systems, green rooftops, lakescaping, and aesthetic design elements such as public art, fountains, plazas, and front yard/entrance landscaping.

(D) The preservation of desirable vegetation is a goal which should be addressed prior to the vegetation removal for grading, construction and/or expansion of an existing use.

10-30A-2: **DEFINITIONS:** For the purposes of this chapter, the following words and terms are defined as follows:

ANNUAL: A plant, usually a flowering species, which lives only one growing season.

BOULEVARD: The area of a street right of way that lies between the property line nearest to any street to which such property abuts and the edge of pavement or back of curb of such street.

CANOPY: The width and/or height of the overall leafy portion of a deciduous tree.

DECIDUOUS: Plants which lose foliage and become dormant during winter months.

DRIP-LINE: An imaginary line drawn vertically from the outer edge of the canopy to the ground. This is typically where the most sensitive roots are located.

EVERGREEN TREES: Large evergreens which reach mature heights of fifty feet (50') or more.

EVERGREENS: A plant which retains its green color year-round and does not drop its fronds or needles in the winter.

GREEN ROOFTOPS: Veneers of living vegetation installed atop of buildings which act to manage stormwater by mimicking a variety of hydrologic processes normally associated with open space.

GROUND COVER: Plants which are used for accents and/or soil stabilization and are typically twenty four inches (24") or less in height.

HEAT ISLAND REDUCTION: Use of vegetative cover to minimize heat islands on hard cover areas and to reduce impact on micro climate and human and wildlife habitat.

LAKESCAPING: A buffer zone of unmowed native vegetation that extends both lakeward and landward from the water's edge. It is a natural approach to erosion control that slows runoff and enhances wildlife habitat.

LARGE SHRUBS: Deciduous shrubs with mature natural growth over six feet (6') in height.

MEDIUM SHRUBS: Deciduous shrubs with mature natural growth between four feet (4') to six feet (6') in height.

NATIVE SPECIES: Plants that are indigenous to a particular region. In Minnesota, plants are considered native if they were present at the time of the Public Land Survey (1847-1907), which was conducted prior to and during the early stages of European settlement.

ORNAMENTAL TREES: Often defined as understory trees. Used for color accents or where a large tree is not practical. A deciduous tree with a mature height under thirty feet (30').

OVERSTORY TREES: Large deciduous shade-producing trees with a mature height over thirty (30) feet.

PERENNIAL: A plant, usually a flowering species, having a life span more than two (2) years. Appears or blooms every year.

PERVIOUS PAVEMENT: A paving system that allows water to infiltrate through the pavement in order to accurately reflect the predevelopment hydrologic cycle and include, but not limited to, porous concrete, porous asphalt, porous pavers, open jointed paving blocks, and open cell paving blocks.

PLANTING SCHEDULE: A listing of all plants to be installed, identifying their common name, botanical name, plant size, root type, and quantity to be installed.

RAIN GARDENS/BIORETENTION SYSTEMS: Shallow landscaped depressions commonly located in parking lot islands or adjacent to land cover areas that receive stormwater and filter the runoff or allow it to infiltrate in the soil bed.

SMALL SHRUBS: Deciduous shrubs with mature natural growth less than four feet (4') in height.

SPREADING AND GLOBE EVERGREENS: An evergreen shrub which maintains a natural global or spreading shape.

UNDERSTORY TREES: Often defined as ornamental trees. Also could mean the small trees under the canopy of a wooded area.

UPRIGHT EVERGREENS: An evergreen shrub which maintains a natural columnar or upright shape.

XERISCAPING: A landscape which uses plants that have low water requirements, allowing them to withstand extended periods of drought without irrigation.

10-30A-3: **GENERAL LANDSCAPE REQUIREMENTS:** General requirements shall apply to all zoning districts and include the following:

(A) **Landscape Plan:** Prior to the commencement of turf removal, any digging, grading or planting, a landscape plan shall be submitted to the city providing all information required in this chapter. Color renderings that are drawn to scale shall be provided illustrating the appearance of landscaping and screening at the time of installation. All underground and overhead utilities and other mechanical equipment must be shown on the plan. The contractor is responsible for all damage, repairs and delay of service as a result of damage to any above or below ground utilities.

(B) **Disturbed Areas:** All areas disturbed by grading which are not built upon, paved or retained as a natural area shall be sodded, hydroseeded, and/or landscaped, unless specifically approved as part of the overall landscape plan and shall be maintained in accordance with section 10-7-20 of this title.

(C) **Nursery Stock Sizing**: The following nursery stock standards shall be required at the time of planting. All measurements shall conform to the standards set forth in the current edition of the "USA Standards of Nursery Stock". Larger plants may be used or specified at any time. Trunk diameter shall be measured six inches (6") above ground level for four inch (4") caliper trees or less and measured twelve inches (12") above ground level for four inch (4") caliper trees or more.

	Potted	or	Balled & Burlapped
Overstory (Shade) trees	2½ inch diameter		2½ inch diameter
Ornamental trees	6 to 7 feet		2 inch diameter
Evergreen trees			6 feet
Tall shrubs & hedge material (evergreen or deciduous)	3 to 4 feet		3 to 4 feet
Low shrubs, deciduous	18 to 24 inch		24 to 30 inch
Evergreen	18 to 24 inch		24 to 30 inch
Spreading Evergreens	18 to 24 inch		18 to 24 inch

(D) **Prohibited Species:** Prohibited species that shall not be planted within the city are identified in the Burnsville Woodland Protection and Evaluation Packet.

(E) **Topsoil:** When topsoil or planting soil is required, the soil shall have a pH range of 5.00 to 8.00 unless otherwise specified. All soil shall be decompacted and free of sticks, stones, and other debris. Soil shall contain no less than five percent (5%) organic compost and twenty five percent (25%) sand. For planting of shrubs, perennials and ornamental grass, a minimum depth of six inches (6") of topsoil shall be placed on the affected areas before installation. For establishment of turf a minimum depth of four inches (4") of topsoil shall be placed on the affected areas before installation of sod or seed.

(F) **Planting Schedules:** All plants to be installed shall be identified and approved by the city prior to installation. Plants shall be identified by a planting schedule which includes:

1. Quantity of plants to be installed
2. Common name
3. Botanical name
4. Plant size at installation and at full growth
5. Root type (B&B, container)

(G) **Plant Location:**

1. No plants except for flowers, ground covers, or vines shall be placed within two feet (2') of any building, driveway or parking area unless specifically noted on the landscape plan.

2. Trees shall be planted at least five feet (5') from the property line and shall not encroach within easements.

3. The landscape and screening location requirements of this Chapter may be modified where existing conditions such as easements, underground pipelines or other circumstance would not allow required landscaping or screening to be installed. In these cases, the required plant or screening materials may be installed elsewhere on site as approved by the Development Review Committee (DRC).

(H) **Staking of Trees:** The owner is responsible for keeping trees in a plumb position. When staking or guying is required, it shall occur so as not to create any hazards or unsightly obstacles. All wires shall be encased in hose to prevent tree damage.

(I) **Plant Hardiness:** All plants specified and installed must be nursery grown and identified as hardy plants which are appropriate for all seasonal conditions. Plants must be sound, healthy, vigorous, and free of disease, insect eggs and larvae.

(J) **Plant Diversity:** To promote diversity for areas of a site where vegetative screening is required or proposed, no single variety of plants shall be allowed to constitute more than twenty five percent (25%) of the screening materials and the complement of plants used shall provide year-round visual interest.

(K) **Pervious Pavement Systems:** In lieu of sod, seed, or other plant materials, pervious pavement systems may be installed up to a maximum of ten percent (10%) of the required green space standard for each zoning district subject to:

1. The applicant shall demonstrate to the satisfaction of the development review committee (DRC) that proposed construction techniques, materials, soil conditions and the location and proposed use of said systems are appropriate for the specific site conditions and

2. The land owner shall enter into a maintenance agreement with the city.

3. If the applicant and the development review committee (DRC) cannot agree on the proposed pervious pavement system, the applicant shall be required to make an application for a conditional use permit (CUP) for approval to use the system.

(L) **Irrigation Requirements:** All properties abutting or across the street from residential districts and uses shall provide in-ground irrigation systems to all landscaped and vegetated screening areas.

(M) **Irrigation Controls:** Where irrigation systems are installed, said systems shall have water sensor devices to avoid overwatering and timing devices to ensure irrigation is conducted during the hours permitted by the city watering restriction requirements.

(N) **Coverage:** All landscaped areas shall be contain sod be seeded or defined as a landscape planting bed with approved native vegetation, ground covers, shrubbery and trees with a mulch cover.

(O) **Maintenance:** All landscaped areas shall be maintained by the property owner and kept neat, clear and uncluttered, and where landscaping is required as part of city approvals, any plant material which is diseased or dies shall be replaced with like kind of the original size by the property owner. No landscaped area shall be used for the parking of vehicles or for the storage or display of materials, supplies or merchandise, unless specifically approved by the city.

1. Replacement of landscape materials, plantings and screening shall be consistent with the original landscape/screen design or as approved by the city.

2. All repair or replacement shall be done within forty five (45) days of written notification from the city.

3. The responsibility for tree and plant growth and maintenance rests upon the property owner.

10-30A-4: **GUARANTEES AND SECURITIES:**

(A) **Guarantee:** The owner shall guarantee the growth and maintenance of all plants for a minimum of two (2) growing seasons. The guarantee will be reduced to a one year guarantee if all green areas are properly irrigated with an in-ground irrigation system. The owner is responsible for contacting the city for a landscape installation inspection of all plantings. The guarantee period will not begin until the landscape installation inspection has occurred and the plantings conform to the approved landscape plan. At the end of the guarantee period, the owner is responsible to contact the city for a final landscape inspection. All plants must be alive and installed per the approved landscape plan. Failure to do so may result in the withdrawal of any or all necessary funds from the letter of credit or cash security by the city to finance the completion of the required landscaping.

(B) **Letter of Credit, Cash Security:** Prior to the issuance of a building permit, the owner shall supply the city with a letter of credit or cash security in an amount not less than one hundred percent (100%) of the total estimated landscaped value. At the request of the city, the owner shall supply the installing contractor's official bid as verification for establishing the amount of security. At the owner's discretion, sodding costs may be estimated and secured as part of the Letter of Credit for erosion control. The security will be held by the city to ensure landscaping is installed as shown on the approved landscape plan and that plant materials survive the guarantee period. Provided landscaping is alive per the approved plan, the security will be returned to the owner at the end of the required guarantee period.

10-30A-5: **GRADING PERMIT:** Any earth work shall comply with section 10-9-2 of this title.

10-30A-6: **EROSION CONTROL GUARANTEE:** Prior to the issuance of a grading, filling, or excavation permit, the owner shall supply the city with all necessary information regarding erosion control measures and security in an amount to be set by city policy number 2.050. Upon the completion of the project and the determination that all erodible areas have been adequately stabilized, the erosion control escrow, without interest, less any draw made by the city, shall be released to the person who deposited the funds with the city.

If the applicant fails to comply with the approved erosion control plan, or in the event of an emergency, the city may take such action as it deems appropriate to control erosion and charge the costs to the applicant. If the applicant does not reimburse the city for any cost incurred for such work to remedy erosion concerns within ten (10) days, the city may draw down the required cash escrow to pay the costs.

10-30A-7: **LANDSCAPING REQUIREMENTS IN RESIDENTIAL DISTRICTS:**

(A) **R-1, R-1A And R-2 Residential Districts:**

1. Security: Before a building permit is issued for a single-family home or twin home, for a remodeling of a single-family home or twin home that changes the footprint of the home, or for an accessory structure, a cash security or letter of credit of one thousand dollars ($1,000.00) shall be furnished to the city to guarantee compliance with the landscaping (including tree planting) requirements for the lot. A final Certificate of Occupancy will not be issued until the required landscaping and trees are installed. In the event the landscaping and tree planting is not completed, the city may enter the lot, perform the work and apply the cash security toward the cost. Upon satisfactory completion of the landscaping and tree planting, the security funds, without interest, less any draw made by the city, shall be returned to the person who deposited the funds with the city.

2. Required Landscaping:

a. All front yards, boulevards and side yards to the rear of the structure shall have sod, hydroseeding, or landscaping with mulch cover properly installed within sixty (60) days, weather permitting, after the home is constructed upon the lot, but no later than one hundred eighty (180) days after issuance of a building permit. During winter conditions, when plants cannot be installed due to weather, the city will issue a temporary Certificate of Occupancy and specify a date for landscaping to be installed during the growing season.

b. Silt fences shall be installed and maintained pursuant to section 10-8-8 of this title.

c. Two (2) trees per lot shall be installed, in the front yard or side yard if facing a street, concurrently with sodding requirements.

d. The lot shall have one overstory tree and either one ornamental tree or evergreen tree. The lot may have two (2) overstory trees as long as they are not identical species. This provision may be waived if existing trees meet the requirements of this subsection and are shown on the certificate of survey.

e. All trees shall be planted on private property at least five feet (5') from the property line. All required trees shall be in the front yard, or on a corner lot, they may be located in either the front or street side yard area. On a cul-de-sac lot one may be located in the side yard area.

f. In subdivision planting, not less than two (2) species of trees shall be planted in any block and not less than twenty percent (20%) nor more than fifty percent (50%) of the total trees planted in a block may be of the same species.

(B) **R-3A, R-3B, and R-3C Medium-Density and High Density Residential:**

1. At least fifty percent (50%) of the total site area shall be landscaped. For the purpose of this subsection, landscaping may also include prairies, wetlands, woodlands ponds, pervious outdoor play areas, outdoor tennis courts, and outdoor swimming pools. Woodland areas shall not be decreased below the woodland removal threshold, [established in section 10-8-9(B) of this title] and reforested off-site, and wetland areas shall not be filled and mitigated off-site, in order to comply with the landscape area requirement.

2. All maintained/manicured landscaped areas shall have in-ground irrigation systems.

(C) **R-3D Mobile Home Park:**

1. All areas which are not occupied by the mobile home site, driveway, parking area, patio or deck area, shall be landscaped or sodded.

2. A buffer yard of not less than thirty feet (30') in width shall be sodded and landscaped with approved ground cover, shrubbery and trees around the perimeter of the manufactured home park. This buffer yard shall be maintained by the owner of the manufactured home park.

10-30A-8: **LANDSCAPING REQUIREMENTS IN MULTIPLE FAMILY RESIDENTIAL, BUSINESS AND INDUSTRIAL DISTRICTS:**

(A) **General Requirements:** General requirements that shall apply in all multiple family residential, business and industrial districts include the following:

1. Plant Diversity: In addition to the twenty-five percent (25%) plant diversity requirement, the landscape plan design shall, at a minimum, provide at least three (3) of the following required numbers of trees and shrubs in addition to any trees and shrubs required for screening in section 10-30A-8.A.4 and section 10-30A-8(B) of this title:

a. One (1) overstory tree per three thousand (3,000) square feet of open area.

b. One (1) ornamental tree per fifteen hundred (1,500) square feet of open space.

c. One (1) evergreen tree per three thousand (3,000) square feet of open area.

d. One (1) deciduous or evergreen shrub per one hundred (100) square feet of open area.

2. Building Perimeter Landscaping: At least fifty percent (50%) of the total building perimeter shall be sodded or landscaped with approved ground cover, shrubbery and trees in an area of no less than six feet (6') in width.

3. Heat Island Reduction: To minimize impact on microclimate, human and wildlife habitat shading of parking lots is required. At least one (1) overstory shall be planted for every ten (10) parking stalls on site. To satisfy this requirement trees must be located at least four feet (4') and within ten feet (10') of a curb adjacent to any internal parking or drive area. Said trees shall count toward meeting the overall site green space and landscaping requirements identified by section 10-30A of this title, for the underlying zoning district.

4. Buffer Yards:

a. Buffer Yard Location: Where any business or industrial use (i.e., structure, parking or storage) abuts a residential zone or use, such business or industry shall provide a buffer yard and screening along the boundary of the residential property. The buffer area and screening shall also be provided where a business or industry is across the street from a residential zone or use, but not on that side of a business or industry considered to be the front as defined by the city.

b. Buffer Yard Design: Except in areas of steep slopes or where natural vegetation is acceptable, as approved by the city, buffer yards shall contain a combination of earth berms, plantings, or privacy fencing of a sufficient density to provide a minimum visual screen and a reasonable buffer to the following heights:

(1) Plantings: All designated buffer yards must be seeded or sodded except in areas of steep slopes where natural vegetation is acceptable as approved by the city. All plantings within designated buffer yards shall adhere to the following:

(a) Planting screens shall be fully irrigated, consist of healthy, hardy plants, at least six feet (6') in height and designed to provide a minimum year-round opaqueness of eighty percent (80%) at the time of installation whenever screening or buffering is required.

(b) Plant material centers shall not be located closer than five feet (5') from the fence line and property line, and shall not conflict with public plantings, sidewalks, trails, etc.

(c) Landscape screen plant material shall be in two (2) or more rows. Plantings shall be staggered in rows unless otherwise approved by the city.

(d) Shrubs shall be arranged to lessen the visual gaps between trees. Along arterial streets, all plantings of deciduous trees shall be supplemented with shrubs such that the buffer yard contains a continuous band of plants.

(e) Deciduous shrubs shall not be planted more than four feet (4') on center, and/or evergreen shrubs shall not be planted more than three feet (3') on center.

(f) Deciduous trees intended for screening shall be planted not more than forty feet (40') apart. Evergreen trees intended for screening shall be planted not more than fifteen feet (15') apart.

(2) Walls and Fences: All walls and fences erected within designated buffer yards shall meet the following conditions:

(a) A screening fence or wall shall be constructed of attractive, permanent finished materials compatible with those used in construction of the permanent structure. Such screens shall be at least six feet (6') in height and provide a minimum opaqueness of one hundred percent (100%).

(b) Fences may be exposed no more than a maximum length of twenty feet (20') between landscaping areas or clusters.

(c) For interior lots, a gate constructed of the same material as the fence shall be provided in the wall or fence to allow for maintenance of the street side boulevard.

(d) Fences and landscaping shall not be located within the traffic sight visibility triangle.

(3) Earth Berms: Earth berms shall adhere to the following:

(a) Except in areas of steep slopes or where other topographic features or physical characteristics will not permit, as determined by the City Engineer, an earth berm shall be installed in all designated buffer yards in accordance with the following requirements:

i. Berms shall be a minimum of four feet (4') in height.

ii. The slope of the earth berm shall not exceed a 3:1 slope unless approved by the city engineer.

iii. The earth berm shall contain no less than four inches (4”) of top soil.

(B) **Parking Lot Landscaping Requirements:** The following shall apply to all new development and redevelop of parking lots for expansions creating five thousand (5,000) square feet or more of impervious surface or disturbance of one-half (1/2) acre or more of land.

1. Parking Lot Screening: Parking lot screening shall be designed to reduce the visual impact of surface parking lots; mitigate glare from headlights; improve the aesthetic quality of the area for users of the site, adjacent sites, roadways, and sidewalks; and define the perimeter of the parking lot as follows.

a. Between those portions of an off-street parking area containing six (6) or more parking spaces and a different zoning district or a public street.

b. Parking lot screening requirements may be waived in circumstances where perimeter screening is provided or where the elevation of the parking area relative to the elevation of the street and sidewalk would make the screening ineffectual as determined by the Development Review Committee (DRC).

c. Parking Lot Screening Standards:

(1) Parking lot screening must be provided within ten feet (10’) of the perimeter of the parking lot to be screened, except for parking lots adjacent to rain gardens/bioretention systems, other landscape features, or where the traffic sight visibility triangle may be impacted.

(2) Parking lot screening shall be not less than eighty percent (80%) opaque and be a minimum of three feet (3’) and a maximum of four feet (4’) in height as measured from the adjacent finished surface of the parking area. When shrubs are used to provide the screen, such shrubs must be at least two feet (2’) tall at planting and anticipated to grow to at least three feet (3’) tall at maturity.

(3) No landscaping or screening shall interfere with driver or pedestrian visibility for vehicles entering or exiting the premises.

(4) Screening for a parking lot may be comprised of one hundred percent (100%) evergreen planting materials.

d. Parking lot screening must consist of at least two of the following:

(1) A compact hedge of evergreen or densely twigged deciduous shrubs spaced to ensure closure into a solid hedge at maturity;

(2) A berm with plantings described above;

(3) Transit shelters, benches, bicycle racks and similar features may be integrated as a part of the screen.

(4) Fencing may be integrated as part of the screen. All wood fencing shall be stained and sealed with a weather proof product.

2. Parking Island Design: Off-street parking areas with at least twenty-five (25) parking stalls shall contain interior landscaped islands. Such islands shall be bounded by a raised concrete curb or approved equivalent and shall contain mulch (wood, bark, or decorative rock) or turf grass to retain soil moisture. This provision shall not apply to parking structures. The standards for landscape islands are as follows:

a. Landscape parking lot islands shall be required at the beginning and end of each parking row and shall contain a minimum of one hundred eighty (180) square feet and a minimum width of nine feet (9').

b. A minimum of one (1) overstory tree shall be provided for each island. This provision may be waived for islands utilized for storm water management or other utility or safety issues as determined by the city engineer.

c. Shrubs, perennials or ornamental grass shall be incorporated in each landscaped island.

d. Islands shall be prepared with topsoil to a depth of two feet (2') and improved to ensure adequate drainage, nutrient and moisture-retention levels for the establishment of plantings.

e. All perimeter and interior landscaped areas in parking lots shall be equipped with a permanent irrigation system, unless drought-tolerant plant materials are used exclusively. Where drought-tolerant plant materials are used, irrigation shall be required only for the two (2) year period following plant installation and may be accomplished using hoses, water trucks, or other non-permanent means.

(C) **Alternative Landscape Options:** The city encourages the use of special design features such a xeriscaping; rain gardens/bioretention systems; landscaping with native species; green rooftops; heat island reduction; and aesthetic design. All site development and redevelopment must include two of the following alternative landscape options:

1. Xeriscaping: Xeriscaping is landscaping which uses plants that have low water requirements, making them able to withstand extended periods of drought. Xeriscaping landscapes are a conscious attempt to develop plantings which are compatible with the environment and make a conscious effort to minimize use of water.

2. Rain Gardens/Bioretention Systems: Bioretention systems can be described as shallow, landscaped depressions commonly located in parking lot islands or within areas that receive stormwater runoff. For credit under this section, the rain garden/bioretention system shall be above ground and a visible part of the green or landscaped area. Stormwater flows into the bioretention area, ponds on the surface, and gradually infiltrates into the soil bed. Pollutants are removed by a number of processes including absorption, filtration, volatilization, ion exchange, and decomposition. Filtered runoff can either be allowed to infiltrate into the surrounding soil (functioning as an infiltration basin or rain water garden), or discharged to the storm sewer or directly to receiving waters (functioning like a surface filter). The use of under drain systems are discouraged

unless where infiltration is prohibited by the Water Resources Management Plan. Runoff from larger storms is generally diverted past the area to the storm drain system.

3. Lakescaping: To preserve or restore the natural buffer along a shoreline. The buffer shall be at least thirty feet (30') wide and be planted with native grasses and species of flowering plants.

4. Landscaping with Native Species: Fifty percent (50%) of the plantings used in the landscape plan shall be of native plant communities of Burnsville on file with the city and approved by the Development Review Committee (DRC). These plants communities include:

   a. Upland Deciduous Forest: Oak Forest, Maple Basswood Forest, White Pine Hardwood Forest, Black Ash Swamp, and Tamarack Swamp.

   b. Brush Prairie: Dry Oak Savannah, Oak Woodland-Brushland.

   c. Oak Openings and Barrens: Dry Oak Savannah, Oak Forest.

5. Green Rooftops: Green rooftops are veneers of living vegetation installed atop buildings, from small garages to large industrial structures. Green rooftops help manage stormwater by mimicking a variety of hydrologic processes normally associated with open space. Plants capture rainwater on their foliage and absorb it in their root zone, encouraging evapotranspiration and preventing much stormwater from ever entering runoff stream. What water does leave the roof is slowed and kept cooler, a benefit for downstream water bodies. Green roofs are especially effective in controlling intense, short-duration storms and have been shown to reduce cumulative annual runoff by fifty percent (50%) in temperate climates.

6. Aesthetic Design: Sites shall be designed to include three of the following: public art, fountains, plazas, perennial beds, entrance landscaping, or other amenities reviewed and approved by the development review committee (DRC).

(D) **Compliance:** If the applicant and the development review committee (DRC) cannot agree on the proposed landscaping design, the applicant shall be required to make an application for a conditional use permit to prove compatibility.

10-30A9: LANDSCAPING REQUIREMENTS SPECIFIC TO BUSINESS DISTRICTS:

(A) **B-1 Office Business:**

1. At least thirty percent (30%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least eight percent (8%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(B) **B-2 Neighborhood Business:**

1. At least thirty percent (30%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least eight percent (8%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(C) **B-3 General Business:**

1. At least twenty five percent (25%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(D) **B-4 Highway Commercial:**

1. At least twenty five percent (25%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(E) **CRD Commercial Recreation District:**

1. At least twenty five percent (25%) of the land area shall be landscaped with approved ground cover, shrubbery and trees. Artificial turf or areas of athletic fields that do not allow water to percolate through the soil shall not be counted as part of the required twenty five percent (25%) green space standard.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required "green area" as defined in section 10-4-2 of this title.

10-30A-10: **LANDSCAPING REQUIREMENTS SPECIFIC TO INDUSTRIAL DISTRICTS:**

(A) **I-1 Industrial Park:**

1. At least twenty five percent (25%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(B) **I-2 General Industry:**

1. At least twenty five percent (25%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(C) **I-3 Office and Industrial Park:**

1. At least thirty percent (30%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least eight percent (8%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(D) **GIM Gateway Industrial Medium:**

1. At least thirty percent (30%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least eight percent (8%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

(E) **GIH Gateway Industrial Heavy:**

1. At least twenty five percent (25%) of the land area shall be sodded and landscaped with approved ground cover, shrubbery and trees.

2. At least three percent (3%) of the internal parking area shall be landscaped. This area is counted as part of the overall required green area as defined in section 10-4-2 of this title.

[7-16-01 Amd. Sec. 6 Ord. 825]; [11-18-02 Amd. Sec. 9 Add (D), (E) Ord. 864]; [1-17-06 Amd Sec. 3 Add (H), (I), (J), Ord 1009]; [2-21-06 Amd. Sec. 4 (B) Ord 1016]; [8-19-08 Amd. Secs. 1(A), 3(A),(B), (J), Add (K), (L); Sec.8 (A)(B)(C)(D) Add (E); Sec. 9 (A)(B)(C)(D)(E) add (F) Ord 1132]; [11-18-08 Amd. Entirely, Ord. 1142];

CHAPTER 31

PENALTIES

SECTION:

10-31-1: Penalties
10-31-2: Injunction

10-31-1: PENALTIES:

(Rep. by Ord. 265, 5-7-84)

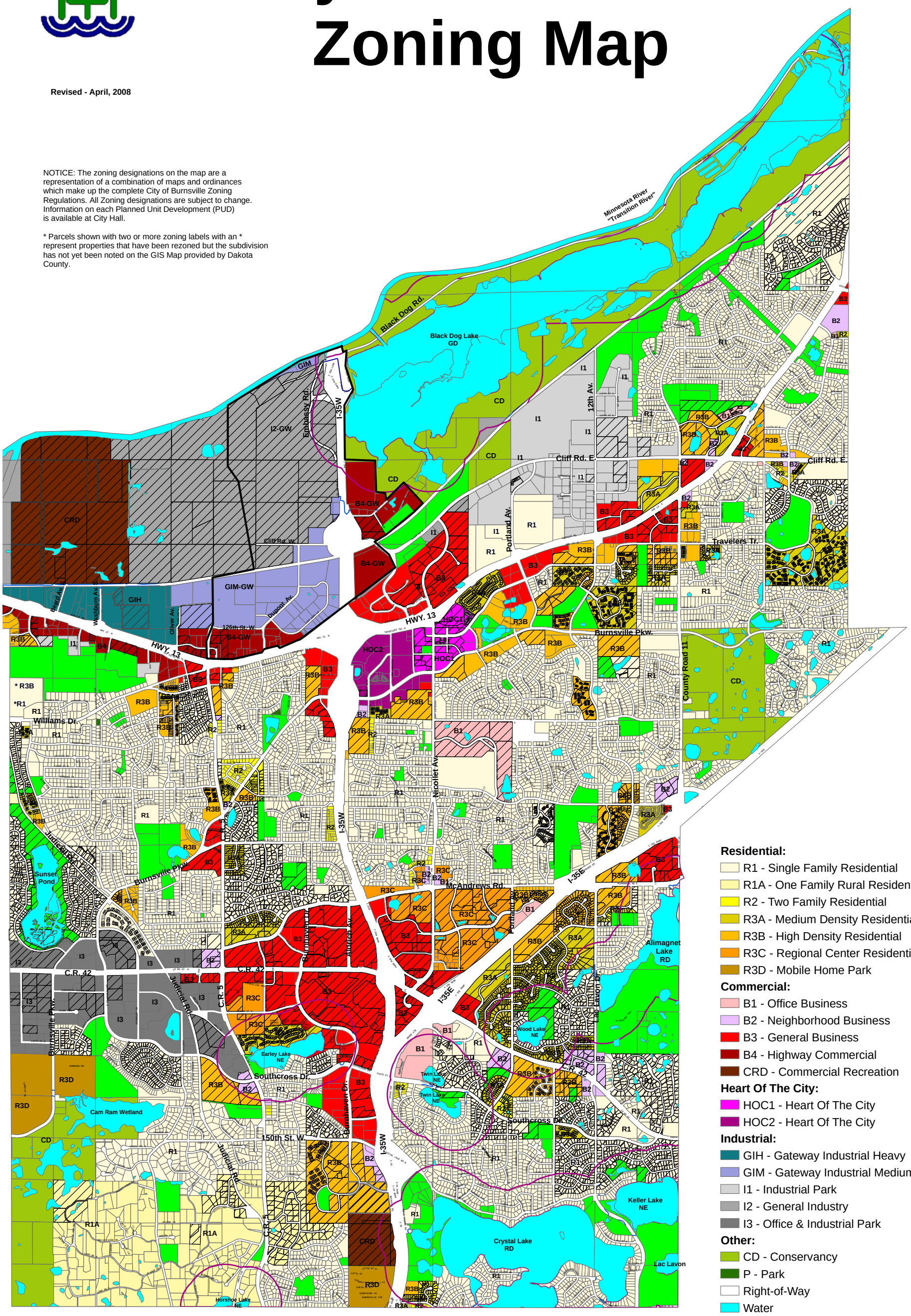
10-31-2: **INJUNCTION:** The city may seek an injunction against a violator of this title. (Ord. 244, 11-15-82)

City of Burnsville Zoning Map

Revised - April, 2008

NOTICE: The zoning designations on the map are a representation of a combination of maps and ordinances which make up the complete City of Burnsville Zoning Regulations. All Zoning designations are subject to change. Information on each Planned Unit Development (PUD) is available at City Hall.

* Parcels shown with two or more zoning labels with an * represent properties that have been rezoned but the subdivision has not yet been noted on the GIS Map provided by Dakota County.



Residential:

- R1 - Single Family Residential
- R1A - One Family Rural Residential
- R2 - Two Family Residential
- R3A - Medium Density Residential
- R3B - High Density Residential
- R3C - Regional Center Residential
- R3D - Mobile Home Park

Commercial:

- B1 - Office Business
- B2 - Neighborhood Business
- B3 - General Business
- B4 - Highway Commercial
- CRD - Commercial Recreation

Heart Of The City:

- HOC1 - Heart Of The City
- HOC2 - Heart Of The City

Industrial:

- GIH - Gateway Industrial Heavy
- GIM - Gateway Industrial Medium
- I1 - Industrial Park
- I2 - General Industry
- I3 - Office & Industrial Park

Other:

- CD - Conservancy
- P - Park
- Right-of-Way
- Water
- FW - Floodway
- FF - Flood Fringe
- SD - Shoreland Districts
- GW - Gateway District

City of Burnsville Planning Department - 100 Civic Center Parkway - Burnsville, MN 55337-3817
Phone (952) 895-4455 - Fax (952) 895-4453 - www.burnsville.org

NOTE: Refer to Zoning Ordinance for additional Environmental Overlay Districts related to Steep Slopes, Wetlands, Woodlands and Unstable Soils.

CITY OF BURNSVILLE
ZONING DISTRICT SUMMARIES
March 2009

The **R-1A, ONE-FAMILY RURAL RESIDENTIAL DISTRICT** allows for large lot single-family detached dwellings, accessory structures/garages, small hobby farms, and public parks. Cemeteries, churches, essential service structures, golf courses, hospitals, municipal buildings schools and single satellite earth station antennas greater than one meter are allowed as conditional uses. The majority of properties in this district have private septic systems and wells although the entire city is in the Metropolitan Urban Service Area. Due to existing large lot development patterns, soils characteristics, extreme topography and predominant natural features, urban utility services will not be extended to this area unless petitioned by landowners or significant public health threat results from use of private septic systems. The minimum lot area for properties with public sewer and water is 1 acre. The minimum lot are for properties with septic systems is 2 acres of dry, buildable area (with soils and topography suitable to provide adequate area for 2 septic system sites). Density is 0.5 to 1.0 units per acre.

The **R-1, ONE FAMILY RESIDENTIAL DISTRICT** allows single family detached dwellings, accessory structures/garages and public parks. Conditional uses include churches, hospitals, nursing homes, municipal buildings, schools, and outdoor recreational facilities. The minimum lot size is 10,000 sq. ft. with development density of 2 to 3.5 units per acre.

The **R-2, TWO FAMILY RESIDENTIAL DISTRICT** allows twin homes, as well as R-1 district permitted and conditional uses. The minimum lot size is 7,500 sq. ft. with development density of up to 4 units per acre.

The **R-3A, MEDIUM DENSITY RESIDENTIAL DISTRICT** allows the permitted and conditional uses of the R1 and R2 districts, 1 to 9 unit attached residential developments, and nursery homes. Residential group homes for 7-16 persons that are licensed by the State are allowed as conditional uses. This district serves as a transitional zone primarily between single-family areas and more intense multi-family residential developments. The minimum lot size is 20,000 sq. ft. + 5,000 sq. ft. for every dwelling unit over 4 units with a development density up to 8.7 units per acre.

The **R-3B, HIGH DENSITY RESIDENTIAL DISTRICT** allows the permitted and conditional uses of the R1, R2 and R3A districts and is a high density residential zone where apartment and condominium buildings are located. It often serves as a buffer zone between lower-density residential districts and commercial districts. The minimum lot size is 18,000 sq. ft. + 3,000 sq. ft. for every dwelling unit over 6 units with development density up to 14.52 units per acre.

The **R-3C, REGIONALCENTER RESIDENTIAL DISTRICT** allows the highest density residential in Burnsville and generally applies to properties located along transit routes. This district allows the permitted and conditional uses of the R1, R2, R3A, and R3B districts. No height limit is placed on structures. This district is located inside the Ring Road System and includes the Ridges Medical Campus. This district accommodates large apartment and condominium projects. The minimum lot size is 20,000 sq. ft. + 2,000 sq. ft. for every dwelling unit over 10 units with a development density of up to 21.78 units per acre.

The **R-3D, MANUFACTURED HOUSING DISTRICT** allows only manufactured housing. Burnsville's three mobile home parks (Camelot, Rambush, and Sunny Acres) are all zoned R-3D. Accessory units that are permitted in the R1 District are allowed. Conditional uses allow mobile homes sales and single satellite earth station antennas in excess of 1 meter. The minimum lot size is 3,600 sq. ft. with a development density of 8.7 units per acre.

The **B-1, OFFICE BUSINESS DISTRICT** allows offices, clinics, day care, government buildings, health clubs, research centers, schools, and studios. Conditional uses include studio's essential service structures, funeral homes, museums, galleries and theaters, nursing homes, therapeutic massage business and towers. Retail sales and warehousing are not allowed. These uses are generally compatible with adjoining single-family residential districts because they generate low-volume, day-time traffic. The minimum lot size is 20,000 sq. ft.

The **B-2, NEIGHBORHOOD BUSINESS DISTRICT** provides for the establishment of highly limited scale neighborhood commercial centers that offer basic convenience-type goods and services to the immediately surrounding residential neighborhoods. Permitted uses include B1 district uses, and small shops/services such as antiques, appliances, art, bakery goods sales and baking, banks, beauty shops, bike sales and repair, book stores, camera and photographic supply stores, clothing stores, convenience store, and other uses intended to service uses to serve the residents of the surrounding residential districts. This district also serves as a transitional zone between residential and large commercial developments. The minimum lot size is 20,000 sq. ft.

The **B-3, GENERAL BUSINESS DISTRICT** provides an area of service facilities to the motoring public. Because of the unique character of this type of commercial activity and its great dependence upon transient trade and traffic, and because of the greater than normal adverse effects created by uses within this district, the location of such activities are critical and should be developed either within other commercial spheres adjacent to arterial traffic routes or as well-buffered areas adjacent to major streets. This district is also intended as a business district which may be located adjacent to shopping centers or other retail business districts, thus keeping the basic retail areas compact and convenient, or in separate areas which may be located in close proximity to a major street or highway, in order that highway service types of land uses can be provided. This district allows regional shopping centers such as the Burnsville Center, and all B-1 district and B-2 District uses. The minimum lot size is 20,000 sq. ft.

The **B-4, HIGHWAY COMMERCIAL DISTRICT** provides for a mixture of commercial, office, and light industrial land uses, made mutually compatible through the enforcement of performance standards, to encourage and accommodate high quality, large scale development opportunities along intermediate arterial roadways within the city. The majority of the B-4 Districts are located adjacent to Highway 13 and I35W. This district allows a mixture of large-scale retail, service, office, and some light industrial uses (including outdoor storage uses). The minimum lot size is 40,000 sq. ft.

The **HOC, HEART OF THE CITY DISTRICT** is an area for compact, mixed use development made mutually compatible through a combination of careful planning and urban design and coordinated public and private investment. The standards in this ordinance are intended to implement and effectuate the principles and relationships establishing the Burnsville Heart of the City Framework Plan, which will be carried out through specific standards related to site planning, signage, architecture, building materials, and landscaping. The HOC District is divided into two sub-districts HOC-1 and HOC-2. Uses allowed in this district are intended to address pedestrian traffic and gathering places. Permitted uses include art studios, beauty shops, uses without drive-thru lanes, clinics, coffeehouses, day care, delicatessen, drug store, laundry services, government buildings, health clubs, museums, art institutions, galleries, library, music stores, photo studio, restaurants without drive-in or drive-thru lanes, spas, schools and multi-family attached residential dwellings with a minimum net density of 8 units per acre. Residential may include units which are combined living and working space within the units. Retail, service and office are encourage on street level with high density residential units on upper floors. The minimum lot area is 6,000 sq. ft. Residential densities up to 21.78 units per acre are allowed.

The **CRD, COMMERCIAL RECREATION DISTRICT** allows for recreation and supporting businesses, such as hotel/conference facilities, water parks, athletic clubs, restaurants, amphitheaters, golf courses and other forms of outdoor recreation. An additional intent of CRD is to promote high quality, large-scale recreational uses that

preserve the natural character of woodlands, steep slopes, wetlands and other conditions that hinder development. The minimum lot size is 1 acre.

The **I-1, INDUSTRIAL PARK DISTRICT** provides for the establishment of warehousing and light industrial development and large volume truck-oriented uses. This district allows small processing and fabricating uses, as well as warehouse, wholesale and service operations. It also allows convention and sports facilities, open sales/rental lots, and a limited amount of retail sales. This district serves as a buffer zone between other districts and heavy industrial uses. The minimum lot size is 40,000 sq. ft.

The **I-2, GENERAL INDUSTRY DISTRICT** is a heavy industrial zoning district which allows the manufacturing, compounding, assembly, and other explosive, incineration, and heat processes. This district also allows I-1 District uses. The purpose of this district is to provide areas suitable for the location of general industrial activities, including heavy manufacturing and other such activities which, because of the nature of the project or character of operation, require isolation from or special protections for non-industrial users. The minimum lot area is 40,000 sq. ft.

The **I-3, OFFICE AND INDUSTRIAL PARK DISTRICT** is an office/industrial park/corporate headquarters zoning district which allows office, warehouse, wholesaling, and research uses, convention and sports facilities. It also allows manufacturing processes contained within buildings. This district is compatible with adjacent residential areas because of the low level of development intensity allowed. The city's objective for this district is to attract high quality industrial development that will provide higher income employment and provide an opportunity for creation and expansion of employment centers, business centers, corporate headquarters and a diverse tax base. The minimum lot size is 40,000 sq. ft.

The **GIM GATEWAY INDUSTRIAL MEDIUM DISTRICT** is a light industrial designation and is intended to be an area for future business parks, medical technologies and industrial uses that do not require outdoor storage as a component of their operations. This district was created to implement the Minnesota River Quadrant plan identified by the comprehensive plan. The GIM district sets forth interim strategies to allow for the temporary use of property for exterior storage/display until conditions arise where permanent uses develop. Outdoor storage is required to be 100% screened, which will support an upgrade in the image of the area. Uses permitted in this district include manufacturing, production, processing, cleaning, storage, servicing, repair or testing of materials, goods or products that are wholly contained within a building, office services uses, office warehouse, research laboratories, wholesaling when conducted entirely within a building. Conditional uses include essential service structures, heliports, recycling and reclamation inside a building, towers and single satellite earth station antennas in excess of 2 meters. Interim uses include auto sales when located entirely in a building, open sales, rental lots, open storage lots and open storage subject to screening and buffering requirements. The minimum lot size is 40,000 sq. ft.

The **GIH GATEWAY INDUSTRIAL HEAVY DISTRICT** is a heavy industrial designation and this District allows for heavy industrial users with outdoor operations and storage needs such as manufacturing, fabricating, wholesale operations, aggregate processing, automobile sales, major auto repair, office, warehouse, research laboratories, and wholesaling. Contractor yards, showrooms, open storage lots, kennels and similar uses are allowed with Conditional Use Permits. The minimum lot area is 40,000 sq. ft.

The **P, PARK DISTRICT** is a zoning district designation for public parks that includes all the uses currently and expected to occur in the parks as well as the type of fields and amenities at the parks. Permitted uses include boat landing, golf course, hockey and ice rinks, play fields, open space, recreation uses/equipment, picnic areas and shelters, play equipment, ball fields, recreation buildings, skate board parks, special events, swimming pools, tennis and volley ball courts, warming houses. Conditional uses include essential service structures and towers. There is no minimum lot size for this district.

The **CD, CONSERVANCY DISTRICT** is a zoning district established for the preservation of sensitive natural areas and the protection and enhancement of wildlife habitat. The CD may be applied to either public or private land. Areas included in this district are unsuitable for residential, commercial, industrial and most institutional development, due to flooding, high water table, restrictive soil conditions, steep slopes, significant and valuable vegetation and/or wildlife habitat. Permitted uses include permanent open space, public and private natural conservation and wildlife management areas. Nature centers and administrative buildings, recreational and interpretive trail systems, utility and other public uses are allowed with conditional use permits. There is no minimum lot size for this district.

The **PUD, PLANNED UNIT DEVELOPMENT DISTRICT** is a zoning district that allows for mixed land uses, increased density, density transfer, and/or a variety of site design concepts. Variation from the strict standards of the ordinance may be granted provided the PUD results in public benefit. Uses allowed within PUD's may include only those uses generally considered associated with the general category shown for the area on the official Comprehensive Land Use Plan. Specific allowed uses and performances standards for each PUD shall be delineated in an ordinance and development plan. There is no minimum lot size for this district.

The **GW, GATEWAY DISTRICT** is an overlay district that includes special development standards for the lands located north of Highway 13 on both sides of Interstate I-35W. This area is a predominant gateway and future development need to reflect a commitment to excellence in architecture and site design that are outlined in the Design Framework Manual for the North Gateway District. The Manual provides design standards for site design, streetscapes, architectural building treatments, landscaping and storm water treatment and are intended to provide a framework for evaluating projects to and to ensure that they contribute to a positive image for the North Gateway District as it redevelops over time.

The **FLOOD PLAIN DISTRICT** is an overlay district with regulations to minimize impacts to property and life by managing and regulating development activities in designated floodplains on the Flood Insurance Studies for Burnsville. There are three sub-districts the FW, Floodway District (the channel of the Minnesota River); FF, Flood Fringe District (the portion of the floodplain that is outside of the floodway) and the GFP, General Flood Plain District (the lake bed and areas adjoining a wetland, lake or watercourse which have been or hereafter may be covered by the regional flood).

The following ***Environmental Overlay Districts*** are part of the Zoning Ordinance and their purpose is to protect environmentally sensitive areas within designated areas of the City:

Wetlands Overlay District: This district implements the 1991 Wetland Conservation Act and the accompanying rules of the Minnesota Board of Water and Soil Resources and is intended to conserve, protect, enhance, and result in the no net loss of wetlands in Burnsville. Additionally the regulations promote the restoration of degraded wetlands.

***Soil Erosion Overlay District*:** This District is established to promote the public safety by minimizing the hazards of steep slopes and unstable soils by reducing the excessive erosion, runoff, siltation and pollution of water bodies and streams.

***Restrictive Soils Overlay District*:** This district is established to provide for the regulation of development on restrictive soils to minimize the risk of environmental damage and to protect private home owners and governmental units from incurring high maintenance and capital costs resulting from the necessity to correct deficiencies encountered as a result of development on poorly suited soils.

***Woodland Overlay District*:** The purpose of this district is to preserve trees and woodlands within the City which serve important ecological, recreational and aesthetic functions that benefit present and future residents.

Shoreland Overlay District: Lands subject to Shoreland Overlay District standards are those areas located within 1000 feet of a lake (public water as defined by the Minnesota Department of Natural Resources), or within 300 feet of a river or tributary. There are Shoreland Districts adjacent to the Minnesota River and ten lakes within the community or along our borders. Land uses are restricted in these areas to protect the Shorelands adjacent to the lakes and river. Special lot size, setback, width and other restrictions including limitations on the amount of hard or impervious surface on a lot apply to lands within the Shoreland Districts.

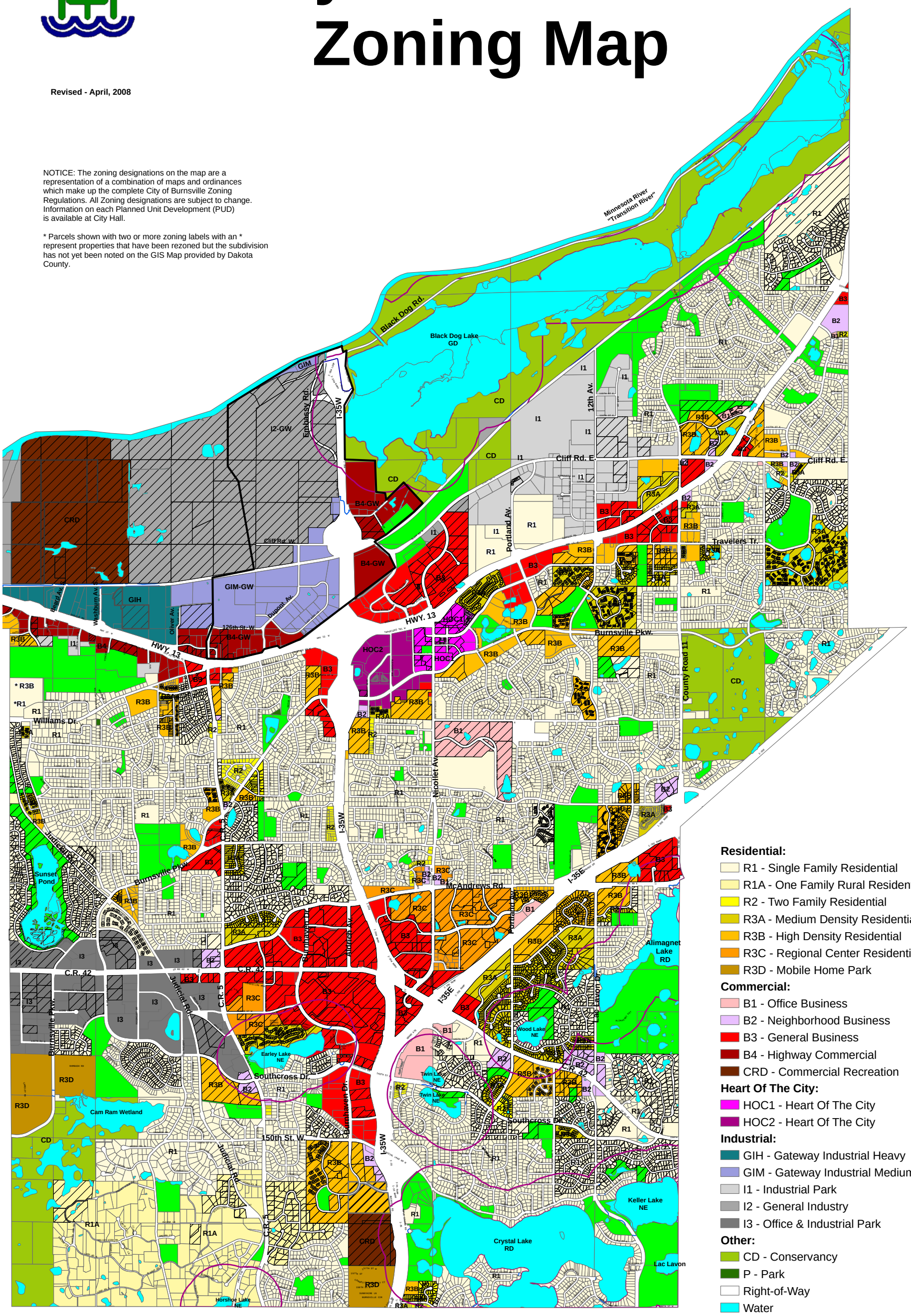
***Stormwater Overlay District*:** The purpose of this district is to manage stormwater run-off from land that results from development to protect surface and ground water resources and to implement the Water Resource Management Plan.

City of Burnsville Zoning Map

Revised - April, 2008

NOTICE: The zoning designations on the map are a representation of a combination of maps and ordinances which make up the complete City of Burnsville Zoning Regulations. All Zoning designations are subject to change. Information on each Planned Unit Development (PUD) is available at City Hall.

* Parcels shown with two or more zoning labels with an * represent properties that have been rezoned but the subdivision has not yet been noted on the GIS Map provided by Dakota County.



Residential:

- R1 - Single Family Residential
- R1A - One Family Rural Residential
- R2 - Two Family Residential
- R3A - Medium Density Residential
- R3B - High Density Residential
- R3C - Regional Center Residential
- R3D - Mobile Home Park

Commercial:

- B1 - Office Business
- B2 - Neighborhood Business
- B3 - General Business
- B4 - Highway Commercial
- CRD - Commercial Recreation

Heart Of The City:

- HOC1 - Heart Of The City
- HOC2 - Heart Of The City

Industrial:

- GIH - Gateway Industrial Heavy
- GIM - Gateway Industrial Medium
- I1 - Industrial Park
- I2 - General Industry
- I3 - Office & Industrial Park

Other:

- CD - Conservancy
- P - Park
- Right-of-Way
- Water
- FW - Floodway
- FF - Flood Fringe
- SD - Shoreland Districts
- GW - Gateway District

City of Burnsville Planning Department - 100 Civic Center Parkway - Burnsville, MN 55337-3817
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NOTE: Refer to Zoning Ordinance for additional Environmental Overlay Districts related to Steep Slopes, Wetlands, Woodlands and Unstable Soils.

APPENDIX W – MET COUNCIL REVIEWS & CITY RESPONSES

CITY OF BURNSVILLE
2030
COMPREHENSIVE PLAN UPDATE

January 23, 2009

Deb Garros
City Planner
City of Burnsville
100 Civic Center Parkway
Burnsville, MN 55337

RE: City of Burnsville 2030 Comprehensive Plan Update – Incomplete for Review
Metropolitan Council Review File No. 20458-1
Metropolitan Council District 16

Dear Ms.Garros:

Thank you for the official submittal of the City of Burnsville's 2030 Comprehensive Plan Update (Update), received on December 31, 2008. Council staff reviewed the submission and finds the Update incomplete for review. The formal review of the Update is suspended until the Council receives the required information discussed below.

REQUIRED INFORMATION

Forecasts (Dennis Farmer 651-602-1552)
The Update is incomplete for forecasts. Figure 25 contains the traffic analysis zone (TAZ) allocation of population and employment, but is missing household forecasts. For completeness, the Update needs to include the TAZ allocation of households (shown below).

Burnsville's System Statement Forecasts

	2010	2020	2030
Population	61,400	63,000	65,000
Households	25,200	27,000	28,700
Employment	37,700	41,200	43,300

The Sanitary System Plan forecasts of households and population served by sewer differ slightly from the System Statement forecasts. Burnsville's System Statement forecasts project that 200 households (and 600 people) remain not serviced by sewer in 2010, 2020 and 2030. The Sanitary Sewer Plan, however, uses the City's entire forecasted population and households in its demand projection tables (without subtracting the 200 non-sewered households). Council staff request the City clarify the reason for this difference (i.e. is it due to rounding, or does the City anticipate that households currently not serviced by sewer will be connected to the sewer system in the future). Forecasts need to be complete and consistent throughout the Update.

Advisory Comment:
Page III-2 states that the City will gain 15,062 jobs by 2030, for a total of 43,300. The text, however, does not state what year begins this 15,000 job-growth period. According to Council employment forecasts and estimates, forecasted job growth from 2000-2030, 2006-2030, and all years in-between, is smaller (about 11,000-9,000).

Housing (Linda Milashius, 651-602-1541)
The Update is incomplete for housing. The Update acknowledges the City's share of the region's 2011-2020 affordable housing need of 737 units and provides a implementation plan to address its housing goals. However, the Update needs to include a land use table with five-year staging to determine that the City has sufficient land (either vacant or within redevelopment sites) to provide opportunities to address it's share of the region's affordable housing need for the 2011-2020 time period. A "land use table in 5-year stages" can be found online at:
http://www.metrocouncil.org/planning/LPH/forms/LandUse5year.doc

Land Use (Patrick Boylan 651-602-1438)
The Update is incomplete for land use. The Update describes the Mixed Use Category, but does not indicate what proportion of the total acreage it expects to be allocated to residential development. The Update further divides the Mixed Use Category into two subcategories: Business Oriented Mixed Use Center and Neighborhood Oriented Mixed Use Center. Residential uses would not be allowed in the Business Category, so the Neighborhood Category is of most concern. The City's Update indicates a density range of from 8 to 21.78 units per acre would be allowed here, but it does not identify the total acreage for the Neighborhood Oriented Mixed Use Center Category or the proportion of that acreage that would be used for residential purposes. This break out is needed for the Update.

The Update discusses both gross and net acreages for its land use categories, but it is unclear how the net acreages were calculated. The Update must demonstrate that the City used the Council's method for calculating density. Specifically:

- How many acres in Neighborhood Mixed Use Center total?
- How much residential is allowed in the Neighborhood Mixed Use Center?

A worksheet to assist in the calculation of net acreage can be found online at
http://www.metrocouncil.org/planning/LPH/forms/NetResDensity.xls

Implementation (Patrick Boylan 651-602-1438)
The Update is incomplete for Implementation. The Update needs a copy of the existing zoning ordinance or a detailed description of the zoning districts.

Transportation (Carol Becker 651-602-1756)
The Update is incomplete for transportation. Information is needed for Traffic Analysis Zone (TAZ) requirements. Please see comments in the "Forecast" section above.

Advisory Comments:
The Update includes an extensive section on the City's roadways by their function. There are inconsistencies in the listing and map between what the community shows as "Minor Arterials" and the Transportation Advisory Board (TAB) map. If the City wishes to change the classification of these roadways, it must formally submit such a request to the Transportation Advisory Committee-Planning Committee. This is a separate process from the comprehensive plan update effort. Differences between the City's and TAB map include the following:

Roadway	From	To	Burnsville	Metro Council
Southcross Dr	Egan Dr (Co Rd 42)	Burnsville Pkwy	A-Minor Arterial	Local
Burnsville Pkwy	Southcross Dr	Co Rd 5	A-Minor Arterial	Major Collector
Burnsville Pkwy	Scott County Line	Southcross Dr	B-Minor Arterial	Major Collector
Southcross Dr	Egan Dr (Co Rd 42) - west	Portland Avenue	A-Minor Arterial	Local
Southcross Dr	Portland Avenue	Co Rd 42 - east	A-Minor Arterial	Major Collector
150th St/Crystal Lake Rd	Co Rd 5	I-35	B-Minor Arterial	Major Collector
Portland Avenue	Southcross Dr	McAndrews Rd	B-Minor Arterial	Local
Burnhaven Dr	150th Street	McAndrews Rd	B-Minor Arterial	Local
126th St / Dupont Ave S	Co Rd 5	Cliff Rd	Collector	A-Minor Arterial
Embassy Rd	Cliff Rd	Black Dog Rd	N/A	A-Minor Arterial

As advisory comments for the transit section, the Update is missing Route 464 in Figure 20. Also, the fares shown in Figure 21 are incorrect.

Wastewater (Roger Janzig 651-602-1119)
The Update is incomplete for wastewater. The Update needs to include a sewer map showing the City's existing service area and proposed trunk sewer system through 2030 and ultimate sewer service area. In addition, a table is needed that shows projected flow forecasts for the City for each trunk sewer connection point to the Council's interceptor system for 2010, 2020, and 2030. The Update needs to indicate if the City prohibits the connection of sump pumps, rain leaders, and passive drain tile to the sanitary sewer system.

ADVISORY COMMENTS

Surface Water Management Plan (Jim Larsen 651-602-1159)

Burnsville updated its Water Resources Management Plan (WRMP) in 2008. Staff requests the City notify the Council of the dates the Lower Minnesota River Watershed District and the Black Dog Watershed Management Organization approved the WRMP. Staff also requests the City send the Council a final version of the WRMP, if it has changed significantly from the plan reviewed in April 2008.

After the required elements of the Update are completed and submitted, Council staff will begin the official review process. Please contact Patrick Boylan, Sector Representative, at 651-602-1438, or the listed technical review staff with any questions.

Sincerely,

Phyllis Hanson, Manager
Local Planning Assistance

Cc: Metropolitan Council District 15, Daniel Wolter
Patrick Boylan, Sector Representative/Principal Reviewer
Cheryl Olsen, Reviews Coordinator

City of
BURNSVILLE
952-895-4400
100 Civic Center Parkway • Burnsville, Minnesota 55337-3817
www.burnsville.org

August 7, 2009

Cheryl Olsen
Reviews Coordinator
Metropolitan Council
390 Robert Street North
St. Paul, MN 55101-1805

RE: Submittal of Revised Documentation to Complete the Burnsville 2030 Comprehensive Plan Update to Initiate Review by the Metropolitan Council.

Dear Ms. Olsen,

The purpose of this letter is to provide the information identified by the Metropolitan Council (via letter dated January 23, 2009) to complete the Burnsville 2030 Comprehensive Plan Update so that the Council review of our plan may begin. This letter sets forth the Metropolitan Council's comments which are then followed by the City's response and/or the information requested.

REQUIRED INFORMATION

1. Forecasts (Dennis Farmer 651-602-1552)
The Update is incomplete for forecasts. Figure 25 contains the traffic analysis zone (TAZ) allocation of population and employment, but is missing household forecasts. For completeness, the Update needs to include the TAZ allocation of households (shown below).

Burnsville's System Statement Forecasts

	2010	2020	2030
Population	61,400	63,000	65,000
Households	25,200	27,000	28,700
Employment	37,700	41,200	43,300

City Response: Figure 25 in the Transportation Plan has been revised to incorporate the requested TAZ information and is attached:

- ***Page VIII-34***

2. The Sanitary System Plan forecasts of households and population served by sewer differs slightly from the System Statement forecasts. Burnsville's System Statement forecasts project that 200 households (and 600 people) remain not serviced by sewer in 2010, 2020 and 2030. The Sanitary Sewer Plan, however uses the City's entire forecasted population and households it its demand projection tables (without subtracting the 200 non-sewered households). Council staff requests the City clarify the reason for this difference (i.e. is it due to rounding, or does the City anticipate

that households currently not serviced by sewer will be connected to the sewer system in the future). Forecasts need to be complete and consistent throughout the Update.

City Response: Chapter IX – City Services & Facilities Plan, Table of Contents and Section 13.0 has been revised to incorporate the changes requested. Section 14.0 Comprehensive Water Plan has been modified to reflect the changes made to the Sanitary Sewer Plan. New language is shown with underlined text and deleted language is shown with a line through the text. See attached excerpts from Chapter IX.

3. Advisory Comment:
Page III-11 states that the City will gain 15062 jobs by 2030, for a total of 43,300. The text, however, does not state what year begins this 15,000 job-growth period. According to Council employment forecasts and estimates, forecasted job growth from 2000-2039, 2006-2030, and all years in-between, is smaller (about 11,000-9,000)

City Response: This paragraph has been corrected - see revised Page III-11 attached. A similar correction was made to Page I-17 which is also attached.

4. Housing (Linda Milashius, 651-602-1541)
The Update is incomplete for housing. The Update acknowledges the City's share of the region's 2011-2020 affordable housing need of 737 units and provides a implementation plan to address its housing goals. However, the Update needs to include a land use table with five-year staging to determine that the City has sufficient land (either vacant or within redevelopment sites) to provide opportunities to address it's share of the region's affordable housing need for the 20100-2020 time period. A "land use table in 5 year stages" can be found online at:

City Response: The City has prepared the attached "Land Use Table In 5-Year Stages" chart to address this item.

5. Land Use (Patrick Boyland 651-602-1438)
The Update is incomplete for land use. The Update describes the Mixed Use Category, but does not indicate what proportion of the total acreage it expects to be allocated to residential development. The Update further divides the Mixed Use Category into two subcategories: Business Oriented Mixed Use Center and Neighborhood Oriented Mixed Use Center. Residential uses would not be allowed in the Business Category, so the Neighborhood Category is of most concern. The City's Update indicates a density range from 8 to 21.78 units per acre would be allowed here, but it does not identify the total acreage for the Neighborhood Oriented Mixed Use Center Category or the proportion of that acreage that would be used for residential purposes. This break out is needed for the Update.

City Response: The Residential Land Availability Table (Figure 19 on attached page II-27) of the Update identifies residential land availability for Rural Residential, Low Density Residential, Medium Density Residential, High Density Residential and Regional Center Residential. All of the Mixed Use lands shown on the 2030 Future Land Use Guide Plan Map are properties where high density residential (Neighborhood Oriented Mixed Use) can occur. The majority of the properties were

designated in the 2000 Comp. Plan as Regional Center Residential and have an underlying zoning of R3C – Regional Center Residential which allows the highest residential densities (21.78 units per acre). See Update page II-35 thru II-37. As part of the Update, the Regional Center Residential category is proposed to be changed to Neighborhood Oriented Mixed Use Center as part of the 2030 Future Land Use Guide Plan Map. The table will be updated as follows:

Figure 19
Residential Land Availability

Land Use Type	Gross Vacant Acres	Net Acres	Density Range (units/acre)	Potential Units	
				Gross	Net
Rural Residential	59	57	0.5 – 1.0	30 - 59	29 - 57
Low Density Residential	67	58	2 - 3.5	134 - 235	116 - 203
Medium Density Residential	3	3	4 - 8.7	12 - 26	12 - 26
High Density Residential	9	9	9 - 14.52	81 - 131	81 - 125
~~Regional Center Residential~~ Neighborhood Oriented MIX	28	28	15 - 21.78	420 - 610	420 - 616
Total				**677 - 1,061**	**658 - 1,027**

Source: Bonestroo

In addition to the development potential for vacant land (shown in Figure 19 above), the city anticipates that some of the 21 Neighborhood Shopping Centers may redevelop by 2030. The city undertook a yield plan analysis to identify what proportion of residential/commercial could be expected should redevelopment occur. Figure 14, Neighborhood Centers Summary Table is located on attached page II-23 of the Update and provides a summary of all 21 Neighborhood Shopping Centers which combined contain 81 acres of land.

Figure 14
Neighborhood Centers Summary Table

Neighborhood Centers				
	Total		Average	
Acres	81	-	4	-
Ground Floor Retail Square Feet	353,097	-	16,814	-
Retail/Office Mix Square Feet	353,097	-	16,814	-
Medium Density Housing Units (8 u/p/a)	324	-	15	-
High Density Housing Units (14 u/p/a)	567	-	27	-
Required Green Space (SF/Acres)	900,167	21	42,865	1.0
Impervious Coverage (SF/Acres)	2,700,502	62	128,595	3.0
Gallons Wastewater	282,422	-	13,449	-
Water Supply	310,644	-	14,794	-
Storm water Ponding (SF/Acres)	540,100	12	25,719	0.6
Parking Stalls	6,019	-	287	-
Transit Trips	639	-	30	-
Trips Generated	22,029	-	1,049	-

The Update contemplates that when any of the 21 Neighborhood Shopping Centers redevelops the land use would change from its current Commercial designation to

Neighborhood Oriented MIX. The assumption is that the proportion of development will result in 1/3 mixed office/retail in the same building; 1/3 retail/commercial with residential above and 1/3 residential. For residential, the density will be calculated over the entire site, ½ at 8 units per acre and ½ at 14 units per acre:

Neighborhood Centers	½ @ 8 u/p/a	½ @ 14 u/p/a
81 ac.	40.5 * 8 u/p/a = **324**	40.5 * 14 u/p/a = **567**

- How many acres in Neighborhood Mixed Use Center Total?

  City Response: There are 192 total net acres of Neighborhood Mixed Use per Figure 23 "2030 Future Land Use Guide Plan Acreage." Of the total 192 net acres, 74 acres are developed with existing residential uses (1,422 residential units) per the Net Residential Density Worksheet submitted with the City's initial application. There are 28 acres of vacant Neighborhood Mixed Use (former Regional Center Residential land use classification) noted on Figure 19 Residential Land Availability table for future high density residential development. The only other site designated in the Update for Neighborhood Mixed Use is the Valley Ridge Mall site which consists of 14.22 net acres.

  In the future, if any of the 20 other Neighborhood Shopping Centers redevelop, the city anticipates that the property would need to be guided then zoned Neighborhood Mixed Use. The yield plans for the Neighborhood Centers showing the development information have been added as per the attached Appendix T.

  Please note that no properties have been designated in the Update for Business Oriented Mixed Use Center. This is a category that may be applied in the future to any of the 15 Satellite Shopping Centers, should they redevelop in the future. At that future date, the site would be guided and zoned for Business Oriented Mixed Use. No residential units would be included in these centers. The Business Oriented Mixed Use is intended to allow for a more broad variety of commercial, office, retail and service type uses than the standard Commercial zoning districts allow. The City currently utilizes a Planned Unit Development zoning tool to accomplish mixed use development. The Business Oriented Mixed Use land use category provides the guide plan mechanism to establish a mix of land use that reflects a more complex and perhaps larger business campus/project. The Satellite Shopping Center yield plan information has been added as per the attached Appendix U.

- How much residential is allowed in the Neighborhood Mixed Use Center?

  City Response: Per Chapter II – Future Land Use Guide Plan, Section 6.1, 33% or 1/3rd of a future Neighborhood Mixed Use Center would be residential. The density would be calculated over the entire site, ½ at 8 units/acre and ½ at 14 units/acre. It is assumed that in a Neighborhood Oriented Mixed Use site, some residential would be stand alone (such as row house/townhomes) while the higher density would likely be condominiums above retail/commercial and could occur in multiple stories. See attached Appendix T for further information.

5. Land Use (Patrick Boyland 651-602-1438)
The Update discusses both gross and net acreages for its land use categories, but it is unclear how the net acreages were calculated. The Update must demonstrate the city used the Council's method for calculating density

City Response: Net density in the Burnsville Update is the land area remaining after open water, right-of-way and parks are removed. The Burnsville net acreage standard is more restrictive than the Metropolitan Council's definition because all right-of-way is excluded, not just arterial right-of-way.

6. Implementation (Patrick Boylan 651-602-1438)
The Update is incomplete for Implementation. The Update needs a copy of the existing zoning ordinance or a detailed description of the zoning districts.

City Response: The City has prepared the attached "City of Burnsville Zoning District Summaries March 2009" to address this item. Also, the definitions on pages I-24& I-25 have been modified and are attached.

7. Transportation (Carol Becker 651-602-1756)
The Update is incomplete for transportation. Information is needed for Traffic Analysis Zone (TAZ) requirements. Please see comments in the "Forecast" section above.

City Response: Figure 25 in the Transportation Plan has been revised to incorporate the requested TAZ information and is attached:

- ***Page VIII-34***

8. Advisory Comments:
The Update includes an extensive section on the City's roadways by their function. There are inconsistencies in the listing and map between what the community shows as "Minor Arterials" and the Transportation Advisory Board (TAB) map. If the City wishes to change the classification of these roadways it must formally submit such a request to the Transportation Advisory Committee-Planning Committee. This is a separate process from the comprehensive plan update effort. Differences between the City's and TAB map include the following:

Roadway	From	To	Burnsville	Metro Council
Southcross Dr	Egan Dr (Co Rd 42)	Burnsville Pkwy	A-Minor Arterial	Local
Burnsville Pkwy	Southcross Dr	Co Rd 5	A-Minor Arterial	Major Collector
Burnsville Pkwy	Scott County Line	Southcross Dr	B-Minor Arterial	Major Collector
Southcross Dr	Egan Dr (Co Rd 42) - west	Portland Avenue	A-Minor Arterial	Local
Southcross Dr	Portland Avenue	Co Rd 42 - east	A-Minor Arterial	Major Collector
150th St/Crystal Lake Rd	Co Rd 5	I-35	B-Minor Arterial	Major Collector
Portland Avenue	Southcross Dr	McAndrews Rd	B-Minor Arterial	Local
Burnhaven Dr	150th Street	McAndrews Rd	B-Minor Arterial	Local
126th St / Dupont Ave S	Co Rd 5	Cliff Rd	Collector	A-Minor Arterial
Embassy Rd	Cliff Rd	Black Dog Rd	N/A	A-Minor Arterial

City Response: The City does not desire to change the functional classification of roadways and the following pages in the Transportation Plan have been revised to correspond to the TAB map and are attached:

- ***Page VIII-11***
- ***Page VIII-12***
- ***Page VIII-13***
- ***Page VIII-19***
- ***Page VIII-20***
- ***Page VIII-39***
- ***Page VIII-40***
- ***Page VIII-41***

9. Advisory Comments:
As advisory comments for the transit section, the Update is missing Route 464 in Figure 20. Also, the fares shown in Figure 21 are incorrect.

City Response: The following pages in the Transportation Plan have been revised to incorporate the requested Route 464 and fares data and are attached:

- ***Page VIII-24***
- ***Page VIII-25***

10. Wastewater (Roger Janzig 651-602-1119)
The Update is incomplete for wastewater. The Update needs to include a sewer map showing the City's existing service area and proposed trunk sewer system through 2030 and ultimate sewer service area. In addition, a table is needed that shows projected flow forecasts for the City for each trunk sewer connection point to the Council's interceptor system for 2010, 2020, and 2030. The Update needs to indicate if the City prohibits the connection of sump pumps, rain leaders, and passive drain tile to the sanitary sewer system.

City Response: Chapter IX – City Services & Facilities Plan, Table of Contents and Section 13.0 has been revised to incorporate the changes requested. Section 14.0 Comprehensive Water Plan has been modified to reflect the changes made to the Sanitary Sewer Plan. New language is shown with underlined text and deleted language is shown with a line through the text. See attached excerpts from Chapter IX.

11. Surface Water Management Plan (Jim Larsen 651-602-1159)
Burnsville updated its Water Resources Management Plan (WRMP) in 2008. Staff requests the City notify the Council of the dates the Lower Minnesota River Watershed District and the Black Dog Watershed Management Organization approved the WRMP. Staff also requests the City send the Council a final version of the WRMP, if it has changed significantly from the plan reviewed in April 2008.

City Response: The Black Dog Watershed Management Organization approved Burnsville's WRMP on June 17, 2008. The Lower Minnesota River Watershed District

approved the Burnsville WRMP on May 1, 2008. The final version of Burnsville's WRMP was submitted on April 16, 2008 to Marcel Jouseau, Metropolitan Council Environmental Services.

Thank you for the opportunity to respond to the initial application review for completeness. We believe that the information contained in this letter and the attached sheets address all of the questions raised by the Metropolitan Council staff and that the Burnsville application should now be complete to begin formal review. If there is additional information needed, please contact me directly at 952-895-4446 or by e-mail at deb.garross@ci.burnsville.mn.us.

Sincerely,

Deb Garross

Deb Garross
City Planner

Attachments:
Chapter VIII – Transportation Plan page VIII-34
Chapter IX – City Services & Facilities Plan:
- Table of Contents
- Section 13.0 Sanitary Sewer Plan
- Section 14.0 Comprehensive Water Plan

Chapter III – Economic Development Plan page III-11
Chapter I – Community Overview page I-17
Land Use Table in 5-Year Stages
Chapter II – Future Land Use Guide Plan page II-27
Net Residential Density Worksheet
Appendix T – Neighborhood Center Yield Plans
Appendix U – Satellite Center Yield Plans
Zoning District Summaries – March 2009
Chapter I – Community Overview pages I-24 & I-25
Chapter VIII – Transportation Plan page VIII-34
Chapter VIII – Transportation Plan pages VIII-11; VIII-12; VIII-13; VIII-19;VIII-20; VIII-39 thru VIII41
Chapter VIII – Transportation Plan page VIII-24 & VIII-25

City Response to Question 1

3. **Mode Choice.** The third step, mode choice is the step where trips between a given origin and destination are separated into different modes of travel including public transit and personal vehicles. The attractiveness of travel by different modes based on various characteristics are estimated to determine their relative usage.

4. **Traffic Assignment.** The fourth step, traffic assignment, assigns trips to specific paths. The particular routes used to travel from each origin to each destination are first determined based on the shortest travel times. The assigned trip volumes are then compared to the capacity of each link to see which, if any, links are congested. If a roadway is congested the travel speed will be less, resulting in longer travel time on that roadway. As a result, trips in the model are shifted to less congested links until there is a balance between travel demand and travel supply on the network.

6.1.2 Land Use Assumptions

Future year land use requires the allocation of socioeconomic data (i.e., population and employment) to individual TAZs. Discussions with the city regarding future land use plans and development proposals were used to assign future population and employment values to the 24 TAZs within Burnsville. Figure 25 - Burnsville TAZ Land Use Information lists the year 2000 and the projected 2030 population and total (retail and non-retail) employment for Burnsville.

Figure 25
Burnsville TAZ Land Use Information

	Population			Households			Total Employment			Retail Employment			Non-Retail Employment		
TAZ	2000	2030	*Change*	2000	2030	*Change*	2000	2030	*Change*	2000	2030	*Change*	2000	2030	*Change*
186	4,222	3,637	*(585)*	1,354	1,641	*287*	189	114	*(75)*	25	25	-	164	114	*(50)*
187	3,024	3,753	*729*	1,290	1,563	*273*	425	46	*(379)*	65	90	*25*	360	340	*(20)*
188	4,208	4,508	*300*	1,535	1,860	*325*	2,114	2,300	*186*	34	-	*(34)*	2,080	2,300	*220*
189	4	4	-	2	2	*0*	1,760	2,164	*404*	240	230	*(10)*	1,520	1,934	*414*
190	6,743	6,943	*200*	2,320	2,811	*491*	1,612	1,797	*185*	-	175	*175*	1,612	1,622	*10*
191	3,645	3,645	-	1,233	1,494	*261*	268	88	*(180)*	-	-	-	268	88	*(180)*
192	-	-	-	-	-	-	1,627	3,100	*1,473*	1,013	2,080	*1,067*	614	1,020	*406*
193	1,423	1,750	*327*	707	857	*150*	3,070	4,170	*1,100*	2,327	2,827	*500*	743	1,343	*600*
194	588	463	*(125)*	185	224	*39*	463	638	*175*	420	485	*65*	43	153	*110*
195	2,071	2,471	*400*	917	1,111	*194*	301	565	*264*	125	145	*20*	176	420	*244*
196	4,473	4,473	-	1,837	2,226	*389*	1,275	1,375	*100*	750	800	*50*	525	575	*50*
197	497	487	*(10)*	195	236	*41*	1,013	3,013	*2,000*	390	800	*410*	623	2,213	*1,590*
198	671	671	-	322	390	*68*	1,209	1,409	*200*	313	509	*196*	896	900	*4*
199	2,881	2,881	-	1,331	1,613	*282*	681	881	*200*	77	200	*123*	604	681	*77*
200	7,468	6,925	*(543)*	2,922	3,540	*618*	1,070	1,170	*100*	50	145	*95*	1,020	1,025	*5*
201	5,019	4,698	*(321)*	1,877	2,274	*397*	706	340	*(366)*	450	165	*(285)*	256	175	*(81)*
202	3,567	5,117	*1,550*	1,792	2,171	*379*	2,856	3,231	*375*	850	975	*125*	2,006	2,256	*250*
203	1,960	1,960	-	762	923	*161*	429	1,429	*1,000*	145	500	*355*	284	929	*645*
204	719	1,955	*1,236*	319	387	*68*	490	1,220	*730*	119	510	*391*	371	710	*339*
205	-	800	*800*	-	-	-	2,279	4,928	*2,649*	1,415	1,678	*263*	864	3,250	*2,386*
206	-	-	-	-	-	-	1,992	2,252	*260*	120	237	*117*	1,872	2,015	*143*
207	708	708	-	403	488	*85*	2,507	3,757	*1,250*	200	800	*600*	2,307	2,957	*650*
208	1,767	2,968	*1,201*	787	954	*167*	356	530	*174*	35	300	*265*	321	230	*(91)*
209	4,563	4,183	*(380)*	1,598	1,936	*338*	3,073	2,783	*(290)*	180	180	-	2,893	2,603	*(290)*
TOTAL	**60,221**	**65,000**	***4,779***	**23,688**	**28,700**	***5,012***	**31,765**	**43,300**	***11,535***	**9,343**	**13,856**	***4,513***	**22,422**	**29,853**	***7,431***

Source: Met Council, City of Burnsville, WSB & Associates, Inc.

Figure 26 - Transportation Analysis Zones (TAZ) Map displays the location of the various TAZs contained within Burnsville.

CHAPTER IX - CITY SERVICES & FACILITIES PLAN

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13.0 SANITARY SEWER PLAN

13.1 Sewer Plan Introduction

The purpose of this~~e~~ chapter~~Comprehensive Sewer Plan~~ is to examine the city's sanitary collection system to assess the capability of the system to provide reliable service, ~~-~~to allow the city to meet projected population levels and planned development and to meet existing and future demands. The update proves included an analysis of planned land uses and anticipated growth and review of historical data realated to sanitary collection system use. By analyzing the capacity, age and material properties of collection pipes, and sanitary lift station components of the Burnsville sanitary collection system, this chapter makes capital improvement recommendations to meet the existing and future needs of the City of Burnsville.

Future capital improvement planning in this chapter~~report~~ forecasts sanitary collection system needs through 2030. Population projections for Burnsville through 2030 indicate moderate expected growth over the planning period. From 2006 to 2030, the city is projected to gain approximately 3,900 persons, representing a 6.5% increase over the 2006 population estimate of 61,048.

The expected collection system improvements resulting from this growth have been considered in this analysis, along with the existing condition of collection system and lift station facilities. These factors form ~~were~~ the basis for recommended capital improvements.

Areas of future development expected to create additional system demands are~~were~~ identified ~~in conjunction with city staff,~~ along with potential sanitary collection system improvements that will allow the system to meet projected demands.

13.2 Infiltration and Inflow Prevention

The City of Burnsville places a high priority on the prevention, detection, and control of water infiltration and inflow into sanitary sewer systems located within Burnsville~~the city~~. All new municipal systems constructed within the city must be designed and installed in accordance with the standard specifications prepared by the City Engineer's Association of Minnesota (CEAM). All private sewer services are inspected by the city for compliance with the Uniform Plumbing Code.

City ordinance 25, dated 06-04-1993, does not permit strm water from sump pumps, foundation drains and roof leaders to discharge into the sanitary system.

The city's public works department maintains a budget to facilitate the televising, inspection, and repair of problem areas throughout the existing system. In conjunction with scheduled street resurfacing improvements, the city systematically inspects and televises all sanitary sewer systems within the project area and includes any necessary repair in the improvement project. A study has been ~~The city has~~ completed ~~a study~~ that analyzed the city sanitary sewer system to identify the extent of infiltration and inflow issues and in conjunction with systematic inspections, sanitary sewer system improvements are planned and placed in the ongoing five year CIP.

13.3 Existing Facilities

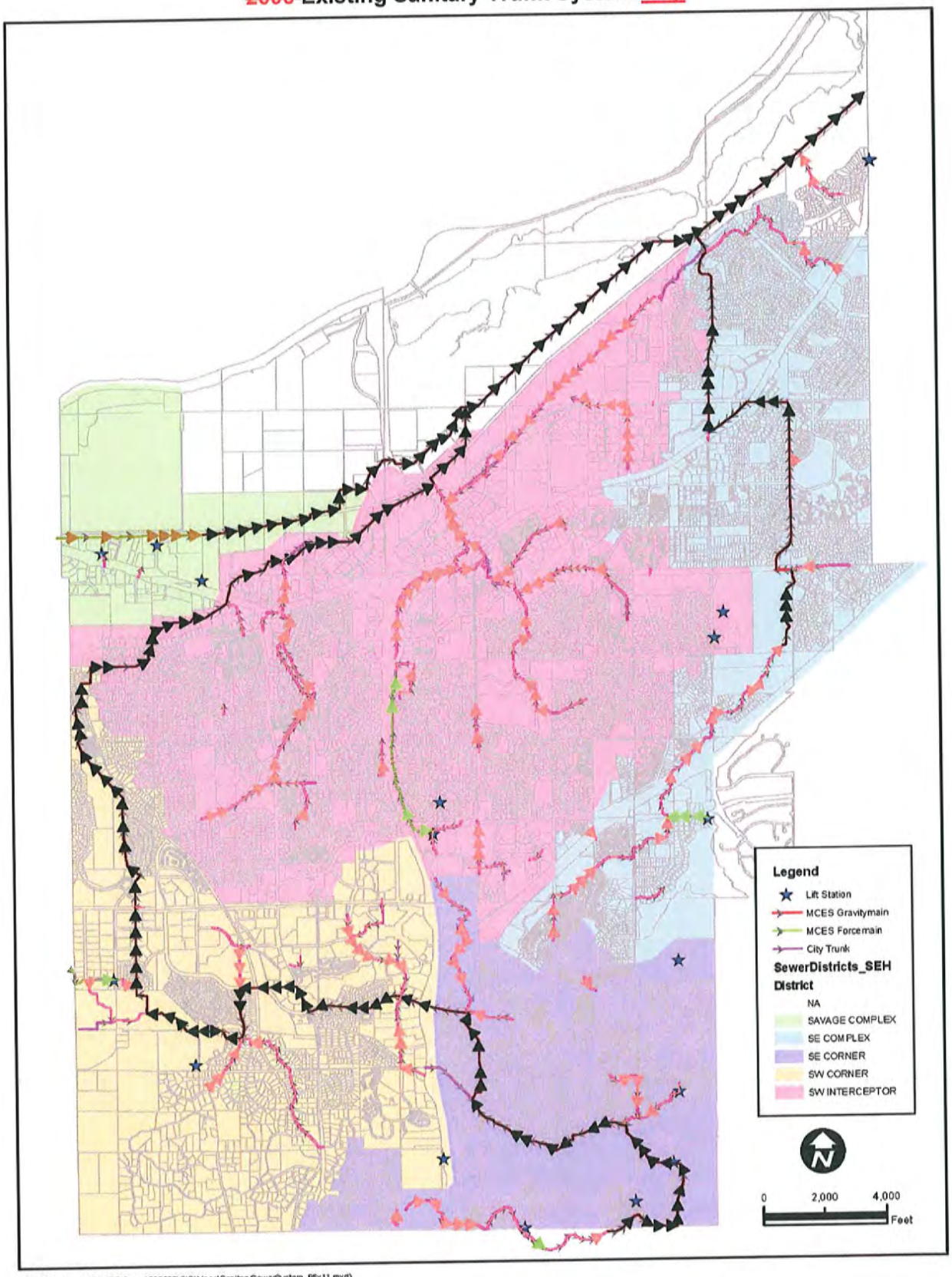
The Burnsville sanitary sewer system has developed under the city's comprehensive sewer plan. Most of the system is now in place and represents approximately 98% build out.. Presently, the city has approximately 210 miles of sanitary sewer lines excluding private sewers, providing services to approximately 24,900 households and businesses. Trunk sewers and fourteen city owned, two private and one MWCC lift stations collect the wastewater and deliver it

to the Metropolitan Council Environmental Services (MCES) interceptor sewers. The MCES interceptor sewers located within the City of Burnsville include the Southwest Interceptor, the Southeast Interceptor, the Savage Interceptor, and the MSB 7030 Interceptor.

With the exception of the extreme southwestern portion of the city, all of Burnsville has access to public sanitary sewer. Developers are responsible for extending sewer service to undeveloped areas. Burnsville actively participates in the ongoing capacity planning work of the MCES. Because the city is located within the Metropolitan Urban Service Area (MUSA), the MCES provides treatment plant and interceptor service for all future development in Burnsville.

Figure 5 - Existing Sanitary Trunk System Map illustrates the location of Metropolitan Council Environmental Services (MCES) Interceptor sewers, city trunk sanitary sewers and lift station sites.

Figure 5
~~2006~~ Existing Sanitary Trunk System Map



Map Document: (S:\AE\B\Burns\080300\GIS\Maps\SanitarySewerSystem_85x11.mxd)
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Figure 6 - Sanitary Lift Stations identifies ~~lists~~ the sanitary lift stations and their ownership within ~~the City of~~ Burnsville.

Figure 6
Sanitary Lift Stations

Lift Station	Ownership	Lift Station	Ownership
Menards	Private	Savage	City
Washburn	City	McAndrews	City
Meadow Acres	City	Sodamka	City
145th Street	City	Crystal Lake	MWCC
Woods Trail	City	Terrace Oaks	City
Maple Island*	City	Alimagnet	City
Bluebill Bay	City	Buck hill	City
Keller Lake	City	Rivers Edge	Private
Echo Valley	City	Forest Park	City

~~* Jointly owned with the City of Lakeville~~

The MCES Southwest Interceptor collects waste water from much of the southern and western areas of the city, as well as from parts of the adjoining communities of Lakeville, Savage, and Credit River Township. The Southeast Interceptor serves the northeastern and east central areas of the city, as well as a portion of Apple Valley. The MCES Savage Interceptor serves most of Savage and a portion of northeastern Burnsville. All of the MCES Interceptors flow north and eastward, where they connect with the MSB 7030 Interceptor, which delivers the waste to the MCES Seneca Wastewater Treatment Plant in Eagan. Under a contract with the city, MCES provides and maintains the interceptor sewers.

With the exception of the extreme southwestern portion of the city, all of Burnsville has access to public sanitary sewer. Developers are responsible for extending sewer service to undeveloped areas. Burnsville actively participates in the ongoing capacity planning work of the MCES. Because the city is located within the Metropolitan Urban Service Area (MUSA), the MCES provides treatment plant and interceptor service for all future development in the city.

The existing sanitary collection system is a well maintained system that is a middle-age system. The average system age is shown in the following Figure 7 - Existing Sanitary Sewer (Sum Pipe Length – Miles).

Figure 7
Existing Sanitary Sewer (Sum Pipe Length – Miles)

Material	Year Installed								Grand Total	% of System Total
	Before 1965	1965-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1994	Unknown		
Unknown Total	0.00	0.00	1.08	2.61	0.71	0.56	0.00	1.54	**6.49**	**3.1%**
PVC Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	**0.02**	**0.0%**
CIP Total	0.27	1.43	0.07	0.38	0.00	0.00	0.00	0.53	**2.68**	**1.3%**
CISP Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	**0.03**	**0.0%**
DIP Total	0.29	0.34	1.01	0.00	0.81	1.17	0.09	0.98	**4.69**	**2.3%**
PEP Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	**0.06**	**0.0%**
PRV Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	**0.05**	**0.0%**
PVC Total	2.28	3.54	1.90	15.78	17.39	23.51	1.55	12.92	**78.86**	**37.9%**
RCP Total	3.54	0.57	3.48	4.17	1.70	1.38	0.00	1.77	**16.61**	**8.0%**
RMP Total	0.00	0.00	0.00	0.10	0.00	0.06	0.00	0.27	**0.43**	**0.2%**
SF Total	1.13	0.00	0.17	0.00	0.00	0.00	0.00	0.00	**1.30**	**0.6%**
VCP Total	33.90	26.94	21.73	6.36	0.37	0.06	0.19	6.70	**96.26**	**46.3%**
VSP Total	0.00	0.06	0.17	0.06	0.00	0.00	0.00	0.31	**0.60**	**0.3%**
Grand Total	**41.40**	**32.88**	**29.60**	**29.47**	**20.98**	**26.75**	**1.83**	**25.18**	**208.08**	**100%**
% of System Total	**19.9%**	**15.8%**	**14.2%**	**14.2%**	**10.1%**	**12.9%**	**0.9%**	**12.1%**		

Note: Materials listed above: PVC Poly vinyl chloride; CIP Cast Iron Pipe; CISP Cast Iron Soils Pipe; DIP Ductile Iron Pipe; PEP Poly ethylene pipe; RCP Reinforced Concrete Pipe; RMP Rigid Metal Pipe; SF Sand Formed cast iron; VCP Vitrified Clay Pipe; and VSP Vitrified Structural Pipe

With forty-one percent of the system greater than thirty years old the city will need to increase the systematic inspection and maintenance on the older portions of the system. Forty-six percent of the system is vitrified clay pipe and this piping system is problematic from the point of root intrusion and infiltration as a result of the more frequent pipe joints. The associated maintenance requirements for collection pipe of this type and age begin to escalate after fifty years of service. Recent advancements in sewer lining systems offer affordable solutions to the problems as they develop.

The current sewer rehabilitation will~~should~~ continue but at a rate consistent with the schedule previously discussed and begin as soon as fiscally possible. ~~It is recommended that~~ T~~t~~elevising will be concentrated in VCP (vitrified clay pipe areas) to ~~for the first three years to~~ develop a prioritization for the continued rehabilitation program. This program would be prioritized following the year after the first areas are televised. Once a prioritization is developed, the city may complete larger portions of the program annually to accelerate the rehabilitation program

13.4 Sewer Rehabilitation Cost ~~13.3.1 Sewer Rehabilitation Cost~~

It is estimated that 46% of the city's 30-40 year old clay pipe may start experiencing root intrusion and infiltration. A rehabilitation program to line two-thirds of the city's clay pipe results in a total cost of approximately $9.7 million. Lining the entire clay system would cost approximately $14.5 million. A budgetary number of $150,000-165,000 per mile was used to estimate the cost of lining VCP sewers.

Reconstruction of sewers often results in costs that approach 4-6 times the cost of lining. The amount of reconstruction cannot be determined without a review of televising records. Areas that are planned for street reconstruction or major rehabilitation should be reviewed to determine if reconstruction of the sewer would be a feasible addition to the street project.

13.54 Existing Water Demands

The Burnsville water utility records indicate that in 2006, the average daily (AD) water demand for the complete system was 8,155,424 gallons (5,663 gpm). The maximum day (MD) demand for 2006 was 18,600,988 gallons (12,917 gpm).

Figure 8
Summary of Water Usage

Year	Average Daily Water Use (gpd)	Maximum Day Volume (gpd)	Date of Maximum Day	Maximum Day Peaking Factor
2007	7,988,907	21,421,000	7/30	2.7
2006	8,155,424	18,600,988	7/9	2.3
2005	7,210,712	19,204,398	8/16	2.7
2004	7,418,586	16,618,569	8/31	2.2
2003	8,234,712	21,229,998	8/17	2.6
2002	7,364,934	11,763,174	7/11	1.6

The Maximum Day Peaking Factor is the ratio of the maximum day demand rate to the average daily demand rate. Seasonal water usage during the winter months of January through March are indicative of the average daily sewer flow versus average demand flow for the water system. The winter month flows for the last five years have been examined and an average flow rate for wastewater during those months will be utilized for planning purposes.

13.65 Service Area Update

13.65.1 Population Trends

Population projections through 2030 are shown in Figure 9 – Sewered Population Projections through 2030. These population projections are taken from the Metropolitan Council, and have been derived using a basic cohort-component model. Note that the projected populations are those of the projected sewered areas.

Figure 9
Sewered Population Projections through 2030

Location	Population			Households			Employment		
	2010	2020	2030	2010	2020	2030	2010	2020	2030
Burnsville	60,800 ~~61,400~~	62,400 ~~63,000~~	64,400 ~~65,000~~	24,952 ~~25,200~~	26,778 ~~27,000~~	28,500 ~~28,700~~	37,700	41,200	43,300

13.65.2 Projected Water Demands

The water demand projections used in this study are based on population projections, and are also presented in Figure 10 - Projected~~Estimated~~ Water Demands.

Future projected populations were multiplied by per capita demands to estimate future average day water use. The value for per capita demand used in the calculations in Figure 10 - Projected~~Estimated~~ Water Demands was based on the historical demand. The average per capita demand over the previous five years was 126 gpd. The highest of the previous five years was 136 gpd, experienced in 2003. For the purpose of projections, 136 gpd was used in this study in order to produce a conservative estimate of future water demands for planning.

The projected maximum day water demands from the water comprehensive plan were determined by multiplying the projected Average Day Demand by 2.7 (experienced in 2005~~7~~).

This projection then represents the maximum daily water demand expected during this planning period.

Figure 10 - Projected~~Estimated~~ Water Demands shows a projected average day demand of 8.840 MGD for 2030. This represents an increase of approximately 8% over current demand levels.

Figure 10
Projected~~Estimated~~ Water Demands

Year	Projected Population	Projected Average Day Demand (MGD)	Projected Maximum Day Demand (MGD)
2010	61,400	8.350	22.546
2020	63,000	8.568	23.134
2030	64,400~~65,000~~	8.840	23.868

This water demand can be utilized to develop sanitary sewer flow comparisons for future system planning. For planning purposes population based wastewater flow can be projected utilizing 75 gallons per day (gpd) and 25 gallons per day (gpd) per employee. This will result in projected flow values as shown in Figure 11 - ~~Future~~ Sanitary Sewer Projected~~Estimated~~ Daily Average Flows (Sewered):

Figure 11
~~Future~~ Sanitary Sewer Projected~~Estimated~~ Daily Average Flows (Sewered)

Year	Projected Population	Projected Average Daily Flow(MGD) per capita @ 75gpd	Projected Average Daily Flow(MGD) per Employee @25gpd	Projected Average Daily Flow(MGD) Total
2010	61,400	4.605	0.943	5.593
2020	63,000	4.725	1.030	5.755
2030	64,400~~65,000~~	4.875	1.083	5.958

Based on a comparison of Figure 11~~2~~ – Sanitary Sewer Projected Daily Average Flows (Sewered) to Figure 10, Projected Water Demands~~Future Development Areas and Estimated Daily Average Flows projected sanitary sewer average daily flow to Figure 10 - Estimated Water Demands projected average day demand flow from the water system we see~~ the following sanitary flow to water demand ratios are foreseen.

Figure 12
Ratios – Sanitary Flow to Water Demand~~Future Development Areas and Estimated Daily Average Flows~~

Year	Projected Average Daily Flow(MGD) Total	Projected Average Day Demand (MGD)	Percentage AVG. Daily Flow/ Average Day Demand
2010	5.593	8.350	67.0%
2020	5.755	8.568	67.2%
2030	5.958	8.840	67.4%

Figure 12~~3~~ – Ratios – Sanitary Flow to Water Demand~~MCES Future Wastewater Daily Average Flows Projections~~ indicates that the percentage of projected average sewer flow will gradually

increase as a percentage of the future water demand based on population and employee projections with-in the city. The current MCES Wastewater Flow Projections found in the MCES Water Resources Management Policy Plan, Appendix B-1.b (Provide link here to Appendix O), are indicated in Figure 13 – MCES Future Wastewater Daily Average Flows Projections.

Figure 13
MCES Future Wastewater Daily Average Flows Projections

	2010 (MGD)	2010 (MGD)	2030 (MGD)
Burnsville	5.82	5.84	5.87

The calculated projected average daily sanitary sewer flows based on population and employees within the City of Burnsville for planning milestone years 2010 and 2020 are within the range of the MCES published flow projections. The 2030 planning milestone year calculated average daily sanitary sewer flow of 5.958 MGD is slightly above the MCES published flow projection by approximately 1.5 % of the MCES published flow projection of 5.87 MGD. This projected variance will have a slight impact on the planning years from 2020 to 2030 as future development becomes more certain. Discussions between the City of Burnsville and Metropolitan Council will be necessary to develop a consensus on the 2030 future daily flow projections.

The 2030 average sewage flow generated from the City of Burnsville is projected by the Metropolitan Council to be 5.87 MGD. The Burnsville flows have been divided into segments tributary to portions of the MCES Interceptor system per Figure 14 – Burnsville Contribution from Sub-district Sewersheds: ~~At projected 2030 year flow, the adjoining communities that are tributary to the systems within Burnsville are estimated to contribute an additional 4.28 MGD as shown in Figure 14 – 2030 Average Sewer Flows by Community. (Note: The population figures used are those that contribute sewer flows to Burnsville.)~~

Figure 14
Burnsville Contribution from Sub-district Sewersheds

Burnsville Sewered Flows – Planned Contribution from Sewershed				
Point Flow Location	2007	2010	2020	2030
MRQ	0.33 MGD	0.25 MGD	0.18 MGD	0.11 MGD
Savage Complex	0.84 MGD	0.61 MGD	0.37 MGD	0.13 MGD
SE Complex	0.54 MGD	0.68 MGD	0.83 MGD	0.98 MGD
SE Corner	0.31 MGD	0.37 MGD	0.42 MGD	0.48 MGD
SW Corner	1.37 MGD	1.48 MGD	1.59 MGD	1.71 MGD
SW Interceptor	2.44 MGD	2.48 MGD	2.51 MGD	2.55 MGD
Grand Total	**5.82 MGD**	**5.87 MGD**	**5.91 MGD**	**5.96 MGD**

At projected 2030 year flow, the adjoining communities that are tributary to the systems within Burnsville are estimated to contribute an additional 4.28 MGD as shown in Figure 15 – Adjoining Community Contributing Community Flows

Figure 15
Adjoining Community Contributing Community Flows

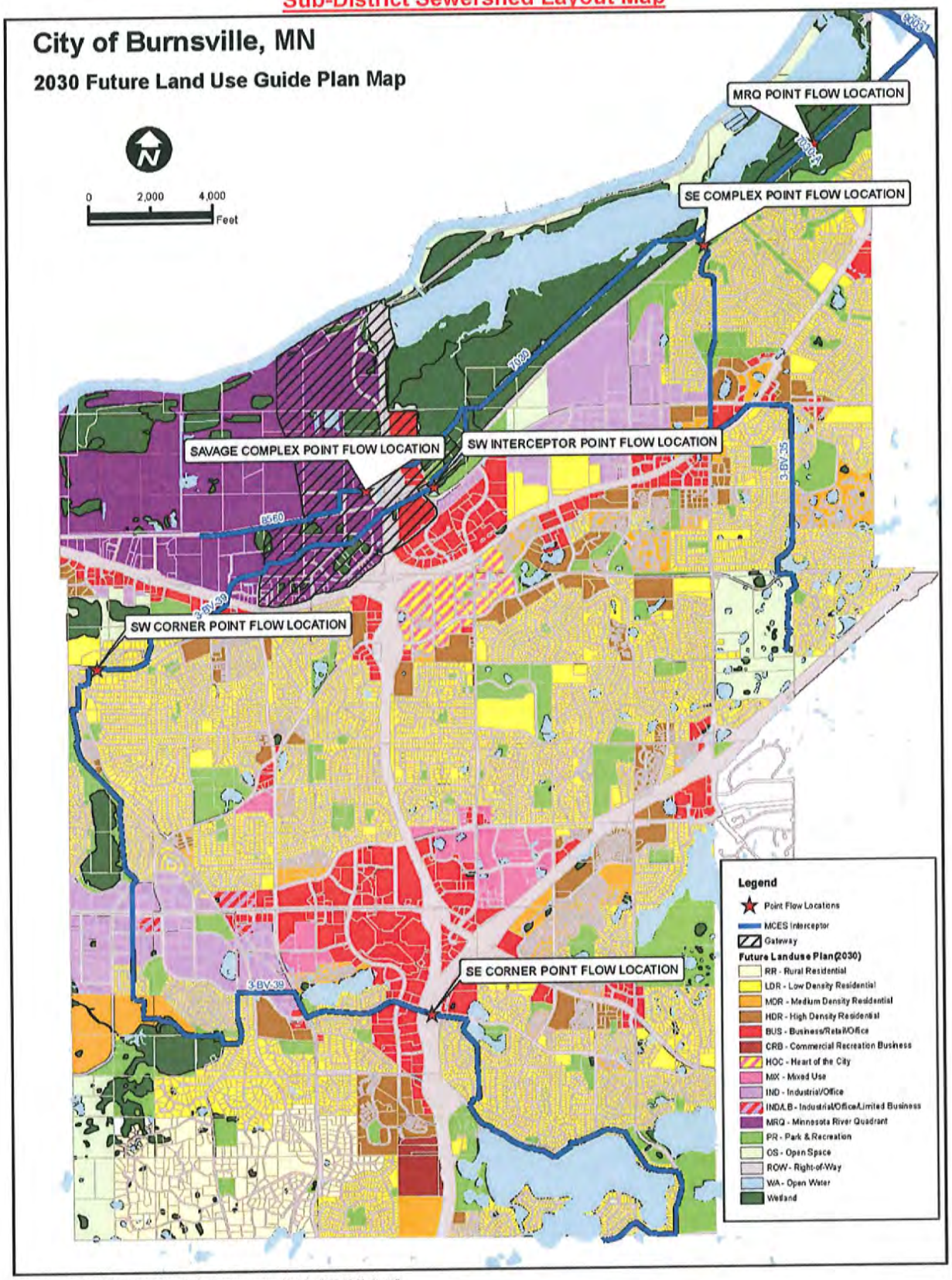
Location	Population	Employment	Projected Population AD flow (MGD)	Projected Employment AD flow (MGD)	Projected 2030 Avg. Daily flow (MGD) Total
	2030	2030	2030	2030	2030
Burnsville	64,400	43,300	4.88	1.08	5.96
Lakeville	8,600	1,440	0.645	0.04	0.68
Savage	42,700	8,700	3.2025	0.22	3.42
Apple Valley	2060	990	0.15	0.02	0.18
Totals	**117,760**	**54,430**	**8.8775**	**1.36**	**10.24**

~~**Figure 14**~~
~~**2030 Average Sewer Flows by Community**~~

~~Location~~	~~Population~~	~~Employment~~	~~Projected Population AD flow (MGD)~~	~~Projected Employment AD flow (MGD)~~	~~Projected 2030 Avg. Daily flow (MGD) Total~~
~~Burnsville~~	~~64,400~~	~~43,300~~	~~4.83~~	~~1.08~~	~~5.91~~
~~Lakeville~~	~~8,600~~	~~1,440~~	~~0.645~~	~~0.04~~	~~0.68~~
~~Savage~~	~~42,700~~	~~8,700~~	~~3.2025~~	~~0.22~~	~~3.42~~
~~Apple Valley~~	~~2060~~	~~990~~	~~0.15~~	~~0.02~~	~~0.18~~
~~**Totals**~~	~~**117,760**~~	~~**54,430**~~	~~**8.83**~~	~~**1.36**~~	~~**10.19**~~

Mapping of the Burnsville sub-district sewersheds are indicated by the following layout, Figure 16 – Sub-District Sewershed Layout Map.

Figure 16
Sub-District Sewershed Layout Map



Map Document: (S:\AE\B\Burns\080300\GIS\Maps\Future_Landuse_Map_Nov2008_85x11_dc.mxd)
4/8/2009 -- 1:30:29 PM

The Burnsville sewered flow projections for the six sub-districts identified in Figure 14 - Burnsville Contribution from Sub-district Sewersheds, when combined with the contributing community 2030 flow projections are indicated in the following Figure 17 – Contributing Community Flow Projections by Interceptor.

Figure 17
Contributing Community Flow Projections by Interceptor

Interceptor	Sewershed	2010	Total	2020	Total	2030	Total
3-BV-39	City of Lakeville	0.68 MGD		0.68 MGD		0.68 MGD	
	Burnsville SE Corner	0.37 MGD		0.42 MGD		0.48 MGD	
	Burnsville SW Corner	1.48 MGD		1.59 MGD		1.71 MGD	
	City of Savage*	3.00 MGD		3.00 MGD		3.00 MGD	
	Burnsville SW Interceptor	2.48 MGD	**8.00 MGD**	2.51 MGD	**8.21 MGD**	2.55 MGD	**8.41 MGD**
8560	City of Savage*	0.42 MGD		0.42 MGD		0.42 MGD	
	Burnsville Savage Complex	0.00 MGD	**0.42 MGD**	0.00 MGD	**0.42 MGD**	0.00 MGD	**0.42 MGD**
3-BV-35	City of Apple Valley	0.18 MGD		0.18 MGD		0.18 MGD	
	Burnsville SE Complex	0.68 MGD	**0.86 MGD**	0.83 MGD	**1.01 MGD**	0.98 MGD	**1.16 MGD**
7030	Burnsville MRO	0.00 MGD	**9.29 MGD**	0.00 MGD	**9.64 MGD**	0.0 MGD	**9.99 MGD**
3-BV-39		**8.00 MGD**		**8.21 MGD**		**8.41 MGD**	
8560		**0.42 MGD**		**0.42 MGD**		**0.42 MGD**	
3-BV-35		**0.86 MGD**		**1.01 NGD**		**1.16 MGD**	
7030		**9.29 MGD**		**9.64 MGD**		**9.99 MGD**	

**City of Savage Estimate*

Figure 17 – Contributing Community Flow Projections by Interceptor, applies the contributing community projected flows for 2030 to each community listed. Adjustments for years 2010 and 2020 may need to be made to reflect adjustment made by the individual community comprehensive plan updates.

13.7 Facility Improvements~~13.5.3 Facility Improvement Recommendations~~
~~The city should continue to inspect and analyzed the sanitary sewer system to identify the extent of infiltration and inflow issues associated with the older portions of the system and with the systematic inspections sanitary sewer system improvements be placed in the ongoing five year CIP.~~

13.7.1 Collection System ~~Improvements~~: The city will continue systematic inspection of the older portion of the sanitary system and address identified issue and incorporate rehabilitations plans into the ongoing five-year CIP.

13.7.2 Pumping~~ Improvements~~: The city's lift stations will ~~continue to~~ require increasing maintenance attention as individual lift stations approach the end of their useful life cycle. Replacement costs will be~~are~~ planned for and included in the five-year CIP.

13.8 Future Development

The conceptual Minnesota River Quadrant~~MRQ~~ (MRQ) planned development is identified on Figure 18 – MRQ Concept Development Plan. ~~by the following Figure 15 – MRQ Areas A-D. The planned use by areas (A-D) is summarized in Figure 16 – Conceptual MRQ Uses by District (in square feet).~~

~~**Figure 15**~~
~~**MRQ Areas A-D**~~

Figure 18
MRQ Concept Development Plan

The conceptual MRQ planned land uses by area (A-D) (see Figure 18 for reference to area locations), are summarized in Figure 19 – Conceptual MRQ Uses by District as follows:

Figure 19~~6~~
Conceptual MRQ Uses by District (in square feet)

	Office/Office Showroom	Commercial/ Mixed Use	Industrial	Medical Technical Campus	Town-homes	Multi-family	Hotel
Area A	612,588						
Area B	1,419,642	128,850			88 units	390 units	775 rooms-suites; 117,600sf
Area C	945,048	82,473	322,932	1,012,937			
Area D	247,286	254,936	183,965				
Total	**3,224,564**	**466,259**	**506,897**	**1,012,937**	**88 units**	**390 units**	**775 rooms-suites; 117,600sf**

The ~~is~~ planned land uses ~~usage~~ in the MRQ will have a minimal impact on the average daily flow values incorporated in the MCES allocation previously discussed. The resultant average daily flow from the proposed development is approximately 0.1 mgd and is consistent with the planning levels indicated in Figure 11, ~~12 - Future Development Areas and~~ Estimated Average Daily Sewer Flows and Figure 13 - MCES Future Wastewater Daily Average Flows Projections.

The only other area in Burnsville currently not served by sewer service is the very southwest residential area. This area of Burnsville is currently served by individual wells and septic systems. The area is zoned to have a minimum of 1 acre lots. City ordinance requires that the cost of water and sanitary sewer service provided to the area must be totally borne by the residents requesting such service. An analysis performed shows that, if ever developed, this area would yield about 300 single family residences. The city sewer mains can easily accommodate this area and will have a minimal impact on the average daily flow values incorporated in the previously discussed MCES allocation.

13.9 Analysis of Ultimate Service Area with Proposed Improvements

13.9.1 Economic Analysis

This section has been prepared to assist in setting area charges and connection charges for the costs associated with lift stations, and trunk sewer main over sizing. Although some of these costs could be recovered through sewer rates, this section assumes that all recovery of facility costs will be through connection charges (collection). Figure 20 identifies the 2009 Trunk Sanitary Sewer Connection Charges.

Figure 20
2009 Sewer Connection Charges

Type of Use	Rate
Single Family, Duplex, Townhouse, Mobile Home	$1,288/unit
Multiples (80% 0f Single Family)	$1,029/unit
Commercial/Industrial, Churches, Schools, Hospitals/Nursing Homes	$801/unit
HOC-1 Residential	$1,029/unit
HOC-1 Mixed Use	Total of Applicable, Mixed Use fees

The cost figures presented in the previous table represent a reasonable cost for current operations. Should the city expand the planned normal maintenance to a planned lining program the cost will have to be borne through the sewer rate structure at a level commensurate with the miles of sewer lining per year.

14.0 COMPREHENSIVE WATER PLAN

14.1 Introduction

The purpose of the Comprehensive Water Plan is to examine the city's water system to assess the capability of the system to provide reliable and safe drinking water to meet existing and future demands. By analyzing the capacity and hydraulic properties of supply, treatment, distribution, and storage components of the Burnsville water system, this report makes capital improvement recommendations to meet the existing and future needs of the City of Burnsville. For reference to surface water management and the city storm water management system refer to Chapter VI – Natural Environment Plan. (Provide link to Chapter VI, Section 6.0 WRMP here).

Future capital improvement planning in this report forecasts water system needs through 2030. Population projections for Burnsville through 2030 indicate moderate expected growth over the planning period. From 2006 to 2030, the city is projected to gain approximately 3,900 persons, representing a 6.5 percent increase over the 2006 population estimate of 61,048.

The expected water demands resulting from this growth have been considered in this analysis, along with the existing condition of water supply, treatment, distribution, and storage facilities. Hydraulic analyses were also used to analyze system operations. These factors were the basis for recommended capital improvements.

A computer model of Burnsville's water distribution system has been prepared. In addition, regions of future development expected to create additional system demands were identified in conjunction with city staff, along with potential water system improvements that will allow the system to meet projected demands.

The computer model was developed using H2OMAP Water GIS Suite 6.0. The resultant product is a tool that can be used for hydraulic analysis of the water system and scenario planning. The model can also be built-upon in the future if so desired to analyze water quality throughout the distribution system. Some of the potential uses of this analysis include the following:

- Identify future locations of critical supply and storage facilities so land can be purchased and/or set aside before development begins in the designated area.
- Provide a long range plan for water system upgrades/expansion so that proposed construction projects include properly sized water mains to allow for future development needs.
- Identify deficiencies in the water system and corresponding improvements to reduce or eliminate these deficiencies.
- Provide a document to support loan/grant applications for future needs of the water system.

14.2 Existing Facilities

The Burnsville water system is composed of storage, supply, treatment, and distribution components as described in the following sections. Storage and supply facilities are listed in Figure 21~~17~~ - Existing Facilities.

Figure 21~~17~~
Existing Facilities

SUPPLY

Well No.	Location	Capacity (gpm)	Capacity (MGD)	Geologic Unit
1	201 Cliff Road W.	800	1.152	Jordan
2	101 Cliff Road W.	1200	1.728	Jordan
3	800 Cliff Road E.	1200	1.728	Jordan
4	12320 River Ridge Blvd.	1200	1.728	Jordan
5	12330 River Ridge Blvd.	1200	1.728	Jordan
6	150 Cliff Road E.	1200	1.728	Jordan
7	101 River Ridge Ct.	1200	1.728	Jordan
8	51 River Ridge Ct.	1200	1.728	Jordan
9	600 Cliff Road E.	1500	2.16	Mount Simon-Hinckley
10	600 Cliff Road E.	1200	1.728	Jordan
11	12295 Nicollet Ave.	1500	2.16	Mount Simon-Hinckley
12	990 Burnsville Pkwy. E.	1200	1.728	Jordan
13	590 Burnsville Pkwy. E.	1200	1.728	Jordan
14	1200 Burnsville Pkwy. E.	1100	1.584	Mount Simon-Hinckley
15	1200 Burnsville Pkwy. E.	1500	2.16	Jordan
16	2100 Burnsville Pkwy E.	1700	2.448	Jordan
17	2349 Burnsville Pkwy E.	1200	1.728	Jordan
Kraemer Quarry Intake 1	Kraemer Quarry	1400	2.016	Surface Water
Kraemer Quarry Intake 2	Kraemer Quarry	1400	2.016	Surface Water

Total Capacity	24,100	34.704
Firm Capacity	21,200	30.528

* Firm capacity is defined as the pumping capacity that can be provided with the largest two supply pumps out of service.

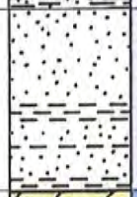
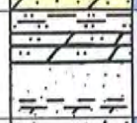
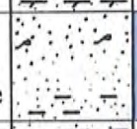
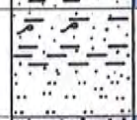
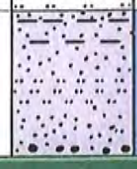
STORAGE

Facility Name	Location	Type of Structure	Overflow Elevation (ft)	Storage Capacity (MG)	Usable Storage (MG)
Water Treatment Plant	Water Treatment Plant	Clear well		7.0	7.0
Nicollet Reservoir	Nicollet Ave. & civic Center Pkwy.	Below Ground Reservoir		1.8	1.8
Buck Hill	Buck Hill Rd.	Standpipe	1218	1.7	1.0
Colonial Hills	35W & 136th St. W.	Standpipe	1150	1.1	0.5
Heather Hills	Heather Hills Dr.	Standpipe	1150	7.0	2.9
Total				**18.6**	**13.2**

Figure 22~~18~~ – Ground Water Supplies provides an illustration of Dakota County Ground Water and Geology.

Figure 22~~48~~
Ground Water Supplies

Ground water supplies 99 percent of total domestic, municipal, and industrial water used in Dakota County.

Geologic Formation	General Lithology	Presence & Use of Water
Quaternary deposits Surface deposits of sand and gravel; erodes easily		May contain water used for domestic, commercial, and irrigation purposes Easily contaminated
Decorah Shale Clay-like shale with thin fossil-bearing limestone		Helps to protect underlying aquifers from contamination
Platteville and Glenwood Formations Fossil-bearing limestone and sandy shale		Supplies very limited amounts of water to northern Dakota County
St. Peter Sandstone Poorly cemented, granular sandstone		Supplies limited amounts of water to Dakota County Easily contaminated in central and southern portions of the County
Prairie du Chien Formation Limestone		Supplies water for domestic use
Jordan Sandstone Poorly cemented, granular sandstone		Primary source for municipal, industrial and high capacity irrigation wells
St. Lawrence-Franconia Formation Shaley sandstone or siltstone		Produces small amounts of water in eastern Dakota County
Ironton-Galesville Sandstone Silty to coarse-grained sandstone		Produces water to supplement flow in some high capacity industrial wells
Eau Claire Formation Siltstone, fine sandstone, and shale		Does not contain water
Mt. Simon-Hinkley Formation Fine to coarse-grained sandstone		The deepest high-yielding aquifer in Dakota County Protected for future use with a restriction on new well drilling

DAKOTA COUNTY GROUND WATER AND GEOLOGY

14.2.1 Storage

Storage facilities on a water system allow a more constant supply during variable demand conditions. During high demands, when water customers are using a greater volume of water, part of that demand can be met by storage reserves in addition to direct pumping from wells. During low demand conditions, the well pumps can continue to operate, with excess supply going to fill storage for later withdrawal. In addition to this operational function, storage tanks can serve as an emergency water source in the case of a supply failure (i.e. power outage, well maintenance, etc.). They also increase the amount of water available during a fire.

Burnsville currently has five storage tanks, including below-ground reservoirs and above-ground standpipes. Water is pumped from the below-ground reservoirs into the distribution system. The standpipe facilities are operated on gravity, with overflow levels set in order to generate the desired pressure in the system. The levels of these tanks control the hydraulic grade line (pressures) of the system.

14.2.2 Supply and Treatment

Raw water pumped from seventeen wells currently supplies the Burnsville water system. These wells draw water from the Jordan and Mount Simon-Hinckley groundwater aquifers as indicated in Figure 17 – Existing Facilities. The capacity of the wells varies from 900 to 1,700 gallons per minute (gpm). In addition, two raw water wells are designed to pump surface water from the Kraemer Quarry to a new surface water treatment plant adjacent to the existing water treatment plant. The anticipated average daily volume of water to be pumped from the Kraemer Quarry has been included as part of the existing supply capacity for the purpose of this plan. The Kraemer Quarry pumps are designed to pump an average flow rate of 2,800 gpm or 4 MGD. This results in a total supply capacity of approximately 22,300 gpm or 32.1 million gallons per day (MGD). The firm capacity is 19,400 gpm (27.9 MGD).

Firm capacity is that which can be supplied reliably, even during maintenance activities or an emergency situation. At times, two wells or intake pumps may be out of service simultaneously on the Burnsville water system. Therefore, the firm capacity of the system used for this study is that which can be sustained when the largest two pumps are out of service.

Raw water pumped by these wells is pumped to the existing water treatment facility on River Ridge Court near Cliff Road. The existing treatment plant removes iron minerals from the raw water, disinfects the water, and adds fluoride to the water for dental health. The following processes are utilized:

- Aeration and chlorination for oxidation of minerals
- Detention basin provides contact time for the oxidation process
- Gravity filtration through dual-media rapid sand filters
- Post-chlorine feed for disinfection prior to clear well storage
- Hydrofluorosilicic acid (fluoride) feed

High service pumps deliver water from the below-ground clear well storage at the water treatment plant to the water distribution system. The pumping station consists of six high service pumps, two with a capacity of 6,300 gpm, one with a capacity of 5,500 gpm, and three with a capacity of 3,500 gpm when all pumps operate together in parallel. The total capacity of the high service pumping station is therefore 28,600 gpm (41 MGD). The firm capacity of the high service pumping station is 22,300 gpm (32 MGD). The pumping station has room for expansion with one additional pump in the future as needed. The pumps are controlled automatically based on water levels in the Colonial Hills Standpipe and the Nicollet Reservoir.

The effective treatment capacity of the existing water treatment plant is 18 MGD. The treatment capacity of the proposed surface water treatment plant will increase the city's overall treatment capacity to approximately 24 MGD.

14.2.3 Distribution System

The Burnsville water system is comprised of water mains ranging in size from 6 inches to 36 inches in diameter as shown in Figure 20 - Existing Distribution System Map. The system serves an elevation range of approximately 709 feet to 1112 feet.

Pressure Zones

The Burnsville system is divided into eleven pressure zones. This allows the city to optimize water pressures over changing elevations and topography. These pressure zones are listed in Figure 19 - Water Pressure Zones with their design hydraulic grade.

The Central Area Pressure Zone is served by the Colonial Hills Standpipe. The Central Area Pressure Zone, which receives water from the water treatment plant, supplies water to the Minnesota River, River Hills, Hayes, Rambush, and the Sunset Pond Areas through pressure reducing valves (PRVs). PRVs are valves that reduce pressure to a pre-determined level on the downstream side.

The Central Area Pressure Zone also supplies water to the South Central Area via the Nicollet Reservoir and Booster Station. The Heather Hills and Buck Hill Standpipes provide elevated storage for the South Central Area. The South Central Area provides water for the Carriage Hills, Yellowstone, Crystal Lake, and Northview Areas through PRVs.

Figure 23~~19~~
Water Pressure Zones

Pressure Zone Name	Hydraulic Grade (ft)
Central Area	1,150
South Central Area	1,218
Crystal Lake Area	1,150
Carriage Hills Area	1,120
River Hills Area	1,035
Rambush Area	990
Hayes Area	990
Minnesota River Area	950
Sunset Pond Area	1,020
Yellowstone Area	1,120
Northview Area	1,120

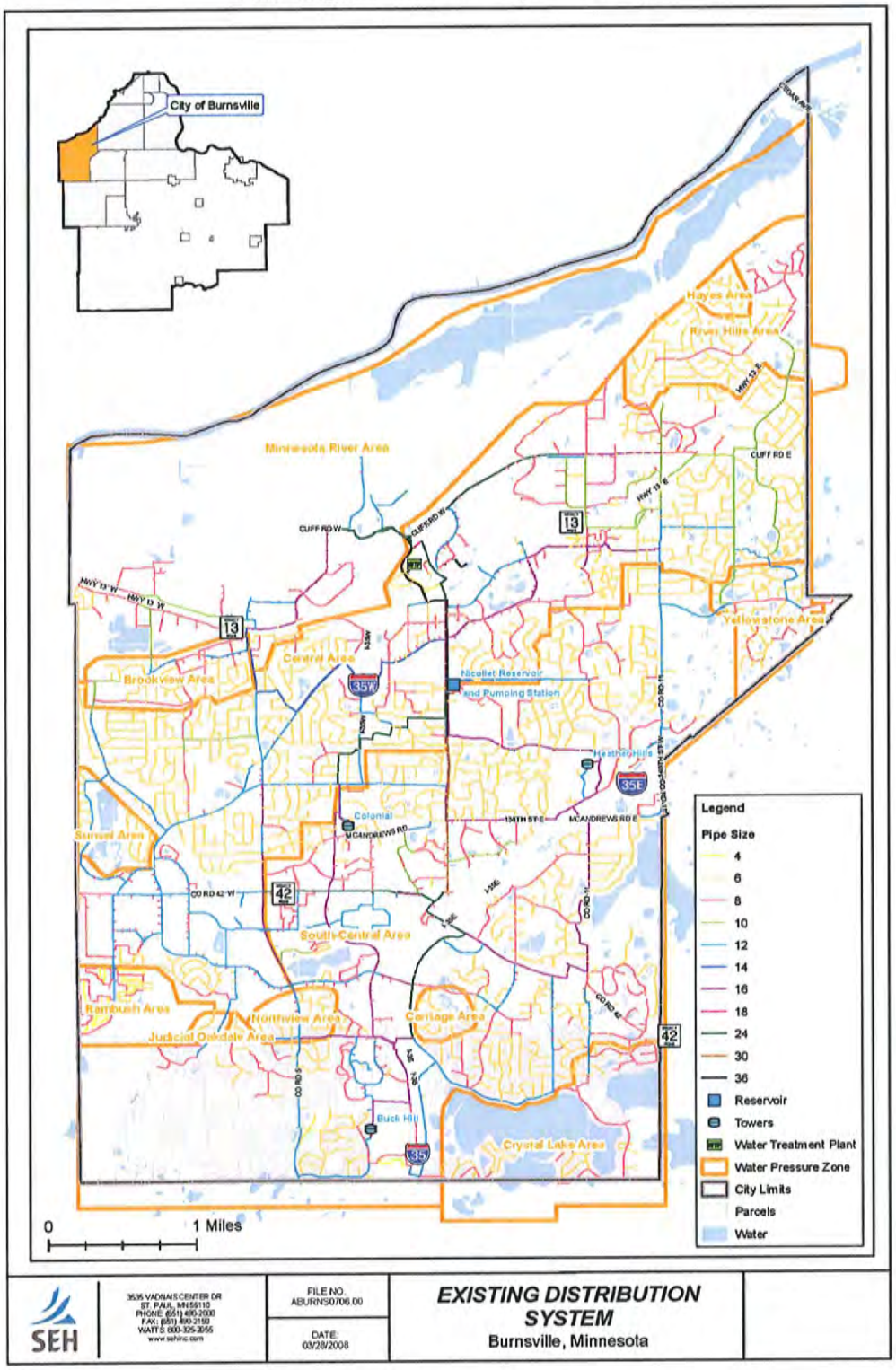
Nicollet Reservoir Pump Station

This Nicollet Reservoir Pump Station pumps water from the Central Area Pressure Zone to the South Central Zone and to all of the pressure zones served from the South Central Zone through pressure reducing valve stations. The total demand of these zones is estimated to be 47 percent of the total system demand. As the sole source of supply for all of these water system users, the Nicollet Pump Station has sufficient pumping capacity to meet these demands.

The Nicollet Pump Station consists of four high service pumps drawing from the Nicollet Reservoir. Two of these pumps have a capacity of 6,300 gpm, one has a capacity of 4,000

gpm, and one has a capacity of 3,800 gpm. The total pumping capacity is 20,400 gpm (29 MGD). The pumps are automatically controlled based on the water level of the Heather Hills Standpipe.

Figure 240
Existing Distribution System Map



14.3 Existing Water Demands

The Burnsville water utility records indicate that in 2007, the average daily (AD) water demand for the complete system was 7,988,907 gallons (5,548 gpm). The maximum day (MD) demand for 2007 was 21,421,000 gallons (14,876 gpm).

14.3.1 Peaking Demand Factors

Peaking factors are ratios to the average day demand rate which are used in analysis of water systems. They are representative of temporal variation in water demands. A maximum day peaking factor for a water system is the ratio of the MD demand rate to the AD demand rate. It normally indicates the magnitude of seasonal differences in water demands. For example, if demands on a system increase substantially during the summer due to lawn irrigation, the peaking factors will also be large. Typical MD peaking factors range from 2.0 to 3.0. Larger systems generally have lower maximum day peaking factors. However, predominantly residential municipalities, especially in metropolitan areas, generally have a higher peaking factor due to sprinkling demands.

Recent MD peaking factors for Burnsville are shown in Figure 25~~4~~ - Recent Water Demands and Maximum Day Peaking Factors. For future demand projections, a MD peaking factor of 2.7 was used, based on historical data. The historical maximum day peaking factors in Burnsville have been in the middle of the typical range listed in the preceding paragraph. The maximum day demands in Burnsville over the previous five years have occurred in either July or August, as is anticipated due to outdoor water use.

The peak hour (PH) demand rate is also commonly used in water system analysis. PH demands occur during the hour of a given year in which the highest demand rates are experienced on the system. Typical PH peaking factors (the ratio of PH water demands to AD water demands) range from 3.2 to 5.0. The PH peaking factor for Burnsville was estimated to be 60 percent greater than the MD peaking factor. This is a typical estimate in accordance with the American Water Works Association (AWWA) recommendations and resulted in a PH peaking factor of 4.3 (2.7x1.6 = 4.3).

Figure 25~~4~~ - Recent Water Demands and Maximum Day Peaking Factors, also shows per capita water demands for the previous five years. There is no apparent trend in per capita demand over this time period. The city implemented water conservation ordinances in 2003 in an attempt to reduce water demands. The restrictions include an odd/even watering schedule, and prohibit irrigation from 11:00 a.m. to 4:00 p.m. from April 1 to September 30 each year. It is hoped that a combination of conservation ordinances, educational efforts, and water rates will reduce future per capita demands and peaking factors on the Burnsville system.

Figure 25~~4~~
Recent Water Demands and Maximum Day Peaking Factors

Year	Annual Water Use (gal)	Average Daily Water Use (gpd)	Maximum Day Volume (gpd)	Date of Maximum Day	Maximum Day Peaking Factor	Estimated Population	Per Capita Demand (gpd)
2007	2,915,951,000	7,988,907	21,421,000	7/30	2.7	61,136	131
2006	2,976,729,760	8,155,424	18,600,988	7/9	2.3	61,048	134
2005	2,631,909,880	7,210,712	19,204,398	8/16	2.7	60,910	118
2004	2,707,783,890	7,418,586	16,618,569	8/31	2.2	60,772	122
2003	3,005,669,880	8,234,712	21,229,998	8/17	2.6	60,634	136

14.3.2 Demand Distribution

Water demands are variable throughout the day and the year. On an annual basis, the heaviest demand conditions (maximum day demands) typically occur during the summer when residential irrigation increases. This is illustrated in Figure 26~~2~~ - Seasonal Water Demand Variation 2002 – 2007, which shows monthly water demands for 2003-2007.

Water demands also vary over the course of a given day. Figure 27~~3~~ - Typical Residential 24-Hour Diurnal Demand Distribution Curve as Applied to the Burnsville Water System represents a typical demand distribution graph for residential water use, as applied to Burnsville demands during the 2006 maximum day demand. Commercial and industrial water uses are typically more constrained and predictable.

The residential demand graph depicts low water demand during the early morning periods. It shows increasing demand during the day with a slight decrease in the late morning periods. By late afternoon, when lawns are being sprinkled the demand peaks at what is considered the PH demand rate. The demand lessens considerably into the late evening hours.

The firm supply capacity of a system should be at least equal to the MD demand rate. This is the recommendation of the Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers in their "Recommended Standards for Water Works" (commonly referred to as the "Ten States Standards"). As mentioned in Section 14.2.1, storage reservoirs are used to supplement the supply of treated water during the peak usage hours within each day. During the early morning periods when demand is low, the system is able to produce water in excess of the demand. This excess is used to fill the storage reservoirs.

When the demand rate exceeds the production rate, stored water in the reservoirs is used to make up for the deficit. The storage reservoirs will start to fill when the demand decreases below the total supply capacity.

Figure 262
Seasonal Water Demand Variation 2002 - 2007

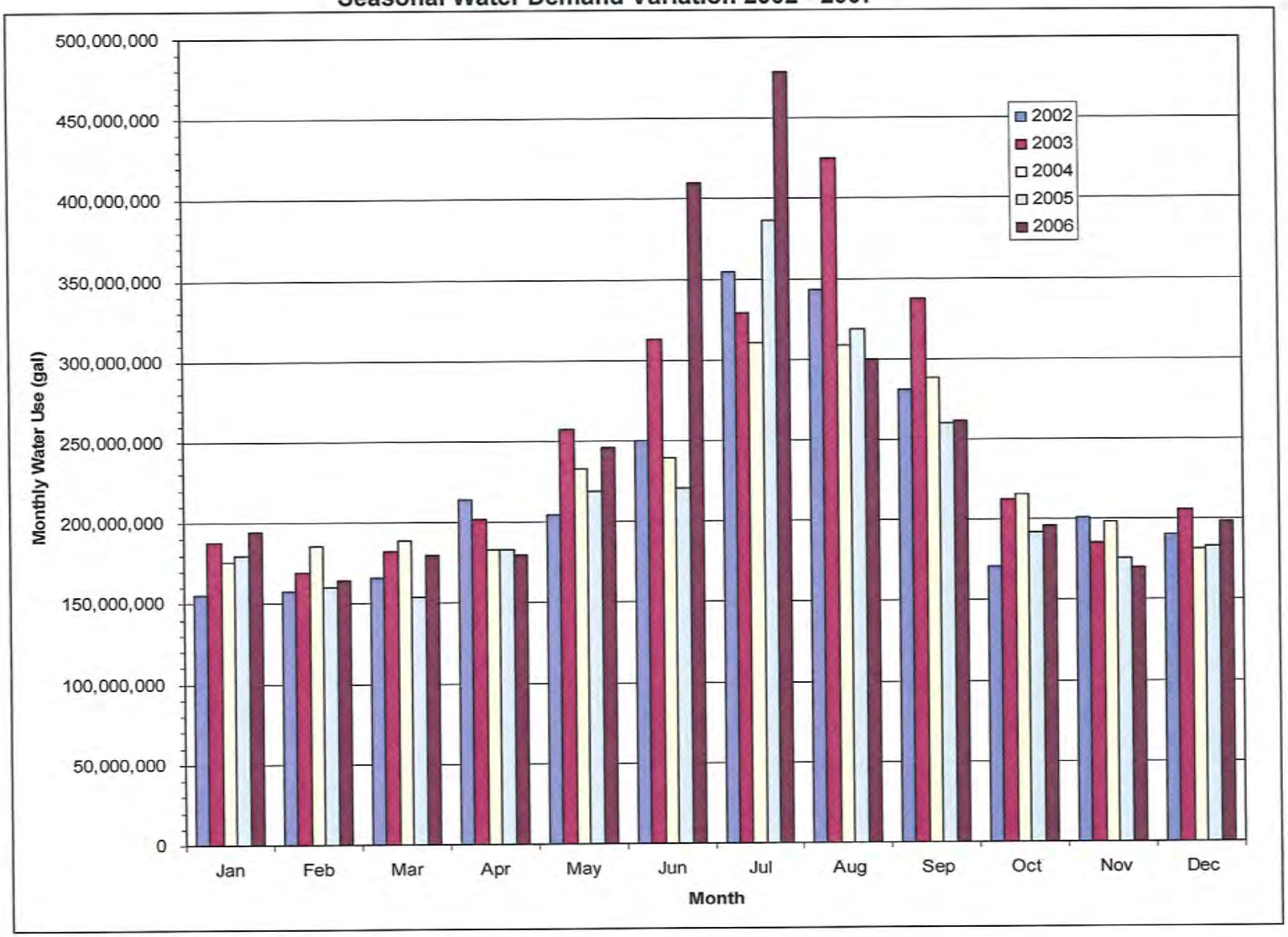
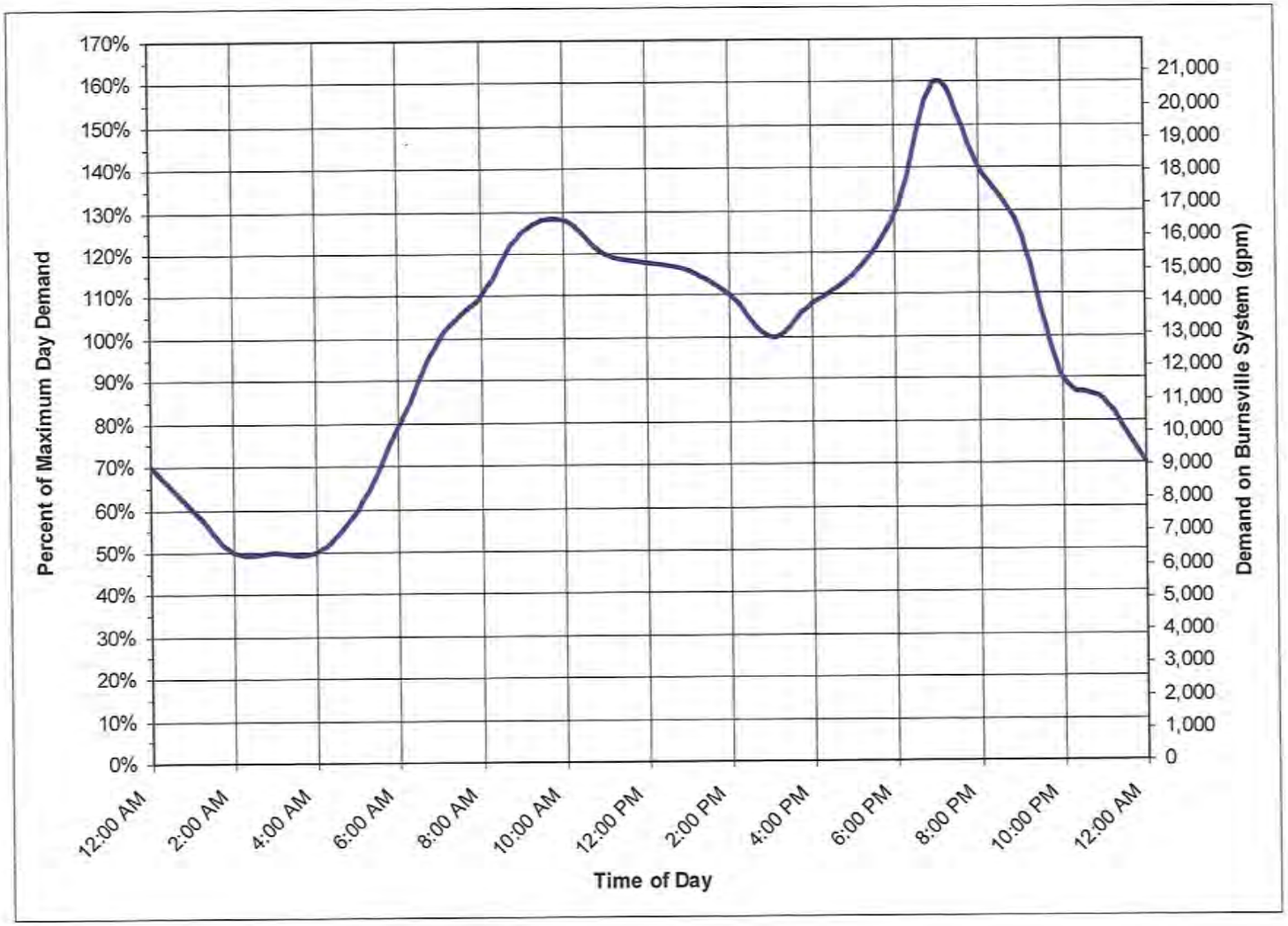


Figure 2~~3~~7
Typical Residential 24-Hour Diurnal Demand Distribution Curve as Applied to the Burnsville Water System



14.4 Water Demand Projections

14.4.1 Population Trends

Population projections through 2030 are shown in Figure 284 – Future Estimated Water Demands. These population projections are taken from the Metropolitan Council, and have been derived using a basic cohort-component model.

14.4.2 Projected Water Demands

The water demand projections used in this study are based on population projections. Figure 285 – Future Estimated Water Demands presents the projected city population, average day demand, and maximum day demand through 2030.

Future projected populations were multiplied by per capita demands to estimate future average day water use. The per capita demand used to calculate future demands was based on the historical population and water demands shown in Figure 295 – Historical and Projected Maximum Day Demands. The average per capita demand over the previous five years was 126 gallons per day (gpd). The highest of the previous five years was 136 gpd, experienced in 2003. For the purpose of projections, 136 gpd was used in this study in order to produce a conservative estimate of future water demands for planning.

In order to project maximum day demands, these future average day demands were multiplied by the highest maximum day peaking factor (2.7) experienced on the Burnsville water system over the last five years. This projection then represents the maximum daily demand expected during this planning period. Figure 28 - Future Estimated Water Demands shows a projected average day demand of 8.84 MGD for 2030. This represents an increase of approximately six percent over current demand levels.

Figure 285
Future Estimated Water Demands

Year	Projected Population	Projected Average Day Demand (MGD)	Projected Maximum Day Demand (MGD)
2010	61,400	9.091	24.546
2020	63,000	9.309	25.134
2030	65,000	9.581	25.868

14.5 Facility Improvement Recommendations

The existing water system was analyzed for supply, treatment, storage, and distribution capacity to determine if additional water system capital improvements are necessary in order to continue to provide a safe and reliable water supply through 2030. It was determined that additional capacity for supply, treatment, and storage on the distribution system is not necessary to meet projected water demands through 2030. The rationale for this conclusion is presented in the following sections.

The improvements recommended in this report are related to facility maintenance. Additional improvements are already planned through the city's existing Capital Improvement Plan (CIP). This CIP is presented in E. (Provide link to Appendix E – CIP here).

14.5.1 Supply and Treatment Improvements

The city population and water demand projections through 2030 are shown on Figure 30~~26~~ - Supply and Treatment Facility Needs Through 2030. Maximum day demand projections are also shown graphically in Figure 28~~5~~ - Historical and Projected Maximum Day Demands, along with the maximum day demands from the previous five years for comparison. The projected demands in Figure 30~~26~~ - Supply and Treatment Facility Needs Through 2030, are compared with supply and treatment facility capacities for the purpose of determining the existing and future adequacy of the capacity of these facilities.

It can be seen that both firm supply capacity and water treatment plant capacity (following the expansion that is currently in design) are sufficient to meet the projected demands through 2030. The ultimate projected maximum day demand takes into account water service to the City of Savage starting in July 2009 (estimated completion date for treating Kraemer Quarry water). An agreement with Savage will require Burnsville to supply up to 2 MGD to the Savage water system through the existing water main interconnection located near County Road 42.

The city's supply and treatment capacity is adequate to meet Burnsville's projected water demands and supply Savage up to 2 MGD through 2030. While treatment capacity may be limited, the city will continue to have the option of bypassing approximately 4 MGD of well water around the water treatment process to blend with treated water to meet peak demands.

The South Central Area will continue to be supplied from the Nicollet Reservoir Pumping Station. The demand projections for the South Central Area shown in Figure 26 - Supply and Treatment Facility Needs Through 2030, assume that the current demand distribution (70% of total system demands in the South Central Area and the sub-zones served from it) will remain constant throughout the planning period. In the worst-case scenario, the entire projected water demand increase for Burnsville would end up in the zones served from the Nicollet Reservoir. In this case, the ultimate projected maximum day demand on the Nicollet Pumping Station would be approximately 17.4 MGD. The current firm pumping capacity at that pumping station of 20 MGD will be sufficient to meet the projected demands.

Figure 295
Historical and Projected Maximum Day Demands

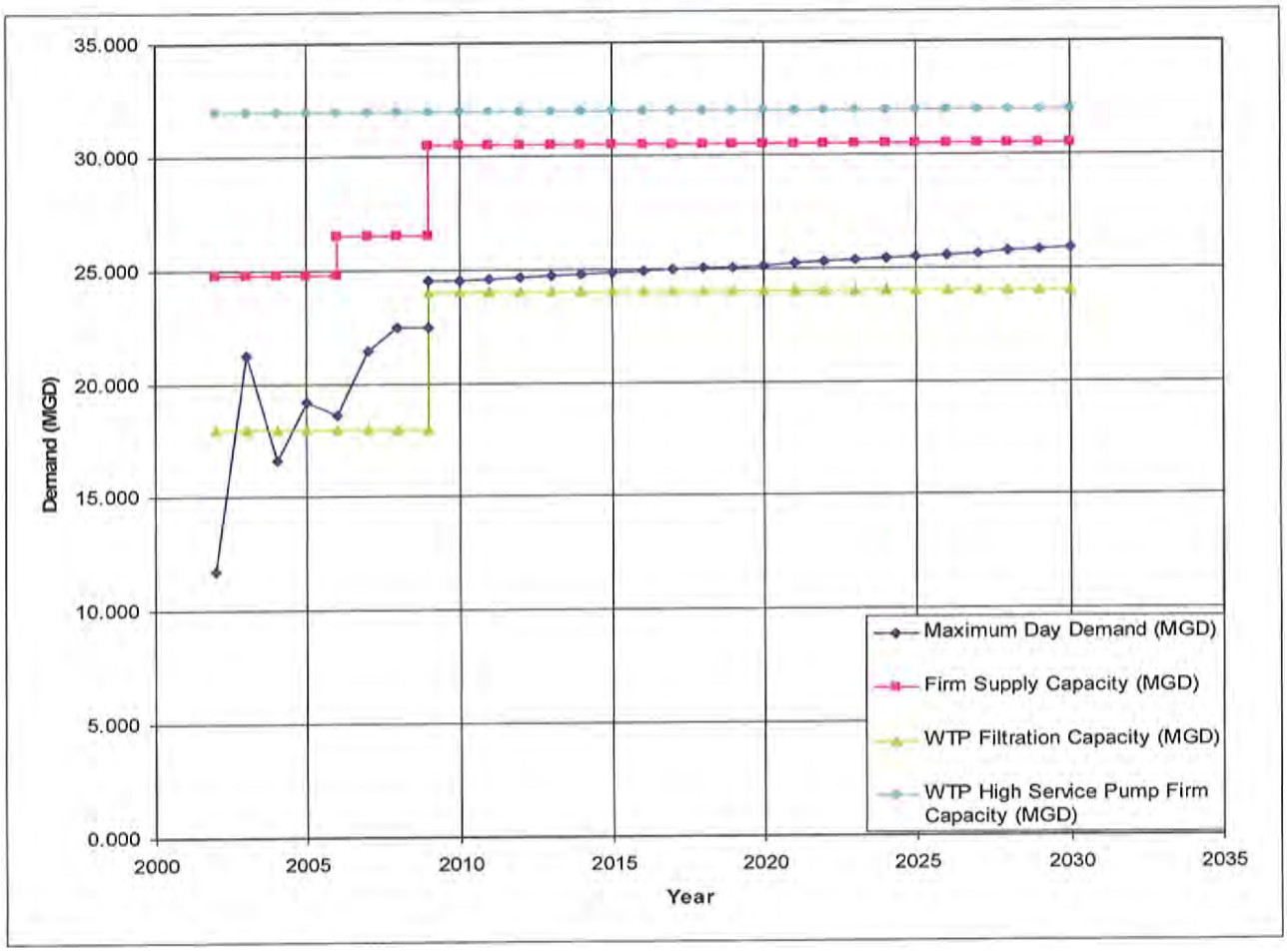


Figure 30~~26~~
Supply and Treatment Facility Needs Through 2030

Year	Estimated / Projected Population	Average Day Demand (MGD)	Max Day Demand (MGD) [1]	Firm Supply Capacity (MGD)	WTP Filtration Capacity (MGD) [2]	Estimated Maximum Day Demand of the South Central Area (MGD)	Firm Capacity of Nicollet Pump Station (MGD)
2002	60,496	7.365	11.763	24.768	18.000	8.234	20.000
2003	60,634	8.235	21.230	24.768	18.000	14.861	20.000
2004	60,772	7.419	16.619	24.768	18.000	11.633	20.000
2005	60,910	7.211	19.204	24.768	18.000	13.443	20.000
2006	61,048	8.155	18.601	26.496	18.000	13.021	20.000
2007	61,136	7.989	21.421	26.496	18.000	14.995	20.000
2008	61,224	8.326	22.481	26.496	18.000	15.737	20.000
2009	61,312	8.338	24.514	30.528	24.000	15.760	20.000
2010	61,400	8.350	24.546	30.528	24.000	15.782	20.000
2011	61,560	8.372	24.605	30.528	24.000	15.823	20.000
2012	61,720	8.394	24.664	30.528	24.000	15.865	20.000
2013	61,880	8.416	24.722	30.528	24.000	15.906	20.000
2014	62,040	8.437	24.781	30.528	24.000	15.947	20.000
2015	62,200	8.459	24.840	30.528	24.000	15.988	20.000
2016	62,360	8.481	24.899	30.528	24.000	16.029	20.000
2017	62,520	8.503	24.957	30.528	24.000	16.070	20.000
2018	62,680	8.524	25.016	30.528	24.000	16.111	20.000
2019	62,840	8.546	25.075	30.528	24.000	16.152	20.000
2020	63,000	8.568	25.134	30.528	24.000	16.194	20.000
2021	63,200	8.595	25.207	30.528	24.000	16.245	20.000
2022	63,400	8.622	25.280	30.528	24.000	16.296	20.000
2023	63,600	8.650	25.354	30.528	24.000	16.348	20.000
2024	63,800	8.677	25.427	30.528	24.000	16.399	20.000
2025	64,000	8.704	25.501	30.528	24.000	16.451	20.000
2026	64,200	8.731	25.574	30.528	24.000	16.502	20.000
2027	64,400	8.758	25.648	30.528	24.000	16.553	20.000
2028	64,600	8.786	25.721	30.528	24.000	16.605	20.000
2029	64,800	8.813	25.795	30.528	24.000	16.656	20.000
2030	65,000	8.840	25.868	30.528	24.000	16.708	20.000

(1) Includes 2.0 MGD supply to Savage starting in 2009
(2) Includes proposed surface water treatment plant capacity starting in 2009

14.5.2 Distribution System Improvements

Figure 30~~26~~ - Supply and Treatment Facility Needs Through 2030, also shows the estimated demand projection for the South Central Area including and all of the pressures zones served from this area. The pumps at the Nicollet Pump Station, which supply these areas, are currently sized to reliably meet the projected demand of the South Central Area and other areas fed from this pressure zone. The last two columns of Figure 30~~26~~ - Supply and Treatment Facility Needs Through 2030 present this information. It is assumed that the demand served by the Nicollet Pump Station accounts for 70 percent of the total system demand on average, and that this proportion will not change significantly through 2030. The conclusion of these calculations is that the Nicollet Pumping Station has adequate reliable capacity to meet anticipated water demands through 2030.

The water distribution system in Burnsville has been extended to serve the majority of the areas within the city limits. Two areas remain where utilities may be extended within the city during the life of this plan. These include the MRQ area north of Cliff Road and west of I-35W, and the southwestern corner of the city where residential development and water service connections are also planned.

MRQ (MRQ)

The MRQ has planned commercial and industrial development; therefore, the city's water service must be capable of providing the fire protection needs in addition to the maximum day demands for these properties. For commercial and industrial buildings, the required fire flow rate varies considerably and is based on several characteristics of individual buildings such as:

- Type of construction
- Type of business or occupancy
- Proximity and characteristics of nearby properties
- Presence or absence of a fire sprinkling system

While the fire flow requirements of commercial and industrial properties should be evaluated on a case-by-case basis, a general rule of thumb is that a municipal water system should aim to provide 3,500 gpm to commercial and industrial land use. The Insurance Services Office (ISO), in determining a community's fire insurance classification, only considers flow rates up to 3,500 gpm.

In a plan completed in 2007, a trunk water main layout was proposed to serve properties adjacent to Embassy Road and 118th Street. This water main would extend from the existing 12-inch water main that currently extends approximately 2,900 feet north along Embassy Road from Cliff Road. The recommended main size in the report was 12-inch along Embassy Road and east and west along 118th Street. Based on computer modeling results, it appears that this main size should provide 3,500 gpm in available fire flow. Additional hydrant flow testing would be recommended in that area to further calibrate the computer model.

The water in this trunk main may become stagnant if the water use does not allow for turnover of the water in the main on a regular basis. For this reason, it is recommended that a valve to flush water from the main on a regular basis be installed on this line. Stagnant water can result in a loss of chlorine disinfectant residual in the distribution system and can result in water quality problems.

The cost of the trunk main improvements to this area are included in the city's current Capital Improvement Plan for 2008-2012, and are thus not further analyzed in this report. The existing Capital Improvement Plan is presented in Appendix E. (Provide link to Appendix E here).

Southwest Burnsville - Rural Residential Development

The southwestern residential development includes an area roughly bordered by Woods Trail on the north, County Road 5 on the east, and the Burnsville municipal boundary on the south and west. (Provide a link here to Appendix H for SW Burnsville Plan). Extending water service around the Woods Trail area was examined in a 2005 report. In that report, it was recommended that a looped water main connection be provided to the area to improve available fire flow rates.

It was also recommended that this trunk loop be connected to the higher pressure zone. The Woods Trail area is currently served by an extension of the Northview Area, which is a sub-zone fed from the South Central Area through pressure reducing valves (PRVs). This pressure zone has an approximate hydraulic grade of 1120 feet, resulting in pressures of approximately 90 psi at an elevation of 912 feet. It is possible that some residences in the area experience greater pressures since elevations appear to drop to approximately 870 feet in certain areas.

Extensions to the south and west from the existing service area around Woods Trail should be connected to the same pressure zone with looping as recommended by the 2005 study. If service is provided to elevations less than 900 feet, the additional pressure reducing valves to serve the low-lying areas will be considered. The Minnesota Plumbing Code requires that all properties being served with water pressures greater than 80 psi be equipped with an individual pressure reducing valve on the service line to prevent excessive pressures in home plumbing systems. Industry standard also recommends that distribution system pressures remain below 100 psi. *(Recommended Standards for Water Works. Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. 2003 Edition. Health Education Services. Albany, NY).*

Further expansion of this area to the south of Valley View Drive will require higher hydraulic grade to serve higher elevations. It is recommended that this area be connected directly to the South Central Area. The 12-inch main in County Road 5, south of 150th Street, is connected to the South Central Area with an estimated hydraulic grade of 1208 feet in this location. Service should be provided with a looped connection at this location as well for reliability and hydraulic performance.

Actual routing of mains will be dependent on the street layout in the area, but consideration should be given to providing a 12-inch trunk main loop for improved fire flows to the area. It is understood that 100 percent of the utility costs for this area will be paid for by residents directly benefiting from the service; and therefore, costs were not considered here to be added to the city's capital improvement plan.

36-inch Main to Provide Redundancy to Nicollet Reservoir Supply

The Nicollet Reservoir is currently served by a 36-inch PCC pipe that runs approximately 6,000 feet from the water treatment plant to the reservoir. The reliability of this supply line is a major concern. In the case of failure of this 36-inch line, the water supply to the reservoir could be restricted, especially during high water demand conditions. The computer model of the distribution system was used to examine the effects on the system of removing the 36-inch PCC pipe from service. When water is not allowed to flow through the 36-inch pipe, it is forced to flow through the smaller mains of the distribution system to reach the reservoir. This results in higher flow velocity and greater frictional pressure losses. The model shows that this scenario could result in a significant pressure increase at the water treatment plant (on the order of 30 psi) to overcome the additional friction.

14.5.3 Storage Improvements

In order to determine the water storage needs of a community, average daily demands, peak demands, and emergency needs must be considered. For many communities, fire protection needs tend to be the controlling factor when calculating needed storage volume. Figure 27 - Storage Facility Needs Through 2030 shows the calculations used to determine future water storage volume requirements for Burnsville.

Water storage facilities should be capable of supplying the desired rate of fire flow for the required length of time during peak demands when the water system is already impacted by

other uses and with the largest pump(s) out of service. The calculations in Figure 27 - Storage Facility Needs Through 2030, assume that 75 percent of the storage volume is available for fire fighting, maximum day demands are occurring on the system, and the two largest supply pumps are out of service.

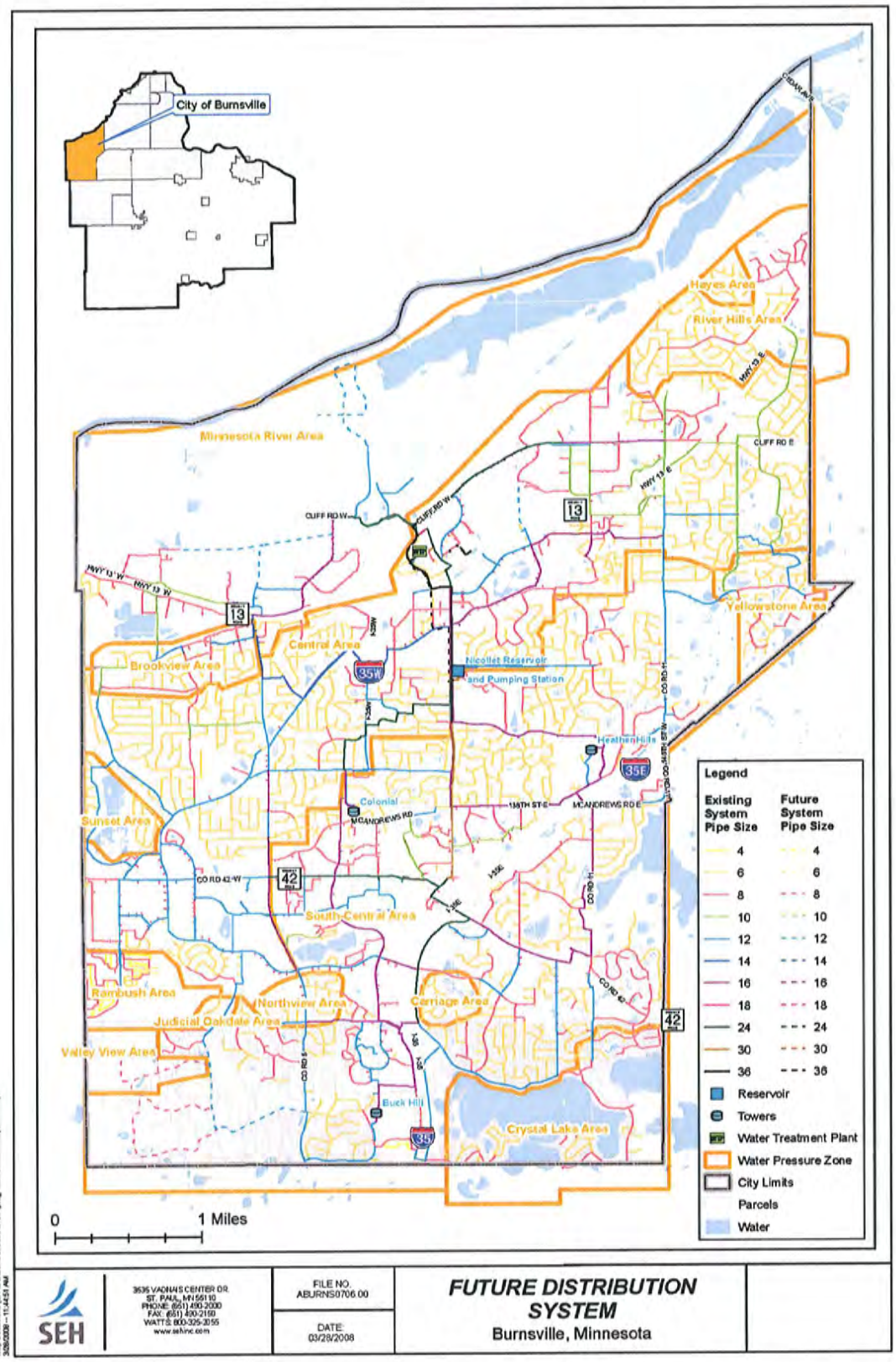
Figure 31~~27~~ - Storage Facility Needs Through 2030 indicates that existing storage capacity on the Burnsville water system is able to meet projected demands through 2030. In addition to capacity considerations, the city must also plan for maintenance costs for water storage facilities. Steel water storage tanks require periodic cleaning and repainting. This maintenance is scheduled in the city CIP.

Figure 31~~27~~
Storage Facility Needs Through 2030

		2006	2030
A	Average Daily Water Use in gpd	8,155,424	8,840,000
B	Average Daily Water Use in gpm (A / 1440)	5,663	6,139
C	Maximum / Average Day Ratio	2.28	2.7
D	Maximum Day Water Use in gpd (A x C)	18,600,988	23,868,000
E	Maximum Day Water Use in gpm	12,917	16,575
F	Firm Pumping Supply Capacity in gpm	19,400	19,400
G	ISO Design Fire Fighting Rate in gpm	3,500	3,500
H	Fire Fighting Duration in Hours	3	3
I	Design Fire Fighting Volume in Gallons (G x H x 60min/hour)	630,000	630,000
J	Total Coincident Demand in gpm (E + G)	16,417	20,075
K	Required Draft from Storage in gpm (J - F)	-2,983	675
L	Adjusted Fire Fighting Storage in Gallons (H x 60 min/hr x K)	-536,877	121,500
M	Equalization Storage in gpd (D x 25%)	4,650,247	5,967,000
N	Total Storage Need in Gallons (L + M)	4,113,371	6,088,500
O	Existing Useable Elevated Storage in Gallons	13,200,000	13,200,000

Figure 32~~28~~ - Future Water Distribution System Map on the following page illustrates the future water system plan for Burnsville.

Figure 32~~28~~
Future Water Distribution System Map



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DATE: 03/28/2008

FUTURE DISTRIBUTION SYSTEM
Burnsville, Minnesota

City Response to Question 3

commission or planning department of a municipality. For the purpose of administering the Comprehensive Plan including the sale and acquisition of public land and capital improvements, the planning department is the planning agency. The statute also specifies that failure of the planning agency to report on the proposal within 45 days after such a reference, or such other period as may be designated by the governing body shall be deemed to have satisfied the requirements of this subdivision. The governing body may, by resolution adopted by two-thirds vote dispense with the requirements of this subdivision when in its judgment it finds that the proposed acquisition or disposal of real property or capital improvement has no relationship to the comprehensive municipal plan.

The City Council established a formal policy setting forth procedures for the sale/rental of city property including properties owned by the EDA. The city policy allows property to be rented or offered for sale when it is determined that it is no longer needed for a public purpose. The city considers the sale or rental of property based on the proposed use for the property that serves the public interest and is in keeping with the established policies and goals of the city. Also, the city/EDA may on occasion acquire tax forfeit land following notification by Dakota County.

6.3 Economic Development Partnerships

The city utilizes partnerships with many organizations such as the Minnesota Department of Education and Economic Development (DEED), Dakota Community Development Agency (CDA), Dakota Futures, and others to offer economic development incentives and programs. Partnerships often expand opportunities for economic development and may increase a project's eligibility for certain grant programs. The city collaborates with the Workforce Investment Board (WIB) which oversees employment and training programs in Dakota and Scott Counties. WIB is a state leader in developing innovative programs through workforce centers, one of which is located in Burnsville. WIB brings together public and private resources for job seekers and employers, provides local initiatives, and works to strengthen economic development partnerships to foster a healthy climate for new and existing businesses. WIB supports the Dakota-Scott Youth Council which oversees youth programs in our community and advocates for young people who are at risk.

7.0 FUTURE ECONOMIC DEVELOPMENT EMPHASIS

The Metropolitan Council forecasts employment opportunities in Burnsville to grow to 37,700 in 2010, 41,200 by 2020, and 43,300 by 2030. ~~totaling 15,062 new jobs and providing 22 percent of the county's employment.~~ From 2010 to 2030, most of these new jobs will occur in the Minnesota River Quadrant (MRQ) area in northwest Burnsville and consist of office, retail and industrial sector employment, with some recreational service employment along the transportation corridors. Over the next two decades, the major economic development efforts of the city will focus on the Heart of the city (HOC), Minnesota River Quadrant (MRQ) and attracting medical, biotech and nanotechnology research, firms and services to Burnsville.

7.1 Heart of the City (HOC)

The Heart of the City includes a 54-acre redevelopment area at its core that was designed based on smart growth design principles, mixed land uses, and a pedestrian friendly downtown area for Burnsville. The redevelopment area is generally located in the vicinity of Burnsville Parkway and Nicollet Boulevard and is illustrated on the following figure.

employment of 32,387. The Metropolitan Council estimates that the Burnsville will add nearly 5,600 ~~11,000~~ jobs during the next two decades.

Figure 8 - Comparative Population Data 1960-2006

Year	Burnsville	Burnsville % of Dakota County Population	Dakota County	Metro Area
1960	2,716	3%	78,803	1,535,297
1970	19,940	14%	139,808	1,874,612
1980	35,674	18%	194,279	1,985,873
1990	51,288	19%	275,186	2,288,729
2000	60,220	17%	355,904	2,642,056
2006	61,048	16%	391,613	2,821,779
% Change 2000-2006	1%		10%	7%

Source: U.S. Census

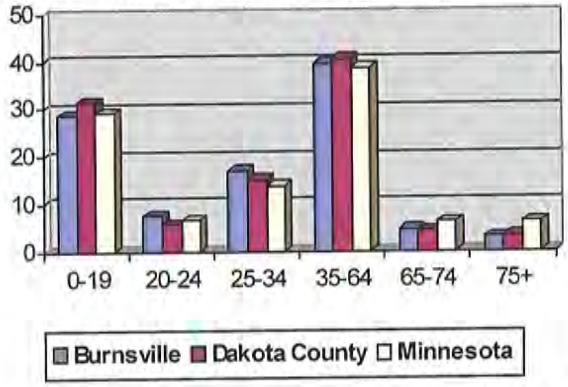
Figure 8 - Comparative Population Data 1960-2006 indicates that Burnsville (because we are a fully developed community) is being outpaced by other growing cities within Dakota County. This may have future implications for policy makers as we become a smaller constituency and have different issues to face as an older, redeveloping city than other rapidly growing communities within Dakota County.

The number of persons per household declined from 1990 to 2000 from 2.67 to 2.53 and further declined to 2.50 according to Metropolitan Council 2006 population and household estimates.

The number of persons per acre is increasing in Burnsville which is associated with the community nearing full build out but also increasing residential densities in redeveloping areas of the city. From 1990 to 2000, the number of persons per acre increased from 2.95 to 3.49 and then to 3.53 in 2006. The "persons-per-acre" statistic is one indicator of sustainable development that helps to measure our consumption of natural resources and generation of waste. Generally, the more persons per acre, (higher density consuming less raw land), the more sustainable an area is considered to be. Economies of scale factor in as generally, it is more cost efficient to provide services to a limited land area with high concentration of people than to provide services to sprawling areas with low density.

8.2 Age

Figure 9
Percent Population by Age Group Comparative Data 2000



In 2000, Burnsville's age groups compared similarly to that of Dakota County and the state of Minnesota. In 2000, 35-64 year olds made up the largest age cohort in Burnsville, followed by 0-19 year olds and people 25-34 years of age were the third largest age group in the community.

City Response to Question 4

LAND USE TABLE IN 5-YEAR STAGES / Existing and Planned Land Use Table (in acres)

Within Urban Service Area	Allowed Density Range Housing Units/Acre		Existing (2000)	2010	2015	2020	2025	2030	Change 2000-2030
	Minimum	Maximum							
Residential									
Single Family	0.5	3.5	4,417	4,417	4,430	4,800	4,900	5,009	+592
Medium Density Residential[1]	4.0	8.7	0	644	644	644	647	649	+649
Manufactured Housing[2]	4.0	8.7	173	0	0	0	0	0	-173
High Density Residential[3]	9.0	21.78	1,219	672	680	700	730	764	-455
C/I Land Uses	Est. Employees/Acre								
Business/Retail/Office	11.2[4]		968	1,077	1,077	1,077	1,077	1,077	+109
Commercial/Recreation/Business	11.2[4]		311	230	180	100	80	60	-251
HOC (uses other than residential)	11.2[4]		0	113	113	113	113	113	+113
Mixed Use (other than residential)	11.2[4]		0	5	60	95	100	118	+118
Industrial/Office	11.2[4]		1,090	752	752	752	752	752	-338
Industrial/Office Limited	11.2[4]		237	30	30	30	30	30	-207
Minnesota River Quadrant	11.2[4]		0	1,540	1,540	1,200[6]	1,200[6]	1,200[6]	+1,200[6]
Mining[4]			488	292	286	0	0	0	-488
Public/Semi Public Land Uses									
School[5]			175	0	0	0	0	0	-175
Church[5]			123	0	0	0	0	0	-123
Cemetery[5]			46	0	0	0	0	0	-46
Government[5]			101	0	0	0	0	0	-101
Hospital[5]			18	0	0	0	0	0	-18
Golf Course[5]			82	0	0	0	0	0	-82
Public[5]			101	0	0	0	0	0	-101
Parks and Recreation			2,759	1,416	1,416	1,416	1,416	1,416	-1,343
Open Space			0	1,456	1,456	1,456	1,456	1,456	+1,456
Roadway Rights of Way			2,756	1,552	1,552	1,552	1,552	1,552	-1,204
Undeveloped									
Vacant			814	340	320	261	143	0	-814
Wetlands	--	--	0	1,759	1,759	1,759	1,759	1,759	+1,759
Open Water, Rivers and Streams	--	--	1,371	954	954	1,294[6]	1,294[6]	1,294[6]	-77[6]
Total			**17,249**	**17,249**	**17,249**	**17,249**	**17,249**	**17,249**	**0**

[1] The 2000 Plan did not include Med. Density Res. In the 2030 Plan a Med. Den. Res. category has been created and includes Man. Housing (densities similar for both uses).
[2] The Manufactured Home category from the 2000 Plan has been deleted and the acres are represented as part of the Medium Density Residential category in the 2030 Update.
[3] High Density Residential includes 76 acres of Mixed Use w/Residential and 16 acres of HOC w/Residential. See Net Residential Density Worksheet for details.
[4] 11.2 is an average estimate (2000 – 10.27 / 2010 – 9.35 / 2020 - 12.23 / 2030 – 12.93). For more detailed estimates see TAZ Table.
[5] This use category existed in the 2000 plan but have been consolidated into other land use categories proposed in the 2030 Update.
[6] This Update anticipates the creation of a 340 acre Quarry Lake once the KMM limestone quarry is completed and the mined area is allowed to fill with fresh water.

City Response to Question 5

Figure 19 - Residential Land Availability

Land Use Type	Gross Vacant Acres	Net Acres	Density Range (units/acre)	Potential Units	
				Gross	Net
Rural Residential	59	57	0.5 – 1.0	30 - 59	29 - 57
Low Density Residential	67	58	2 - 3.5	134 - 235	116 - 203
Medium Density Residential	3	3	4 - 8.7	12 - 26	12 - 26
High Density Residential	9	9	9 - 14.52	81 - 131	81 - 125
~~Regional Center Residential~~ Neighborhood Oriented Mixed Use	28	28	15 - 21.78	420 - 610	420 - 616
Total				**677 - 1,061**	**658 - 1,027**

Source: Bonestroo

The Metropolitan Council forecasts for Burnsville's residential growth calls for adding 4,275 units between April 1, 2006 and 2030. As of March 2008, a total of 628 residential units have been approved for construction. To date, 224 units have been built with a balance of 404 units to be constructed in the future. Based on the table above that identifies 1,061 units plus the 404 units (total of 1,465 units) that have already been approved but not yet constructed, Burnsville will need to accommodate 2,810 more housing units to meet the 2030 housing forecast of 4,275.

This Plan suggests utilizing redevelopment areas (Aging Strip Retail Centers, and current Minnesota River Quadrant industrial lands) in addition to development of existing vacant residential zoned land, to provide additional housing opportunities. The Aging Retail Strip Center analysis demonstrates the potential among all of the Neighborhood Centers for 891 additional residential units. The MRQ summary analysis demonstrates the potential for 1,368 residential units. Upon full development of the MRQ, redevelopment of the Neighborhood Centers and development of the remaining vacant residentially guided properties, this plan identifies the potential for 3,724 future housing units. The anticipated development falls short of the 2030 residential unit goal of 4,275 units by 551 units.

The city anticipates that the 551 units may be accommodated through new development and redevelopment. The aging strip retail center analysis considered redevelopment of sites at an average density of 11 units per acre. It is possible that some redevelopment will occur at higher densities. In addition to the aging strip retail centers, there is potential for other sites to redevelop as well. For example, the city has received a concept plan to develop 174 units of senior and assisted living units on a 6 acre site currently zoned R1 Single Family Residential. The density of the proposed development (Presbyterian Homes) approaches 29 units per acre as opposed to a standard single family subdivision that would result in 21 units (at 3.5 units per acre density). In addition to projects such as this, Burnsville can also allow greater flexibility for building heights which would allow for a greater number of residential units on floors stacked above office/retail. Mixed use projects will also be designed with transit orientation and access therefore more site area can be designated to residential/business development through the reduction of surface parking. This plan identifies that the city can accommodate the housing units and population projected by the Metropolitan Council for Burnsville through the year 2030.

9.2 Commercial Growth Accommodation

There are about 110 net acres of vacant commercial property available for future development. The city is experiencing redevelopment and intensification of commercial sites near Burnsville Center, where new retail/entertainment buildings are being constructed on former parking lot areas. Future commercial development opportunities exist in the HOC, on scattered business guided properties throughout the city, further intensification and development along County Road 42 (adding additional retail/office, service and dining within underutilized parking areas), redevelopment along the Highway 13 Corridor and redevelopment of some of the city's aging retail strip centers.

SUBMITTED 12-31-08 with ORIGINAL BURNSVILLE UPDATE PACKAGE

Net Residential Density Worksheet

Table Calculating Net Density of Residential Development

Land Use	Single Family # of Units	Multi Family # of Units	Acres Gross Resid.	Acres Wetland & water-bodies	Acres Public Parks & Open	Acres Arterial Roads ROW	Acres Other Undevel-oped	Net Residential Acres	Net Density Units/Acre
	A	B	C	D	E	F	G	H=C-D-E-F-G	(A+B)/H
Rural Residential	245		556	14	0	0	0	542	0.45202952
Low Density Residential	11420		4453	26	0	0	0	4427	2.579625028
Med. Density Residential	1024	3070	649	21	0	0	0	628	6.51910828
High Density Residential		9058	672	2	0	0	0	670	13.51940299
Heart of the City		487	16	0	0	0	0	16	30.4375
MIX		1422	76	2	0	0	0	74	19.21621622
								0	#DIV/0!
								0	#DIV/0!
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TOTAL	**12689**	**14037**	**6422**	**65**	**0**	**0**	**0**	**6357**	**4.204184364**

* Describe on a separate page any other undeveloped land that does not fall under wetlands and water, public parks or arterial roads, including steep slopes or outlots for future or commercial development.