

ATTACHMENTS:
(Included on Enclosed Compact Disk)

- A. 2006 Strategic Plan
- B. Marina Triangle District Master Plan
- C. 1997 Local Water Management Plan
(update forthcoming in 2012)
- D. Buerkle Business Park Properties
- E. Downtown Fringe Properties
- F. Marina Triangle Properties north of Veteran's Memorial Park
- G. Zoning Map

City of
White Bear Lake

Strategic Plan 2006



Accepted May 23, 2006

*Please direct any questions or comments to the City Manager's Office
429-8516*

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BACKGROUND

In the summer of 2005, the White Bear Lake City Council began its fourth strategic planning process. The following document is the result of four (4) months work that culminated in October, 2005 at a two-day strategic planning session.

What is strategic planning? Simply put, strategic planning determines where an organization is going over the next 3-5 years and how it's going to get there. In our case, it is an effort to systematically identify the major issues faced by the City and to develop strategies to address them. Strategic planning is a process through which we critically evaluate our strengths and weaknesses, as well as outside opportunities and threats, so that strategic issues can be identified and clearly defined. Strategic issues then are key challenges or policy choices that can be addressed by the City; issues over which the City has some control.

The strategic planning process is as important as the plan itself. The process compels our community to develop a consensual vision of the future. The strategic planning committee, which represents a variety of community stakeholders, brings forth a broad spectrum of experiences and perspectives.

PROCESS

The City Council carefully selected residents of the community for the strategic planning committee to maximize representation of all community stakeholders. Furthermore, it utilized surveys and focus groups to capture a broad range of community experiences and perspectives.

The City began in July, 2005 by conducting a survey of city residents to measure general levels of satisfaction for current services. A detailed description of the survey process and its results is provided in the appendix. City staff was also surveyed; asked to describe what they perceived as strengths and weaknesses in the city's delivery of services. Finally, representatives from various sectors of

our business community were invited to participate in a focus group to offer ways in which the city could better serve the needs of businesses. The results of these efforts, along with information on local and regional trends, were provided to the strategic planning committee in advance for careful review and consideration.

The Strategic Planning Committee then met in October, 2005 over a two-day period. The committee included 24 members representing each of the five (5) municipal wards, the school district, the arts community, youth and seniors, the business community, and other interests.

The first planning session began with a review of the background information; an overview of the strengths, weaknesses, opportunities and threats identified by community and staff; a discussion of what is meant by a "strategic issue" and, finally; an opportunity for participants to first brainstorm and then submit what they believed to be the top three (3) strategic issues facing our community.

Strategic issues can best be described as complex dilemmas confronting the organization which are either potentially adverse if they are not satisfactorily resolved, or which present an opportunity for community betterment. They are considered issues now facing the City which will make a difference in two, five or even ten years, as opposed to more immediate operational concerns.

The strategic issues were grouped into broad categories for review by the committee the following day. Participants began the second session by reviewing the major themes that had emerged. The themes were then clearly defined by the group and prioritized in ranking order using interactive technology.

The resulting list of major themes represents months of research and hours of discussion. The significance of the process cannot be understated, insofar as it represents an effort to systematically work together as a community to define the critical issues we face. This process will help ensure that the strategic plan remains vital for the next 3-5 years.

MAJOR ISSUES

1. Drugs/Crime

Address drug use and crime from a multi-faceted and holistic perspective, including community education, prevention and enforcement.

2. Healthy Community

Foster opportunities to preserve and protect our community's assets and resources, which include:

- Supporting ethnic, intergenerational, and socio-economic diversity;
- Creating opportunities for culture, the arts, recreation, and historical relevance;
- Promoting sustainability and environmental awareness – renewable energy, land use, and natural resources, such as the Lake, its access and appropriate use.

3. Public Finance

Maintain the City's financial stability by following sound financial practices and assist residents in understanding the City's financial capabilities and limits.

- Promote understanding of the relationship between citizens' wants and their willingness to pay for them.

4. Youth

Make youth a priority by recognizing them as an overlooked resource. Develop a plan that addresses the needs of youth collaboratively.

5. Infrastructure

Maintain and expand the City's infrastructure

6. Transportation

Support and promote safe, multi-modal, accessible transportation options within our community, while encouraging efforts to provide efficient transportation options leading into and out of the City.

7. Collaboration/Cooperation

Foster interaction between all community stakeholders, including area jurisdictions, such as White Bear Township, by collaborating and cooperating with one another to address community-wide issues.

8. Housing

Support and encourage the development and redevelopment of affordable housing to which a variety of populations have access. Promote community-wide residential revitalization.

9. Marina Triangle

Ensure public awareness and input into the outcomes of the redevelopment project by providing community access to information and the development process.

10. Downtown

Support the viability of our downtown.

INCORPORATING THE STRATEGIC PLAN

The major themes defined in the Strategic plan will be used as guiding principles for the City Council as they direct City staff, set policy, enact laws and allocate resources. Prior to the budgeting process each fall, boards and commissions will be asked to develop recommended goals and objectives for the coming year, using the strategic plan as their guide. Their recommendations will then be forwarded to city staff for consideration as staff generates goals and objectives for each city department. The results will be categorized under the major themes defined in the strategic plan and presented to the City Council and citizens with the annual budget and work plan.

Ultimately, upon approval of the annual budget, staff will generate specific tasks necessary to achieve the goals and objectives outlined in the budget. Timelines and parties responsible for carrying out the tasks will be identified to encourage quarterly progress review.

In response to the results of the planning sessions concluded last fall, City staff defined several objectives that help to address the Major Issues described below. Some are new, while others were already underway. The City will continue to seek and explore new opportunities for action.

1. Drugs/Crime

Address drug use and crime from a multi-faceted and holistic perspective, including community education, prevention and enforcement.

	<i>Assigned to</i>	<i>Monitor date</i>
<i>Education</i>		
<ul style="list-style-type: none"> • While continuing to offer the DARE program through school, evaluate its effectiveness and consider modifications of its content as needed. 	PD, CMO	9/06
<ul style="list-style-type: none"> • Utilizing the police department's neighborhood officers, expand the scope of the Community Watch Program and other preventative programs, such as National Night Out. 	PD	10/06
<ul style="list-style-type: none"> • Educate city staff and citizens to recognize/identify signs of meth use and/or production. 	PD	5/07
<ul style="list-style-type: none"> • Create public awareness brochure on meth. 	PD	12/06
<i>Prevention</i>		
<ul style="list-style-type: none"> • Design and maintain public parks and other facilities to discourage vandalism. 	ENG, PW, PD	10/06
<ul style="list-style-type: none"> • Continue to cooperate with the school district to provide school resource officers and annually evaluate the effectiveness of the assignment. 	PD	10/06
<ul style="list-style-type: none"> • Seek funding opportunities to expand Youth Diversion program in collaboration with Northwest Youth and Family Services. 	CCC, CMO	10/06
<i>Enforcement</i>		
<ul style="list-style-type: none"> • Participate in county-wide prevention initiatives. <ul style="list-style-type: none"> ◦ Ramsey County Drug Task Force ◦ Ramsey County Methamphetamine task force 	PD	On-going On-going
<ul style="list-style-type: none"> • Train police officers in identification and detection of meth impaired drivers. 	PD	5/07
<ul style="list-style-type: none"> • Study the potential benefits of establishing a crime prevention fund which would provide financial rewards for information leading to the arrest and conviction of criminals. 	PD	10/06

CC = City Council; CMO = City Manager's Office; ENG = Engineering Department; CD = Community Development; PW = Public Works; PD = Police Department; FD = Fire Department; CCC = Community Counseling Center; PrkC = Parks Commission; CESP = Commission on Environmental and Sustainable Practices; PC = Planning Commission

2. Healthy Community

Foster opportunities to preserve and protect our community's assets and resources, which include:

- ✓ **Supporting ethnic, intergenerational, and socio-economic diversity;**
- ✓ **Creating opportunities for culture, the arts, recreation, and historical relevance;**
- ✓ **Promoting sustainability and environmental awareness – renewable energy, land use, and natural resources, such as the Lake, its access and appropriate use.**

	<i>Assigned to</i>	<i>Monitor Date</i>
<i>Support Diversity</i>		
<ul style="list-style-type: none"> • Study and consider the benefit of re-establishing a Human Relations Commission, drawing from the experiences of the former commission and of other commissions in surrounding metro communities. 	CC, CMO	8/06
<ul style="list-style-type: none"> • Collaborate with schools, faith communities, service organizations and athletic associations on programs that support ethnic and cultural diversity. 	CMO, CCC	10/06
<ul style="list-style-type: none"> • Collaborate with School District's Community Education Department to promote community-wide programs that unite youth and seniors in community projects. 	CMO, CCC	10/06
<i>Create Opportunities for culture, the arts, recreation, and historical relevance</i>		
<ul style="list-style-type: none"> • Support efforts of WBL Historical Society 	CC, CMO	On-going
<ul style="list-style-type: none"> • Support events and celebrations that foster community-building 	CC, CMO	On-going
<ul style="list-style-type: none"> • Support efforts of the White Bear Lake Arts Council 	CC, CMO	On-going
<ul style="list-style-type: none"> • Seek ways to create artistic and recreational activities that are accessible and affordable to all. 	CMO, CD	12/06
<ul style="list-style-type: none"> • Ensure adequate public access to White Bear Lake 	CC	On-going

	<i>Assigned to</i>	<i>Monitor date</i>
<i>Promote Sustainability and Environmental Awareness</i>		
<ul style="list-style-type: none"> • Promote water quality and conservation <ul style="list-style-type: none"> ○ Follow Best Management Practices (BMP) for construction projects and maintenance activities. ○ Research and implement best practices for managing water use during summer months ○ Participate in state and regional efforts to conserve ground water and lead local efforts to enhance public awareness of threats to ground water and its protections. • Incorporate "Green Practices" in City building construction and maintenance project. • Promote public awareness of environmental issues via the newsletter and special events such as Arbor Day and Earth Day activities. • Continue development and maintenance of City parks with environmentally sound and sustainable practices. • Encourage physical activity by citizens through park and transportation design. • Remain informed on energy conservation practices and innovations and the potential to promote them at the local level. • Continue emphasis on proactive waste management through the promotion of recycling and backyard composting. 	<ul style="list-style-type: none"> ENG ENG, PW ENG ENG, PW, CMO CMO PW, CESP ENG, PW, PrkC, PC ENG, CMO, CC, CESP CESP, CMO 	<ul style="list-style-type: none"> On-going 12/06 On-going 3/07 3/07 12/06 On-going On-going On-going

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3. Public Finance

Maintain the City's financial stability by following sound financial practices and assist residents in understanding the City's financial capabilities and limits.

- **Promote understanding of the relationship between citizens' wants and their willingness to pay for them.**

	<i>Assigned to</i>	<i>Monitor date</i>
• Expand website financial data availability.	FIN	6/06
• Utilize City Council and public infrastructure meetings to educate residents on the City's financial status.	FIN, CMO	On-going
• Continue to adhere to the City's fiscal policies and monitor financial benchmarks.	CC, FIN, CMO	10/06
• Include more information about the City's financial condition and practices in the newsletter, web site and guest editorials.	FIN, CMO	3/07

4. Youth

**Make youth a priority by recognizing them as an overlooked resource.
Develop a plan that addresses the needs of youth collaboratively.**

	<i>Assigned to</i>	<i>Monitor date</i>
• Encourage and provide summer employment opportunities for community youth to learn work habits, responsibility and earn income.	PW, CMO	7/06
• Provide opportunities for youth to be a part of different levels of city decision-making, encouraging youth to make appearances at City Council, board and commission meetings.	CC, CMO	1/07
• Provide and encourage youth volunteer opportunities for community activities and community services.	CMO	1/07
• Maintain Community Counseling Center youth-related services.	CCC, CMO	On-going
• Sponsor a youth forum to include different sectors of the community, such as service providers, law enforcement, school district personnel, business community and area youth to identify the needs of youth in the community and develop a plan to address those needs.	CMO, CCC	10/06
• Develop a Police Explorer Program	PD	10/07
• Maintain Fire Department's Explorer Group.	FD	On-going

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5. Infrastructure

Support and promote safe, multi-modal, accessible transportation options within our community, while encouraging efforts to provide efficient transportation options leading into and out of the City.

	<i>Assigned to</i>	<i>Monitor date</i>
<ul style="list-style-type: none"> Continue all prudent maintenance of water, sanitary sewer, park and street facilities; and meet or exceed best maintenance practices. 	PW	On-going
<ul style="list-style-type: none"> Continue the present pace of the City's street reconstruction program and monitor pavement conditions to ensure that street and utility replacements meet or exceed service life. 	ENG, CMO	12/06
<ul style="list-style-type: none"> Continue park improvement and enhancement projects with neighborhood involvement in design and the establishment of priorities. 	PW	12/06
<ul style="list-style-type: none"> Adequately maintain all public buildings and equipment to preserve their usefulness into the future. 	PW, FD, PD, CMO, CC	12/06
<ul style="list-style-type: none"> Create and maintain sufficient funding levels which will support infrastructure improvements and repairs. 	CC, FIN, CMO	12/06
<ul style="list-style-type: none"> Recognize the criticality of infrastructure maintenance to the City's core services and the public expectations that the City will address the needs. 	CC, CMO, FIN	12/06

6. Transportation

Support and promote safe, multi-modal, accessible transportation options within our community, while encouraging efforts to provide efficient transportation options leading into and out of the City. Promote efforts that discourage commuter traffic, while promoting slow and safe travel within the city.

	<i>Assigned to</i>	<i>Monitor date</i>
<ul style="list-style-type: none"> • Construct new improvements to accommodate accessibility needs of disabled persons and ensure access beyond minimum requirements at all public functions. 	ENG, PW	12/06
<ul style="list-style-type: none"> • Work with State, County and regional agencies to promote alternate transportation opportunities, (bus, rail, bike, pedestrian). 	ENG, CMO	12/06
<ul style="list-style-type: none"> • Work with the I-35E corridor group: <ul style="list-style-type: none"> ○ To promote the need for a new bridge on Hwy 96 over I-35E; ○ To help with implementation of the "Unweave the Weave" project. ○ To promote greater access to I-35E for communities to the north, Hugo and Lino Lakes. 	ENG, CD	5/07
	ENG, CD	On-going
	ENG, CD	5/07
<ul style="list-style-type: none"> • Assess speeds and traffic light timing on Highways 61 and 96. 	ENG	8/07
<ul style="list-style-type: none"> • Monitor traffic patterns throughout the "Unweave the Weave" project. 	ENG	8/07
<ul style="list-style-type: none"> • Identify alternate emergency routes to various parts of the City. 	FD, PD	10/06
<ul style="list-style-type: none"> • Work with the Metropolitan Council to promote use of mass transit as an alternative to single vehicle commuting. 	CC, ENG, CMO	On-going
<ul style="list-style-type: none"> • Work with Ramsey County Rail Authority to maintain the Burlington Northern corridor for mass transit. 	CC, CMO	On-going

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7. Collaboration/Cooperation

Foster interaction between all community stakeholders, including area jurisdictions, such as White Bear Township, by collaborating and cooperating with one another to address community-wide issues.

	<i>Assigned to</i>	<i>Monitor date</i>
<ul style="list-style-type: none"> • Continue cooperative joint Public Works projects with White Bear Lake Township, Mahtomedi, Birchwood and Vadnais Heights. 	ENG	12/06
<ul style="list-style-type: none"> • Maintain or expand municipal collaborations throughout the region and state to the extent that they benefit White Bear Lake citizens directly or indirectly. 	CC, CMO	12/06
<ul style="list-style-type: none"> • Maintain professional collaborations with state, regional and county agencies. 	CMO, ENG, CD	On-going
<ul style="list-style-type: none"> • Maintain inter-departmental collaboration 	CMO	On-going
<ul style="list-style-type: none"> • Identify new opportunities for collaboration <ul style="list-style-type: none"> ○ Pursue the creation of a multi-jurisdictional board to include the participation of surrounding communities and school districts to promote intercommunity cooperation. 	CMO	10/06
<ul style="list-style-type: none"> ○ Pursue new collaborative efforts with Northwest Youth and Family Services in Shoreview. 	CC	10/06
<ul style="list-style-type: none"> • Pursue collaborative efforts with local non-profit organizations that will improve the quality of life in White Bear Lake. 	CMO	10/06

8. Housing

Support and encourage the development and redevelopment of affordable housing to which a variety of populations have access. Promote community-wide residential revitalization.

	<i>Assigned to</i>	<i>Monitor date</i>
• ✎ Maintain a proactive code enforcement program and monitor the effect of increased rental use of single family homes.	CD	10/06
• Maintain inventory of housing needs and priorities through systematic field observations.	CD	10/06
• Promote housing rehabilitation through the use of various existing public incentive programs.	CD	
o Develop brochure to assist and encourage homeowners to improve private property.	CD	5/07
• Evaluate participation in the Northeast Housing Resource Center.	CD	10/06
• Commission a market study to determine the need for additional affordable senior housing.	CC, CD	12/06
• Pursue redevelopment of the White Bear Bar area with an affordable rental component.	CD	5/07
• Pursue assisted care housing to compliment the City's senior housing assets.	CD	10/06
• Support affordable housing through development and redevelopment while ensuring these buildings are being built according to existing building and fire codes. Continue to provide technical assistance to local housing advocates.	CD, FD, CMO	On-going
• Investigate options which encourage residents to maintain or make improvements to their property before their property requires significant redevelopment.	CD	5/07
• Explore the possibility of mandating the use of a "Crime Free Lease Addendum" for all rental property within the City of White Bear Lake.	CD	10/06

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9. Marina Triangle

Ensure public awareness and input into the outcomes of the redevelopment project by providing community access to information and the development process.

	<i>Assigned to</i>	<i>Monitor date</i>
• Prepare development agreement or action plan for Phase One redevelopment.	CC, CMO, CD	6/07
• Prepare construction drawings for public realm improvements.	CD, ENG	6/07
• Establish tax increment financing district.	CC, CD	6/07
• To ensure that the development of the marina triangle is done within the scope of the building and fire codes as it relates to building safety and access issues.	CD	6/07
• Create an ad campaign highlighting the process and broad goals for the property, including maintaining public areas and access to the lake.	CMO, CD	12/06

10. Downtown

Support the viability of our downtown.

	<i>Assigned to</i>	<i>Monitor date</i>
• Continue collaboration with Mainstreet, Inc. to promote restoration/maintenance of structures and expand commerce in Central Business District.	CC, CMO	12/06
• Provide maintenance support through street sweeping, snow plowing and special event support.	PW	On-going
• Implement the Fourth Street Commons project through RFP process.	CD	5/07
• Develop Hwy. 61 corridor beautification plans between Hwy. 96 north and south.	ENG, CD	5/08
• Design and implement new lighting plan for parking lots one and two.	ENG	10/06
• Develop a plan for planting new street tree bases.	ENG, PW	3/07
• Develop a plan and funding strategy for reconstructing the balance of downtown streets and walkways.	ENG, FIN	12/06
• Implement traffic signal improvement at Highway 61 and 7 th Street.	ENG	8/06

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APPENDIX A

MISSION STATEMENT

White Bear Lake will be responsive to the physical, safety and environmental requirements of its citizens through innovative leadership, planning and civic management. The Mayor, City Council and City employees will ensure the availability of a broad range of cost effective services, emphasizing a personalized approach that accommodates the special needs of individuals and neighborhoods and prudently utilizes available public and private resources.

PHILOSOPHY STATEMENT

The City of White Bear Lake exists to fulfill basic social, physical and political needs for the benefit of its citizens.

In accomplishing these needs, the City will:

- Be honest and open in its dealings with all residents.
- Seek fair and impartial solutions to issues it is presented with.
- Not attempt to be all things to all people but safeguard the overall welfare of the community.
- Recognize that all individuals living and working in the community are essential resources for achieving the City's mission and goals.
- Participate in and promote the exchange of ideas through open communication.
- Display innovation and initiative in responding to the needs of the community; take risks to achieve long term benefit.
- Be accountable and effective stewards of the public trust and resources.
- Commit to excellence in all services provided to our community.
- Treat the environment responsibly.
- Maintain a skilled and competent work force and foster employee pride and integrity.

These beliefs and values were further enunciated as the planning group identified the stakeholders of our community--those individuals having a vested interest in the policies, programs, services and actions of the City.

CUSTOMER SERVICE POLICY STATEMENT

The customer service policy statement is a guide for action and accountability of City employees and representatives. That policy is as follows:

“Each employee and representative of the City of White Bear Lake will provide professional, courteous and timely responses to the service and information needs of the public and, to the best of their ability, work to remedy citizen concerns. Employees will work with colleagues in a manner premised upon respect, dignity, understanding, and cooperation so each may fulfill their responsibilities effectively.”

APPENDIX B

<p style="text-align: center;">1991 Issues in priority order</p> <ul style="list-style-type: none"> • Downtown Revitalization • Economic Development • Strategic Planning/Vision • Community Center • Youth Development Plan • Housing Options • Intergovernmental Cooperation • Crime Prevention/Public Safety • Transportation Issues • City Financial Plan • Community Infrastructure • Environmental Protection • The Lake • Service Delivery 	<p style="text-align: center;">1995 Issues in priority order</p> <ul style="list-style-type: none"> • Economic Development and Redevelopment • Downtown • Environmental Protection • Non-motorized Transportation • Recreation and leisure activities • Education • Housing • Traffic: (speed and non-motorized) • Crime and Public Safety • Community Preservation • Infrastructure • Intergovernmental coordination
<p style="text-align: center;">2002 Issues in priority order</p> <ul style="list-style-type: none"> • Traffic Congestion • Education • Housing • Community • Development/Redevelopment • Parks and Open Space • Recreation • Environmental Protection • Crime and Drugs • Govt. Consolidation and Coop. • Downtown • Finance and Technology 	<p style="text-align: center;">2005 Issues in priority order</p> <ul style="list-style-type: none"> • Drugs/Crime • Healthy Community • Public Finance • Youth • Infrastructure • Transportation • Collaboration/Cooperation • Housing • Marina Triangle • Downtown

APPENDIX C

Community Needs Survey Results

At the direction of the City Council, staff designed and implemented a Community Needs survey as part of the City's Strategic Planning Process. This memo is intended to give an overview of the survey, and its findings. Also attached is the raw data from the survey along with the data from the 2001 Strategic Plan for comparison purposes.

Methodology

Sampling Method

The appropriate sample size is a factor of the population size, the desired confidence level, the desired margin of error, and the likely response rate. The sample size for the survey was 10,086 households (7,488 single-family and 2,598 multi-family). City Staff pursued a 95 percent confidence level with a +/- 5 percent range for margin of error. Based on the assumption of a 50 percent response rate, City Staff mailed the survey to 759 randomly chosen households to achieve the 95% confidence level. 562 surveys were mailed to single-family households, and 197 surveys were mailed to multi-family households.

Return Rate

Of the 759 surveys mailed to residents, 326 were returned for an overall return rate of 43%. Of the total returns, 270, or 83% came from single-family homes and 48, or 15%, from multi-family housing. The return rates for single-family and multi-family housing were 48% and 24%, respectively.

		<u>Return Rate</u>
Total number of surveys sent:	759	-----
Total number of surveys returned:	326	43%
Number received from single-family residences:	270	48%
Number received from rental housing:	48	24%

Survey Analysis and Findings

Condition of Community (Questions 1-5)

Of those responding to the question regarding the quality of life in the City of White Bear Lake, 95.3% responded that it was excellent or very good. 88.0% of the respondents stated that they rated the quality of their neighborhood as excellent or very good. 92.0% rated the City of White Bear Lake as an excellent or very good place to raise children.

The next question on the survey asked about the resident's sense of community, to which 79.2% of those responding said excellent or very good. 88.5% of the respondents stated that they felt the overall appearance of the City was excellent or very good. When asked

about opportunities for leisure time and organized recreation, of those that had an opinion, 70.9% stated that opportunities for leisure time were excellent or very good, 58.5% responded that opportunities for organized recreation activities were excellent or very good, 56.7% of respondents stated that shopping opportunities were excellent or very good, 20.2% stated that job opportunities were excellent or very good, and 57.4% stated that the range of housing was excellent or very good.

When asked to respond to how safe from crime they felt in the following locations, 95.6% stated that they felt very safe or somewhat safe in their home, 93.4% stated that they felt very safe or somewhat safe in their neighborhood, 80.7% stated that they felt very safe or somewhat safe in City parks, and 69.5% stated that they felt very safe or somewhat safe on streets or sidewalks after dark.

When asked to rate the following concerns, the respondents ranked the following issues as an important concern or a major concern:

Illegal Drugs:	52.8%
Traffic Speed:	48.6%
Quality Res. Neighborhoods	41.0%
Condition of Parks:	40.6%
Traffic Congestion:	40.0%
Overall Crime:	38.9%
Quality Commercial/Industrial Areas	37.2%
Loitering:	19.3%

The same concerns totaled in the following order when ranked according to not being a concern or being a minor concern:

Loitering:	80.7%
Quality Commercial/Industrial Areas	62.8%
Overall Crime:	61.1%
Traffic Congestion:	60.0%
Condition of Parks:	59.4%
Quality Res. Neighborhoods:	59.0%
Traffic Speed:	51.3%
Illegal Drugs:	47.2%

When asked if the City was doing too much, too little, or about the right amount in protecting the environment, 81.6% said the right amount, 16.2% too little and 2.3% said too much.

City Services (Questions 6-17)

Based on the amount of property taxes paid to the City, 61.1% of respondents stated that they felt property taxes were reasonable for the services received. 24.5% felt property taxes were too high, and 14.4% felt that a small tax increase may be reasonable if services or facilities were increased.

When asked how many times residents had done certain things in the community in the last 24 months, the answers ranged as follows:

- 33.1% stated that they had visited a neighborhood park only once or twice, if ever. 66.9 reported that they had visited a neighborhood park at least 3 times.
- 38.5% reported that they had watched a City Council meeting on cable television at least once.

- 37.5% of residents surveyed stated that they had volunteered their time to some group or activity in the City.
- 38.7% stated that they had viewed the City's website.
- 74.2% stated that they had read a City newsletter at least 3 times.
- 79.2% reported that they had attended Marketfest at least once.
- 29.2% of residents surveyed said they had never visited the White Bear Lake Library.
- 36.8% who stated they had never used the lake to fish, swim or go boating.

When asked to rate the quality of City services, of those who had an opinion (for some services, several respondents had no opinion or did not respond to that portion of the question. See survey tabulation for raw data), the following is how the services ranked in the excellent or very good category:

• Police Department:	91.1%
• Fire Services	95.3%
• Emergency medical services/ambulances	95.5%
• Sewer Services	87.8%
• Water Services	89.7%
• License Bureau services	91.6%
• Community Counseling Center	78.0%
• Sports Center	72.8%
• City Parks	82.6%
• City Flower Gardens	85.8%
• Street Maintenance	64.7%
• Cleanliness of Streets	73.8%
• Snow Removal from Streets	68.6%
• Snow Removal from Public Sidewalks	57.9%
• Street Lighting	62.6%
• Ease of automobile travel in City	67.0%
• Ease of pedestrian travel in City	62.5%
• Animal Control	66.1%
• Enforcement of Traffic Laws	69.0%
• Planning/Zoning/Community Development	59.8%
• Nuisance Code Enforcement	45.3%
• Refuse Collection	83.1%
• Recycling Service	82.3%

When asked to rate the overall quality of services provided by the City of White Bear Lake, 85.7% stated that the services were excellent or very good.

76.1% of the responders had had phone or in-person contact with a City of White Bear Lake employee within the last 12 months, and ranked City employees as excellent or very good on the following impressions:

• Knowledgeable	89.3%
• Responsive	86.0%
• Courteous/Friendly	86.0%
• Overall Satisfaction	85.8%

When asked their opinion on local government, respondents that registered an opinion stated the following:

	<u>Strongly Agree/ Agree</u>	<u>Neither Agree/ Nor Disagree</u>
I am pleased with the overall direction that the City is taking.	75.1%	25.5%
I feel reasonably informed on major issues in the City of White Bear Lake	64.1%	27.6%
City of White Bear Lake's government seems to welcome citizen involvement	63.0%	30.2%
City of White Bear Lake government seems to be run for the benefit of all	59.2%	32.3%
Most local elected officials care what people like me think	56.0%	31.6%

The survey asked respondents which services or facilities they felt were needed in the community.

	<u>Strongly Agree/ Agree</u>	<u>Neither Agree/ Nor Disagree</u>
• Expanded Library	47.9%	35.0%
• Additional Soccer Fields	15.7%	54.8%
• Additional Softball Fields	16.4%	54.8%
• Additional Football Fields	11.6%	58.8%
• Additional Baseball Fields	15.5%	56.4%
	<u>Strongly Agree/ Agree</u>	<u>Neither Agree/ Nor Disagree</u>
• An Additional Indoor Ice Rink	21.6%	44.6%
• Expanded Senior Citizen Center	45.8%	39.5%
• More Open Space/Passive Parkland	54.5%	33.3%
• An Indoor Municipal Swimming Pool	59.2%	21.0%
• An Outdoor Municipal Swimming Pool	43.0%	27.3%
• Many of the Above in a Community Center	64.2%	21.6%
• Expanded Youth Recreation Programs	54.8%	33.6%
• Expanded Adult Recreation Programs	47.4%	41.4%
• Pedestrian/Bicycle Trails	69.0%	19.3%
• Greater Access to White Bear Lake	54.7%	31.8%

Demographic Information

	<u>Number of Respondents</u>	<u>Percentage of Respondents</u>
Less than one year	8	2.5%
1-5 years	57	18.1%
6-15 years	67	21.3%
16-25 years	50	15.9%
Over 25 years	133	40.9%

59% of the respondents were female, 41% were male.

APPENDIX D

Strengths and Weaknesses Identify by Residents through Community Survey

Strengths

Having a downtown (49)	Downtown street repairs
Fast emergency response (20)	Sense of Pride (3)
Street maintenance (3)	Year-round activities/recreation (7)
Friendly people/citizens (28)	Environment (4)
Small-town feel (40)	Diverse housing (4)
Sense of community (30)	Adult Ed/senior programs
Attractive, clean community (38)	Art galleries in downtown
The Lake (60)	Marketfest (7)
City services, friendly and accessible staff (29)	Farmer's market
Schools (43)	Drinking water quality (3)
Welcoming city (2)	Thoughtful City planning
Less crowded city	Balance of commercial/industrial with residential development
Parks/open space (39)	Community involvement
City Council (3)	Area attractions
Location/convenient shopping/metro area (25)	Quiet (4)
Safe area/low crime (40)	Fiscally responsible city
Progressive community	Caboose update
History/Heritage (2)	Good neighborhoods
Easy access to major roadways (6)	Shopping (2)
Youth sports programs (2)	Positive redevelopment
Churches (5)	Snow removal (3)
Library (2)	Quality of life (17)
Easy to get around	Police and Fire services (14)
Good place to raise a family (9)	Diverse housing options
	Natural environment (4)

Weaknesses/Challenges

1. Recreation/Parks

No indoor swimming pool/community center (19)
 Lake access/boat launch (6)
 Need more open spaces (4)
 Not enough things for teens to do (5)
 Inordinate emphasis on youth athletics
 No lifeguards
 Need more neighborhood parks/basketball courts

2. Infrastructure/Transportation issues

Road maintenance (19)
 Lake Avenue (2)
 Storm water issues
 White Bear Ave/694 congestion
 Traffic congestion (16)
 Sidewalks in winter
 Traffic on 61/divides downtown (12)
 Boat trailer parking
 Lack of bikeways (13)
 Lack of public transportation (6)
 Lack of sidewalks (9)
 Aging infrastructure (2)
 Too many uncontrolled intersections
 Too many resources spent on beautification

3. Development/Planning/Housing

Commercial/industrial base
 Lack of apartment options for young adults
 Too much senior housing
 Need for subsidized housing (2)
 Building permit/ordinance requirements (3)
 Too many new large business buildings (3)
 Plans for Marina area (4)
 Need for more senior housing
 Aging housing (4)
 Poor development planning
 Not enough jobs in community (4)
 Trying too hard to change north side
 Too many apartment buildings

4. Operational Issues

Flowers (3)
Weeds on White Bear Avenue median
Cul-de-sac plowing
Snow plowing (8)
Speed (5)
Garbage around Cup-n-Cone/Caribou plaza
Poor traffic law enforcement (7)
Animal control (4)
Noise control (11)
Slow emergency response (6)
Need for better communication/information to residents (6)
Lack of good help in senior buildings
Noise at South Campus (3)
Lack of choice of garbage haulers
Inadequate street signs

5. Downtown/Shopping/Entertainment

Lack of downtown movie theater
Tight community/not welcoming of newcomers (3)
Loss of downtown businesses (2)
Lack of good shopping choices (6)
Lack of restaurants (10)
Lack of diversity (4)
Social conservatism
Downtown needs tune-up
Downtown parking
Lack of community feel
CVS store (3)
Need for more /shopping mix
Downtown marketing
Markeffest crowds out local businesses (2)
Need a Byerly's store (5)

6. Environment

Sustainability/environment (2)
Overuse of lake

7. Public Safety

Drugs (13)
Police apathy
Loitering (2)
Transients (2)
Safety (2)
Crime (2)

8. Community/Residents

Inner-city creeping in
Unfair treatment of people not well-known in community
Lack of focus on families and their needs
Liberal politics

9. Schools

Under-funded schools (6)
Schools/class size (5)
No ESL/ELL in community education
School taxes (2)
Reputation of schools (4)
School waste (4)
High school split (2)

10. City staff/City Council

No clear vision
Unresponsive city council (5)
Entrenched city staff
High taxes (6)

APPENDIX E

Strategic Planning Committee, 2005

Lynn Amon
Spruce Place

Suzie Hudson
5th Street

Ginny Arcand
Van Dyke Street

Pam Johnson
Elm Drive

Mayor Paul Auger
Orchard Lane

Mark Jungmann
Highland Avenue

Bill Barth
Lincoln Avenue

Doug Karle
8th Street

Brian Bonin
8th Street

Steve Laliberte
Highway 96

Councilmember Jerry Briggs
Orchard Lane

Councilmember Darryl LeMire
Otter Lake Blvd.

Councilmember Chuck DeVore
Buckbee Road

Mike Nevala
Cedar Avenue

Gene Flowers
Highway 96

Penny Norman
South Shore Blvd.

Molly Franta
Randy Avenue

Councilmember Tony Feffer
Randy Avenue

Councilmember Tom Frazer
8th Street

Sandy Rummel
Lakehill Circle

Lois Gurney
Howard Avenue

Mike Semonick
Spruce Place

Brian Hamilton
Wood Avenue

Dan Wachtler
Lake Avenue

Wayne Wise
Van Dyke Street

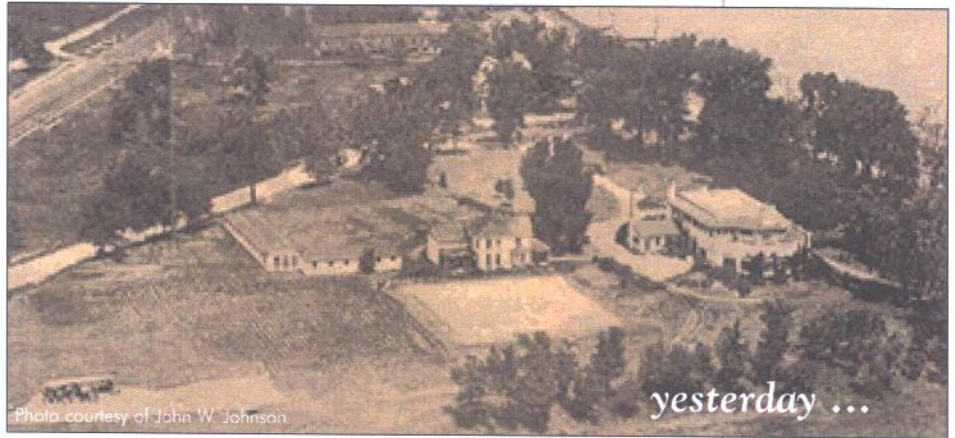
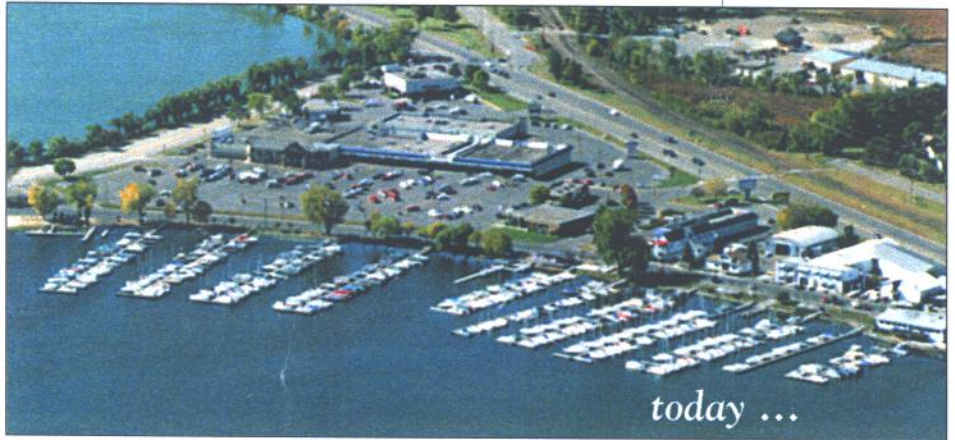
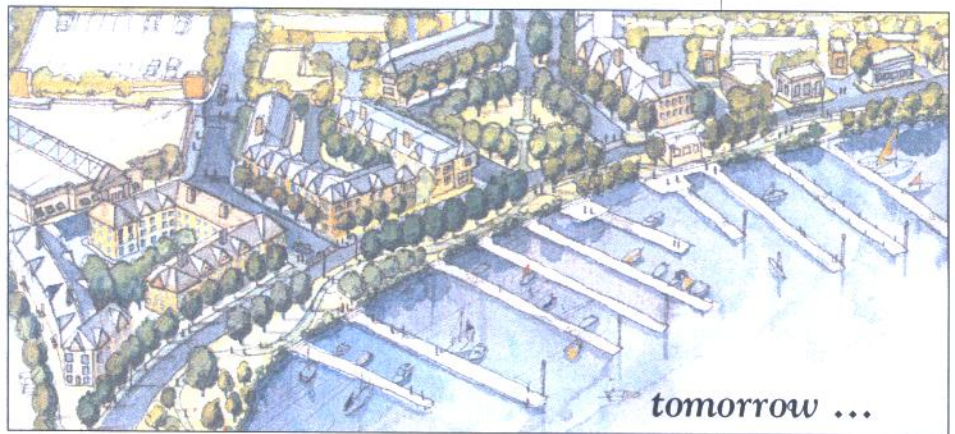


Photo courtesy of John W. Johnson

yesterday ...



today ...



tomorrow ...

White Bear Lake

Marina/Triangle District

Master Plan

Letter from the Commission

March 29, 2002

The Honorable Mayor and City Council
City of White Bear Lake, MN 55110

Mayor and City Council:

It was an honor to have been selected to advise you on this significant endeavor and it is with pleasure and pride that we submit our recommendations for long-term redevelopment of the Marina Triangle District. After nine months of study and interaction with community residents, property owners and consultants, we have prepared a plan which we believe incorporates community values, reflects both the historical and economic significance of the district and which will serve to guide future land use and policy decisions for this important area of our City.

The plan is intended to serve as an illustrative guide for future redevelopment of the District. The Commission recommends that the prime objective of redevelopment in the District is enhancement of public access, recreational activities, and social interaction through both public and private land uses. We believe that existing businesses in this area are viable and of great value to our community. We also believe that market forces will result in eventual changes in current land uses. This redevelopment guide plan endeavors to accommodate existing businesses, both now and in the future, while setting the stage for inevitable change and protecting the elements of the District we believe are most valued by the community.

Following the City Council's charge, we strived to enlist residents and other stakeholders throughout our study. This effort met with success as we experienced public participants at most of our meetings and high attendance at our two special meetings held specifically to receive public comments and suggestions.

You have stated that decisions regarding long-term redevelopment of this area will form one of the most important land use policies affecting our community in the coming decade. We concur. Protection and expansion of public access, improved environmental conditions, recreational opportunities, commerce, historical preservation, and community identity are paramount to successful redevelopment and were major issues considered by the Commission as we performed our task. This report and its recommendations address each of these concerns. Our findings and recommendations also address economic reality, physical and environmental limits of the site and opportunities to accommodate and benefit from future changes in transportation modes.

Upon completion of our work, we share high expectations that the Marina Triangle District will be successfully redeveloped to the advantage of our community, its businesses, and its owners.

Respectfully Submitted,

Marina Area Redevelopment Commission

Dean Fenner, Chair

Commission Members:

Bill Barth

Rich Fallon

Randy Fulton

Tim Geck

Janet Johnson

Jeff Klemmer

Ron Larsen

Larry Parker

Peter Reis

Molly Shodeen

Ronald Trach

Alan Willette

The Marina Triangle District - Yesterday

Understanding its History ...

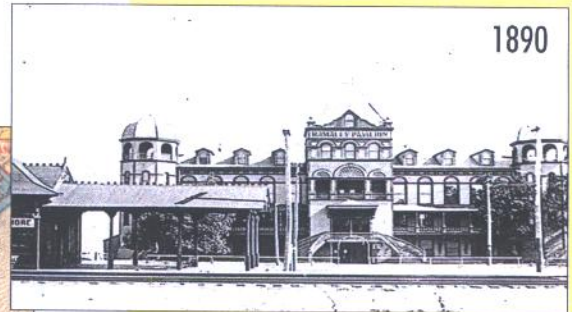
With its beautiful lakes, rich land and abundant wildlife, the White Bear Lake area attracted both Native Americans and early settlers to the region. The city itself was founded in 1858, the same year Minnesota achieved statehood. As word of its natural beauty spread, it grew into a popular resort destination, well served by the railroad and, eventually, streetcars. In the mid-1950's the area experienced rapid residential growth which was followed by significant downtown redevelopment. Today, the city's residents enjoy the advantages of being part of the Saint Paul-Minneapolis metropolitan area while residing in a community that has preserved its small town appeal, historic character and natural resources.

In the fall of 1999, the City acquired the historic Johnson's

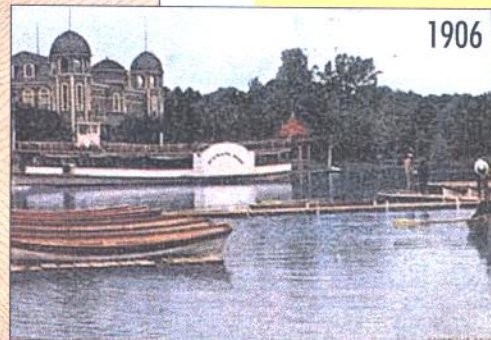
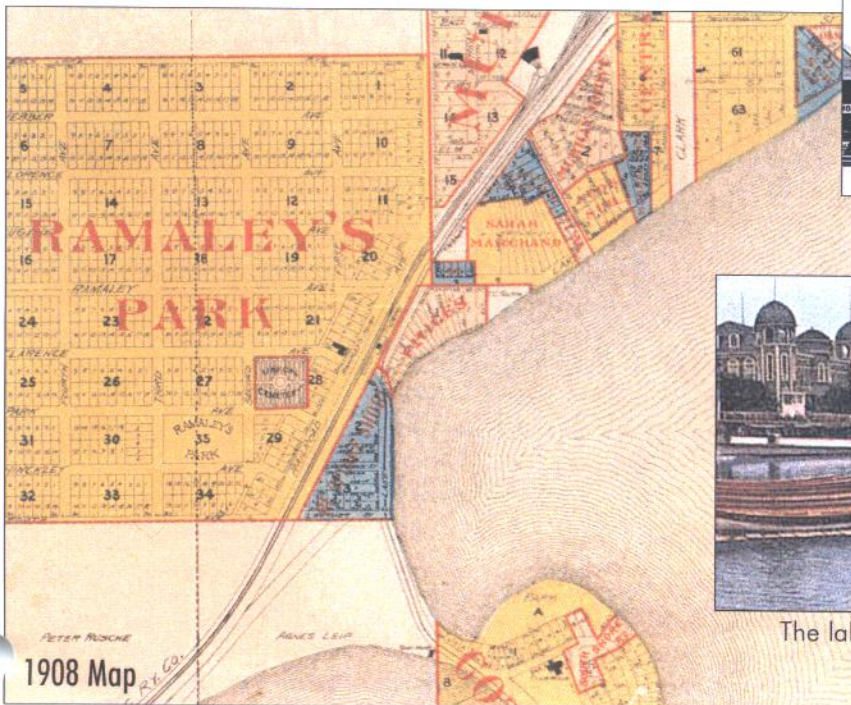


Ramaley Boat Company, 1924

Boat Works property on the west shore of White Bear Lake. These nationally renowned boat builders had previously designed and built some of the fastest and most innovative sailboats available. The Boat Works site, just over 1.3 acres, includes warehouses and residential structures, plus lake frontage with 160 boat slips.



Historic Ramaley Pavilion and train station



The lake has always been a wonderful recreational resource.

The Marina Triangle District - Today



Respecting Current Uses ...

The City recognized that with or without planning, change in the current land use mix will happen over time. The Marina/Triangle site is a case in point: land uses have evolved dramatically over the past 100 years. Today, the study area contains a mix of uses, including Johnson's Boat Works, established in the late 1800's, the White Bear Shopping Center, which was developed over forty years ago and commercial structures built during the past decade.

Master Plan Goals:

- Improve public access to the lake
- Encourage pedestrian and bicycle use
- Improve environmental quality
- Broaden the mix of land uses
- Promote the Boat Works site as a catalyst for new development
- Enhance the district as a major community focal point
- Minimize the impact on adjacent neighborhoods
- Preserve and interpret the district's heritage
- Testing ideas through an interactive process
- Enhance linkages to downtown and neighborhoods

The White Bear Shopping Center continues to be a successful destination shopping district for this region. Retaining these businesses in the Marina/Triangle District was an important consideration during the planning process. The phasing of the plan allows existing stores to relocate in new buildings on the site, while promoting the introduction of other uses, including new shops, restaurants, and housing. Building on current business success by enriching the mix of uses will create a more attractive district that encourages year-round activity.



White Bear Shopping Center is surrounded by surface parking.



The north end of the Lake Avenue has an eclectic charm worth preserving.



Highway 61, the gateway to the city, is cluttered with signs.

The Marina Triangle District - Tomorrow

Exploring Future Opportunities ...

Understanding that change is inevitable, the City commissioned a study to anticipate and guide the district's transformation over the next twenty-five years. Because the area has social, environmental, economic and historic importance for the entire community, the City was interested in exploring how new development might optimize its potential as a place for the entire community to enjoy at all times of year.

A thirteen member Commission was formed to represent both public and private interests throughout the study process. Commission members shared their ideas and visions for the study area with a focus on strengthening the lakefront as a signature public space while creating more parkland to attract year-round visitors.



Meetings were interactive and open to the public.

From the beginning, an overriding goal of the City was to conduct a very public planning process. Through a series of meetings over several months, the Commission worked together, with input from city staff, and the general public to forward a shared vision and list of common development objectives. The result of their hard work is this Master Plan for the Marina Triangle District.

Development Objectives:

- Celebrate and interpret the area's history and enhance its unique sense of place
- Strengthen connections to adjacent neighborhoods and downtown White Bear Lake
- Improve access and circulation into and through the site
- Create a well defined and connected public realm
- Integrate stormwater management into the design; improve water quality in the lakes
- Develop a land use mix that encourages extended daily and year 'round activity
- Enhance market viability by creating high-quality, adaptable architecture
- Identify and prioritize catalyst projects which stimulate redevelopment and bring about plan objectives
- Address implementation, including funding, phasing, policy requirements

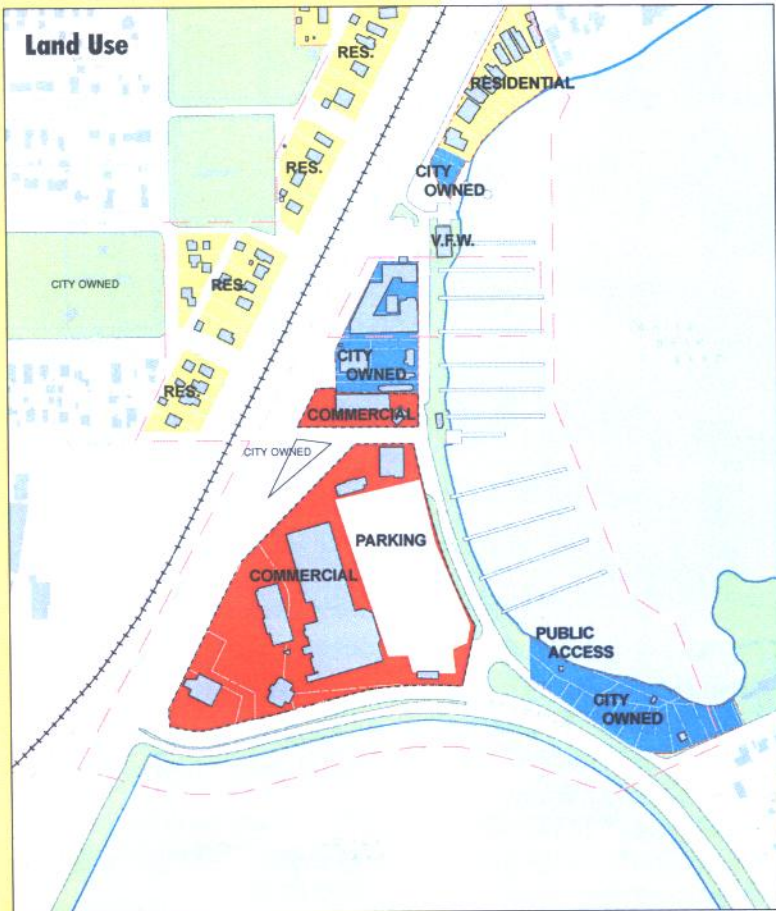


Provide a safe, attractive public edge that invites people to the waterfront.



People are attracted to sunlit, open spaces in the community.

Site Evaluation - Assets and Challenges



Strengths and Assets

Because of its distinctive mix of land uses and accessible waterfront, the Marina/Triangle District has long been a recognized destination point on White Bear Lake. Especially in summer, people are drawn to the marina with its broad sweep of open shoreline, unique to the entire lake. The point of beginning is to understand and then build on the existing assets of the site including:

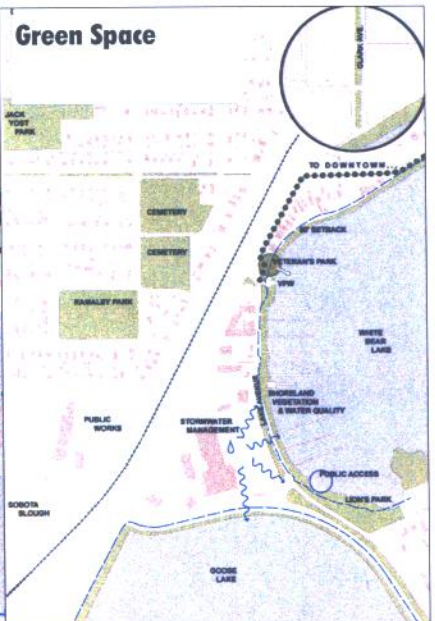
- It is accessible and has dramatic views to both Goose Lake and White Bear Lake
- Existing public parks are important community assets
- The site has a rich cultural history
- It is the only commercially zoned district on the lake
- Existing commercial uses are economically viable and provide destination shopping
- The district is conveniently located on Highway 61 and White Bear Avenue
- The area is free of ground contamination
- There are a wide variety of water-based activities

Soils and Contamination

The Marina/Triangle site is blessed with good soils, which contribute to its excellent redevelopment potential:

- The soils are native to the site (not fill material) and will support a more intensive development pattern and required infrastructure
- The soils are not contaminated - no remediation will be required
- The water table is approximately at the lake's normal water elevation, allowing underground parking beneath residential buildings
- Existing buildings are in good condition, evidence of the structural integrity of the soils

Existing land use is characterized by a mix of public and private ownership.

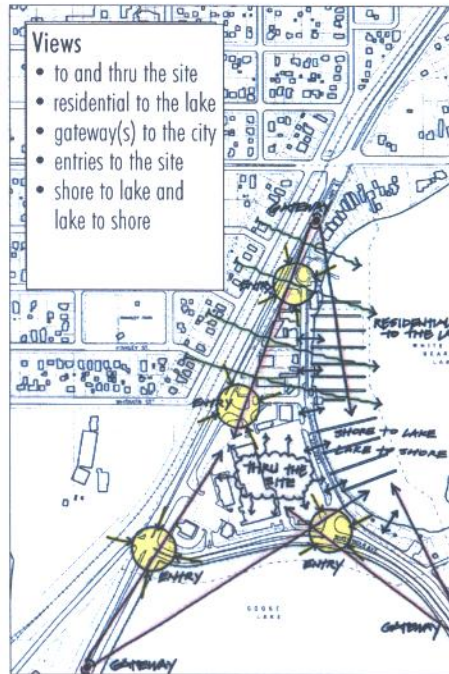


Connections to downtown White Bear are important design considerations



Edges

The site has three public edges that create ambiguity about its "front door".



Views

Views into and through the site underscore its important location in the city

Redevelopment of the District should complement, not compete, with downtown.

Economic Assessment

Current and near future market trends for the study area suggest:

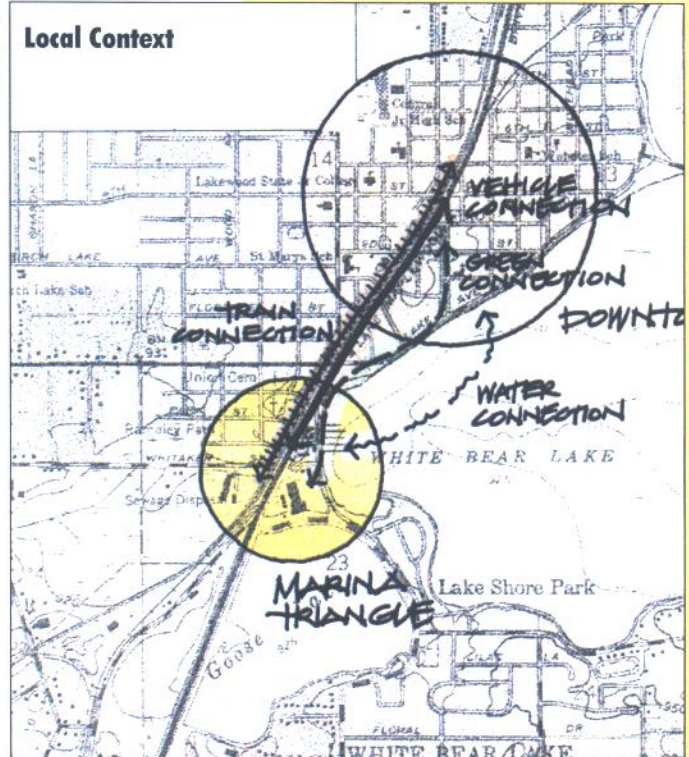
- Housing demand continues to grow and presents the greatest market opportunity for this region.
- White Bear Lake has a very low housing vacancy rate creating the potential for additional housing: rental, for-sale, market-rate and affordable.
- Demand for most major property market types (retail, office, hotel) is slowing, although above average household income and low unemployment rates have kept retail demand stable.
- There is limited current market viability for hotel or office development projects.
- Based on the lake front location and experience with similar projects, an overall development strategy that integrates a mix of uses with a variety of public amenities will provide maximum market flexibility and economic viability for this district.

Issues and Challenges

It is important to recognize and respond to a variety of existing challenges including:

- The site has three public edges, facing the lakes, White Bear Avenue and Highway 61; these create ambiguity about the site's "front door"
- White Bear Shopping Center is surrounded by large surface parking lots and is not pedestrian-friendly
- Access and circulation are confusing and not well-defined
- The district has limited year 'round activity
- Portions of the site are underutilized
- The public edge along the waterfront is undefined and potentially unsafe in places

Local Context

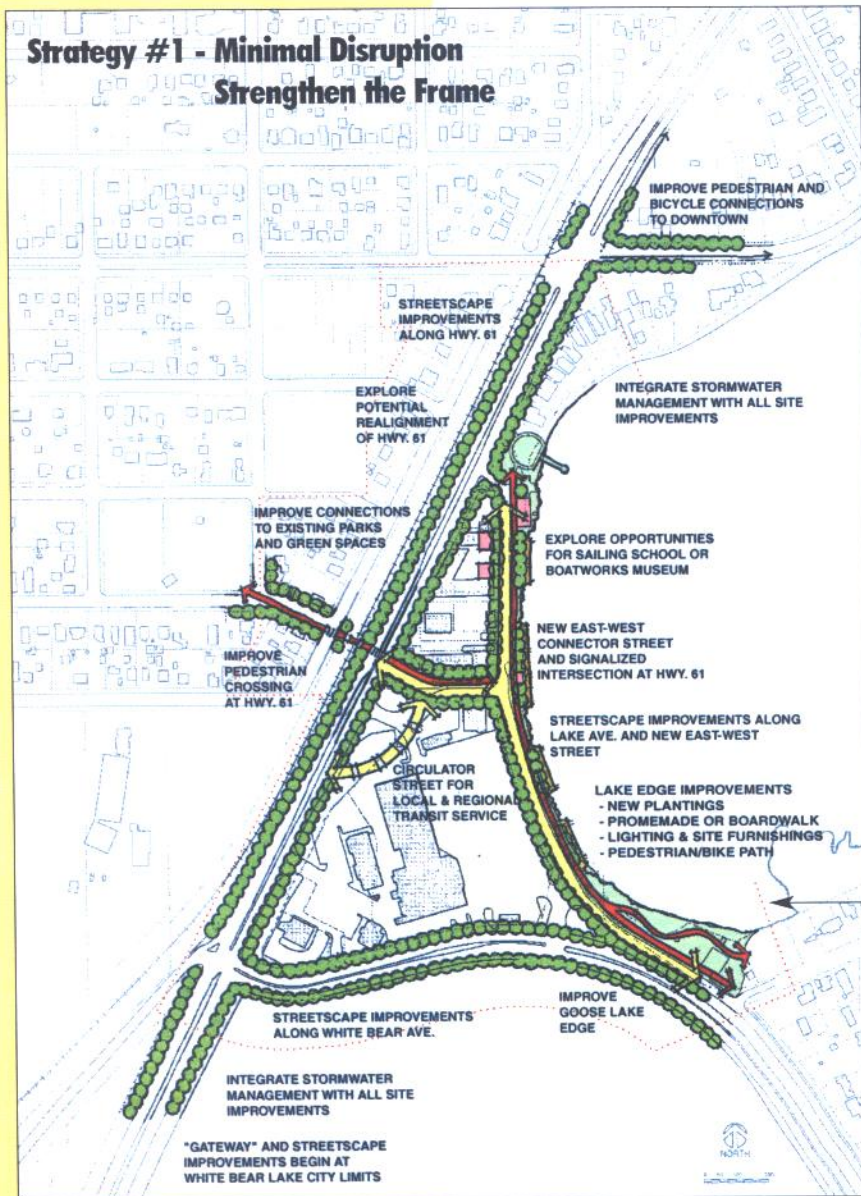


Development Strategies - Options & Outcomes

Exploring Development Alternatives

Based on their evaluation of site assets, challenges, history and a consensus list of development objectives, the Commission forwarded several options to be explored including:

- "No-build" - Maintain and improve what is already there
- Residential mixed-use - New development would be primarily residential and would integrate with existing and new retail uses in a "village-like" atmosphere
- Retail/employment mixed-use - Development would emphasize retaining existing and adding new commercial uses, in a traditional pattern of streets and blocks



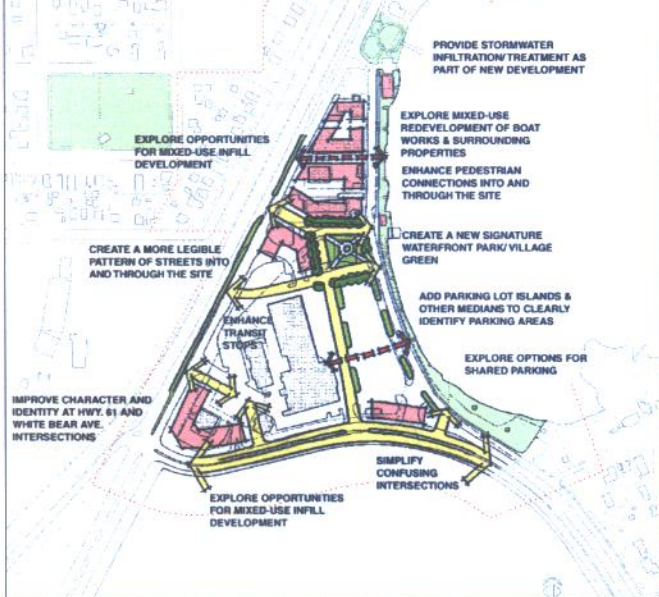
- Public realm/recreation - Development would focus on creating an interconnected public green system, with a new waterfront park and lakeside paths, landscaped streets and integrated stormwater management
- Transit-oriented development (TOD) - A new transit station proposed for the west side of Highway 61 would support higher densities of development

As planning progressed it became clear that these alternatives were interrelated, and a more realistic approach would be to consider how the site might develop over an extended period of time. The resulting strategies, illustrated on these two pages, paint a compelling picture of how the Marina/Triangle District might evolve over the next two decades.

Strategy #1 - Description

This scenario suggests that investing in the public realm is an important and realistic first step to improve the entire Marina/Triangle area, setting the stage for future development. It also points out that revenues from the sale of the Boat Works property might provide some of the funding for public improvements.

Strategy #2 - Moderate Intervention Focus on Boat Works Site



Strategy #2 -Description

This option focuses on development of the Boat Works Property, but also includes vehicular and pedestrian circulation, creation of a new waterfront village green park, and identification of several development sites.

A Note About the Village Green:

The Commission agreed that a new, more centrally located park (village green) would enhance the waterfront and serve to catalyze private investment in the triangle. However, the exact location, size and character of this amenity will be determined as part of future detailed planning and design work.

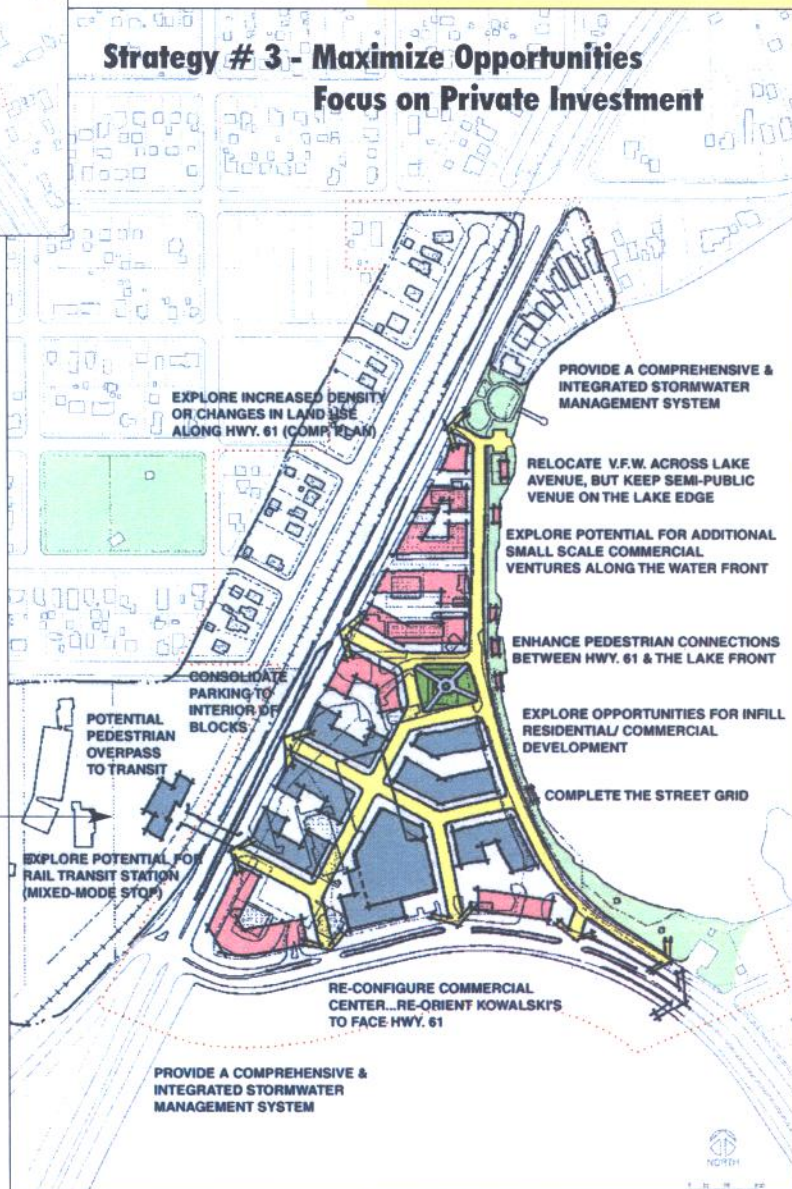
Transitional Phasing

The Commission concluded that site redevelopment should encourage a mix of uses, characterized by an enhanced public park, trail and open space system. While individual projects would contribute to the overall build-out of the triangle, each new phase of development would be supported by previous improvements. Public dollars would lead the way as 'seed money' to encourage private investment promoting public/private partnerships to implement the plan.

Strategy #3 - Description

This option envisions the complete redevelopment of the study area. The pattern of streets and blocks is complete and new land uses are introduced.

Strategy #3 - Maximize Opportunities Focus on Private Investment



The combination, or composite of these three strategies produced the Marina Triangle District Master Plan.

The Master Plan - Village on the Lake

Land Use Tabulation			
Building	Retail/Office	Residential	Required Parking
A	5,000		25
B	20,000	25	150
C	18,600	36	165
D		24	48
E		13	26
F		24	48
G	55,000		275
H		55	55
I	11,200		56
J	6,400		32
K	5,000		25
L	15,900	30	140
Recreational Uses			150*
Total	137,100 (90,000 s.f. existing)	207 (55 senior housing)	1,195

*25% of boat slips (peak days) plus visitors

A Note About Development:

While this plan represents a general consensus of opinion related to further development of the Marina/Triangle District, several Commission members expressed concern about the viability of housing and the potential for 'privatization' of the lake front. In addition, it should be noted that continued support and expansion of retail uses is a high priority for this Commission and should be emphasized in ongoing planning efforts.



Imagine a Future Visit to the Lake:

The Marina/Triangle Master Plan envisions a compact and walkable community that is active throughout the year. Tree-lined streets with gracious sidewalks, benches and attractive lighting lead to a beautiful new waterfront promenade and marina. A new village green opens onto the promenade and lake near Tally's. Ground-floor stores, including a restaurant and coffee shop, surround the park. Some have tables out on the sidewalk. A small bed and breakfast is located at the northeast corner of the park.

The character of the district reflects that of downtown White Bear and its eclectic design. Parallel parking is provided on the streets, where traffic moves slowly and pedestrians feel as though they belong. At the south end, new townhouses face White Bear and Goose Lakes. Senior housing anchors the corner at Highway 61 and White Bear Avenue. The grocery store, which now faces Highway 61, has expanded to include even more of the amenities that make it so popular.

Like downtown, surface parking lots are tucked behind buildings, are well landscaped, and are connected to the street with inviting pedestrian walkways. A parking ramp along Highway 61 is carefully designed to integrate with the other buildings on the site.

MetroTransit buses and the White Bear Lake circulator serve a climate-controlled transit stop. A weather-protected pedestrian bridge links the local transit stop to the regional rail station across the road. A new, signalized intersection at Whitaker provides safe pedestrian crossing of Highway 61 and better access for cars into and out of the site.

Stormwater is collected and treated in "rain gardens" along the pedestrian promenade. The rich landscape reflects the beauty and variety of the community, with canopy trees, shrubs, perennials, and native plantings.

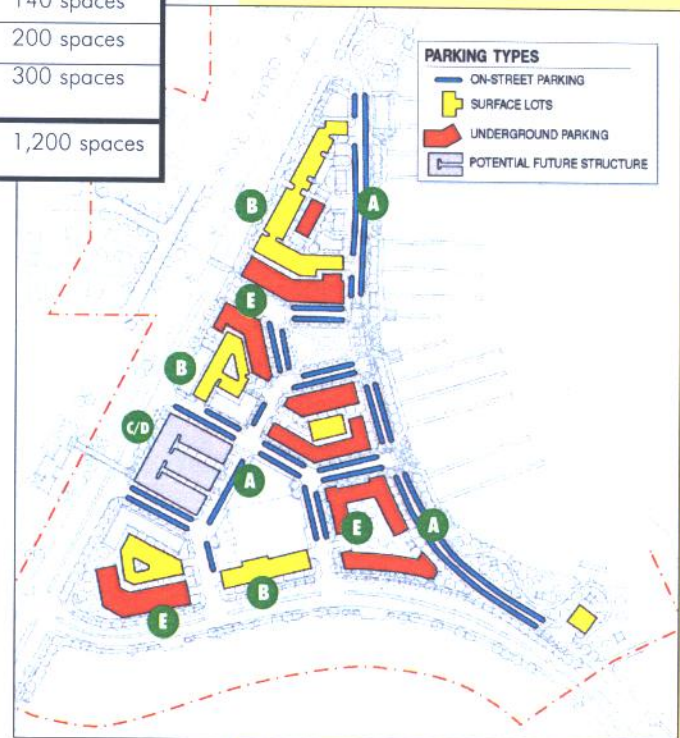
A Note About Parking:

Based on existing city zoning criteria, 1045 parking spaces are needed to serve the proposed mix of uses defined by the Master Plan on page 10. An additional 150 spaces have been identified to serve the boating and recreational users along the waterfront, for a total of 1,195 spaces. The parking tabulation above suggests that 1,200 spaces will be included as part of the overall Marina/Triangle development strategy. It has also been suggested that satellite parking be provided, perhaps at the public works property (including shuttle service) to accommodate boat trailers, long-term parking and special events parking needs.

Parking Tabulation (approximate)	
A on-street	260 spaces
B off-street	300 spaces
C large-lot	140 spaces
D structured	200 spaces
E Underground (under residential)	300 spaces
Total	1,200 spaces

Proposed Implementation Sequence and Activities

- Development of the waterfront, Lake Avenue and frontages along White Bear Avenue and Highway 61 (mostly public investment)
- Redevelopment of the Boat Works site, with parking behind (public/private partnership)
- Creation of the village green and property immediately surrounding it, with several property owners working together (public/private partnership)
- Redevelopment of "pad sites" at the edges of the site (private investment)
- Development of new streets and infrastructure (public/private partnership)
- Remainder of site redevelopment (mostly private investment)



Development Guidelines - Commission Recommendations

Overview

Development rarely occurs all at one time. It is usually an incremental process, including different developers at different times with different approaches to their work. For this reason, guidelines are an essential part of the Master Plan; they ensure that there is consistency throughout the district, while not prohibiting diversity in architecture and streetscape design. These guidelines are based on specific recommendations from the Commission.

Architectural Guidelines:

Architectural guidelines describe the general character of the proposed "family" of buildings:

- Buildings should be 2 - 3 stories maximum height.
- Front doors should face the sidewalk: commercial buildings should have the first floors at-grade; residential buildings may be elevated 3-4 feet above the street and sidewalks.
- Commercial buildings should have continuous display windows facing the sidewalk; residential buildings should also have numerous front windows.
- Residential and office uses are encouraged above commercial store fronts.
- High quality materials (brick, stone, stucco, steel) should be used throughout.
- A mix of traditional and contemporary architectural design is acceptable and no effort should be made to standardize design or color.



#1 Land Use Mix

Accepted uses include: retail, office, parks/green space, residential, working marina/'ships store', bed and breakfast hotel, boat works museum. Overall, there should continue to be an emphasis on retail, shopping, office and restaurant uses.



#2 Scale/Height/Density

Buildings should generally be 2 stories, but 3 story buildings may be appropriate around the Village green and along Highway 61 and White Bear Avenue. Typically, ground floor retail with office or residential above is recommended.

#3 Parks/Open Space

Create a centrally located village green, widen and enhance lake front public promenade connecting Vet's Park to Lions Park (also providing an important link in the future loop trail around the lake), widen and enhance 'green street' connections to existing city parks (including west of Hwy 61) and downtown including a new signalized intersection and boulevard street into the site.



#4 Parking (quantity/location/type/character)

Continue to explore a range of options including on-street, small surface lots internal to the block, shared parking in strategically located large surface lots, underground to serve residential buildings, structured parking (future) as needed.

#5 Waterfront Promenade

Explore separation of uses, i.e. active uses such as biking and rollerblading should be separated from the more passive walking and sitting areas where possible - continue to pursue more overall width for the lake shore public edge; integrate stormwater management system with design solutions.



Photo credit: example photographs to illustrate guidelines and development character have been provided by Smith Group/JJR.

Site Design Guidelines:

Site design guidelines focus on the relationship between buildings and the spaces they frame.

- Semi-private spaces between buildings should have a strong visual/physical connection to the street and sidewalk; private spaces may be screened.
- Commercial buildings should front onto the sidewalk; residential buildings may be set back 10-20 feet, creating a small front yard.
- Lighting and landscaping should be included in all semi-private spaces.
- Locate parking beneath and behind residential buildings and in well-designed parking structures or landscaped, screened surface lots.
- Multiple streetfront structures and ownership should be encouraged.

Public Realm Guidelines:

Public realm guidelines include streets, sidewalks, parks and the waterfront promenade.

- Provide a connected and accessible system of public spaces that links to streets, sidewalks and parking areas.
- Encourage outdoor use areas, including sidewalk seating and terraces with views of the street and lakes.
- Provide adequate - but not excessive - lighting of an appropriate scale and character
- Establish a high level of maintenance
- Create "traffic-calmed" streets, with parallel parking and safe crosswalks
- Promote a 'waterfront' design theme for public realm improvements
- Increase pervious and semi-pervious surfaces

Development Character - Retail/the Village Green



View through the Village Green to the lake.

Features and Facilities

- Accommodates small and large groups
- Becomes a new focal point for the district
- Links directly to the promenade and waterfront
- Promotes stormwater infiltration
- Contains a pavilion, benches and gardens
- Provides an amenity for surrounding shops and restaurants.



The Village Green is a new, signature public space in the City of White Bear Lake. Unique because of its waterfront location in an active, mixed-use district, the green can accommodate a variety of activities, from casual, informal use on a daily basis, to celebrations and community gatherings, both public and private, on special occasions. Lake Avenue goes around the square, allowing pedestrians to walk from the green to the promenade and marina without crossing a street. Like Railroad Park, shops face onto the park, perhaps with a small pavilion as a focal point to provide shelter from both sun and rain.

The Village Green contributes to the treatment of stormwater, through the use of attractive "rain gardens." Mostly soft greenscape, the square also includes a paved area to accommodate larger groups of people and performances that occur there. Buildings surrounding the green are nicely detailed, with large windows and retail activity spilling out onto the sidewalks.



A mix of retail uses will surround the new Village Green

Direct access to the lakefront will provide a safe and attractive destination for residents and visitors alike.

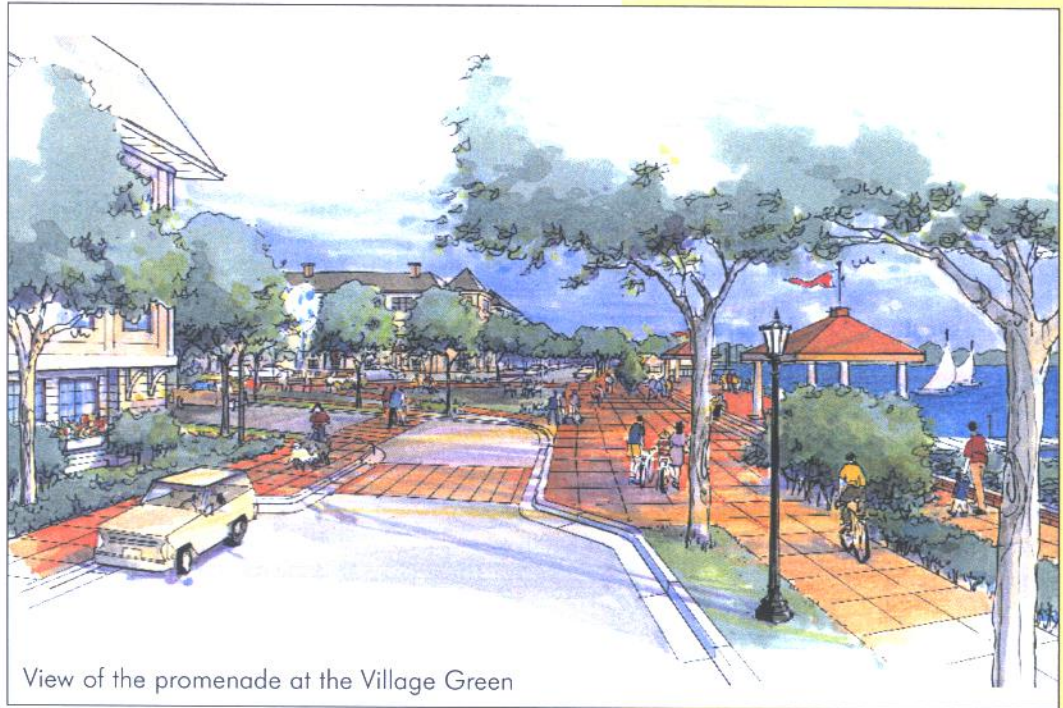
Development Character - Retail/the Promenade

White Bear Lake is one of the cleanest and most attractive lakes in the Twin Cities metropolitan area.

The Marina/Triangle District is the only commercial district on the lake. It is a busy place in the warm months, with boaters, shoppers, bicyclists, and sightseers sharing the street and waterfront. The new public promenade will create a welcoming, exciting and safe place for residents and visitors to enjoy the waterfront as they frequent the nearby shops and stores.

Additional entertainment and water-oriented retail shops along the promenade (similar to Tallys) will bring more activity to this important edge and enhance the lake-side experience.

Separated pathways for bikers, bladers and walkers will front on the lake.



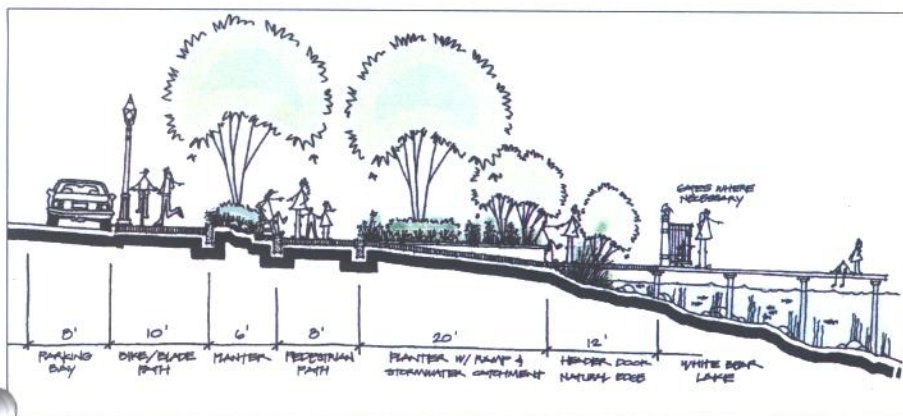
View of the promenade at the Village Green



Features and Facilities

The promenade will provide a gracious and safe public waterfront:

- Lake Avenue is a quieter street, broken at the Village Green, with parallel parking on both sides for boaters and other visitors to the area
- Bicyclists and roller-bladers use a 10' wide path adjacent to the road; pedestrians use an 8' sidewalk closer to the lake
- A boardwalk steps down to the water's edge, enhancing public access to the docks while protecting the shoreline ecosystem
- "Rain gardens" are integrated into the design so water can be filtered before entering the lake
- New townhouses and new shops front directly onto the Promenade, bringing year-round activity to the waterfront



Landscaping and "rain gardens" are integrated into the design of the promenade.

Development Character - Retail/Residential



View to the lake along a new residential street.

New housing, both rental and for-sale, will energize and improve security in the Marina/Triangle District as well as help provide the financial resources for public improvements. It is the presence of people, after all, that makes a community safer and more attractive to others. In contrast to the rest of residential White Bear Lake, the marina area has a very public character and is regularly visited by both locals and visitors.

Features and Facilities

- Front doors facing the street
- Parking beneath or behind buildings
- Mix of contemporary and traditional architecture
- Scale reminiscent of downtown
- Mix of for-sale and rental; mix of income levels
- Integration of some retail uses below apartments

Well-designed townhomes, flats and rental apartments will bring a new vitality to the district. Housing for seniors will also be included. The mix of housing types allows people of varying ages and incomes to move into this waterfront village and enjoy the advantages of having commercial, recreational and employment opportunities immediately outside their front doors. Around the Village Green, apartments will be located above new or relocated stores and restaurants.

The neighborhood will not be exclusive: instead, it will be reminiscent of the older neighborhoods around downtown White Bear Lake, with two-story townhouses and some three story rental housing, similar to the senior housing on the east edge of downtown.



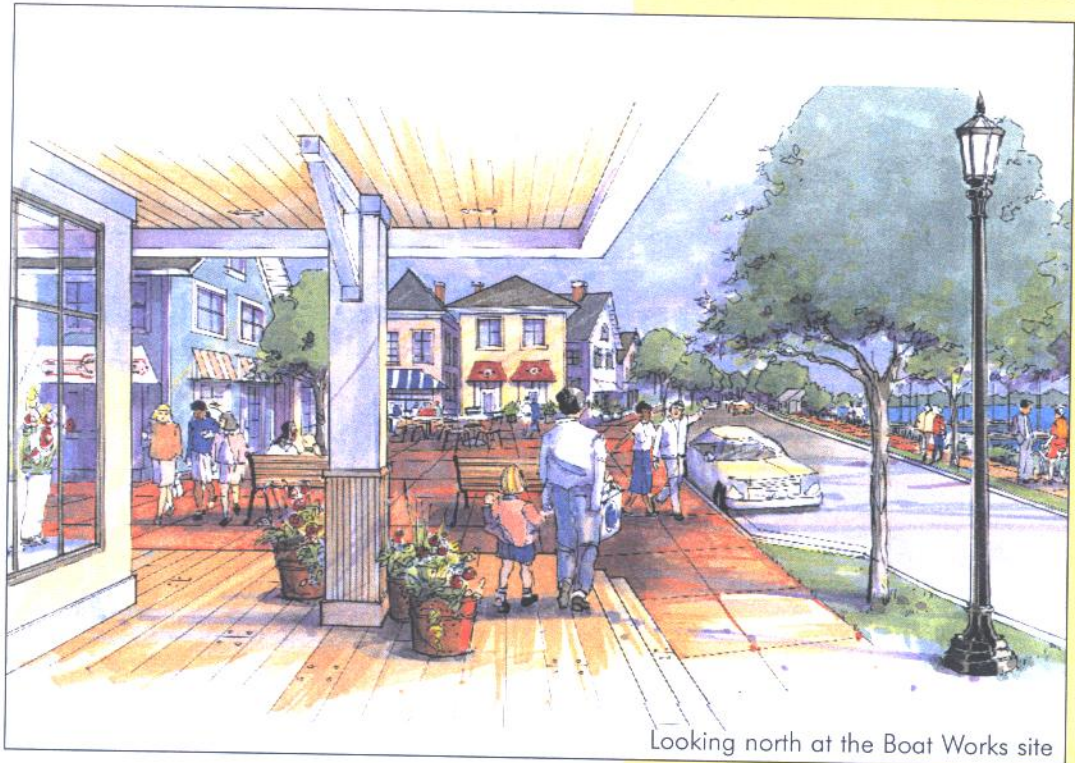
Residential streets will have an intimate character similar to neighborhoods near downtown White Bear Lake.

Development Character - Retail/the Boat Works

The Boat Works property has a distinctly different character than the remainder of the Marina/Triangle study area. Very much a working waterfront, the utilitarian architecture and ad hoc arrangement of buildings reinforces the honest quality of the Boat Works site.

The redeveloped property will retain the intimate scale, informal charm and mix of activities that has historically existed on the site, potentially keeping some of the Boat Works operations for maintenance and support of watercraft activities. A small

interpretive area, perhaps in a mini-museum, will describe the history of the site and Johnson's Boat Works. Lofts or small-scale housing, a "ships store" and other small storefronts will surround a common courtyard facing the lake. Walkways will connect parking behind the shops and houses to the courtyard and street, similar to downtown White Bear.



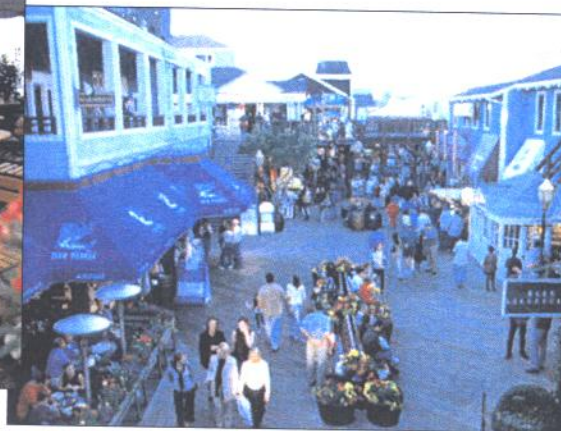
Looking north at the Boat Works site

Features and Facilities

- Intimate scale and informal charm
- A mix of uses and activities in a compact area
- Parking concealed behind the buildings
- Interpretive opportunities
- Small courtyards with seating and food
- Wonderful views to the lake
- Existing retail relocated into new storefronts
- Addition of new retail - small shops and cafes



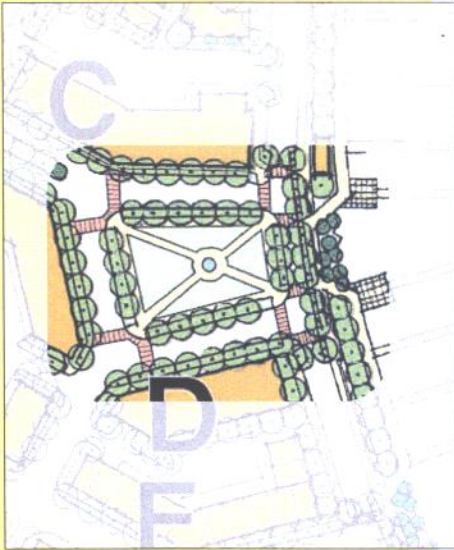
Intimate courtyards will contribute to the charm of the Boat Works property.



Retail uses and a small museum will bring a variety of people to the area.

Priority Projects - Getting Started

Village Green and Adjacent Properties



The Village Green will become a new signature space in the city.

Project Description:

As part of the redevelopment of the Marina/Triangle District, a new public park is proposed for the site currently containing the dental office building and Taco John's. This green would be surrounded by new development, including for-sale and rental housing, commercial and office uses. Existing businesses could be incorporated into new development.

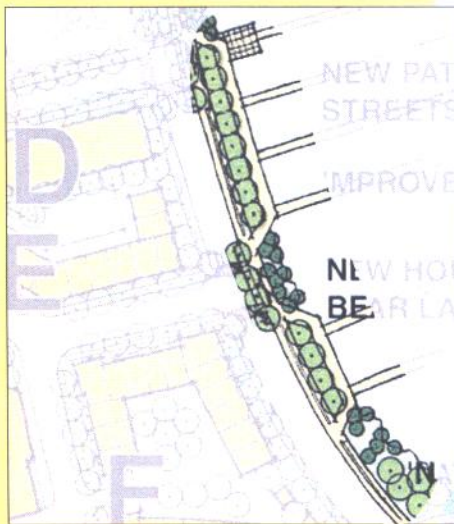
Outcomes we seek:

- Create a centrally located, signature public space that opens to the lake
- Enhance the lake edge and public promenade
- Increase property values and use public investment to stimulate development
- Create rain gardens to improve water quality
- Provide new storefronts for existing and new businesses
- Provide public space for seasonal events and community gatherings

Next Steps Checklist:

- Explore collaborations between property owners and the City
- Consider land swaps of publicly and privately owned land to create appropriate building sites
- Convene a developers' roundtable to garner interest and identify issues
- Move forward with preliminary design of the Village Green
- Solicit development proposals when appropriate

Lake Edge Public Promenade



An improved promenade will be safer and more inviting.

Project Description:

The proposed redevelopment will create year 'round activity in the Marina/Triangle District, and a safe and attractive public edge along the lake is an essential part of the plan. The promenade will include two parallel walks separated by plantings, one for bicycles and roller-bladers and one for pedestrians. A boardwalk will provide access to the water's edge and docks. A series of rain gardens will be integrated into the design to collect and cleanse stormwater before it reaches the lake. Both residential and commercial uses will front on the promenade.

Outcomes we seek:

- Create a beautiful and safe public waterfront that accommodates a wide range of users
- Provide better connections between Lion's Park, Vet's Park and the new centrally locate Village Green
- Integrate the new regional bike trail into the development
- Create an amenity for commercial and residential uses
- Provide continuous public access to the lakefront

Next Steps Checklist:

- Work with private landowners, the DNR and Conservation District to establish environmental goals and programmatic requirements for the waterfront area
- Develop design criteria for trails, rain gardens, streetscape design, etc.
- Integrate regional trail into the design
- Pursue funding sources for design and implementation of public improvements

Lake Avenue Improvements

Project Description:

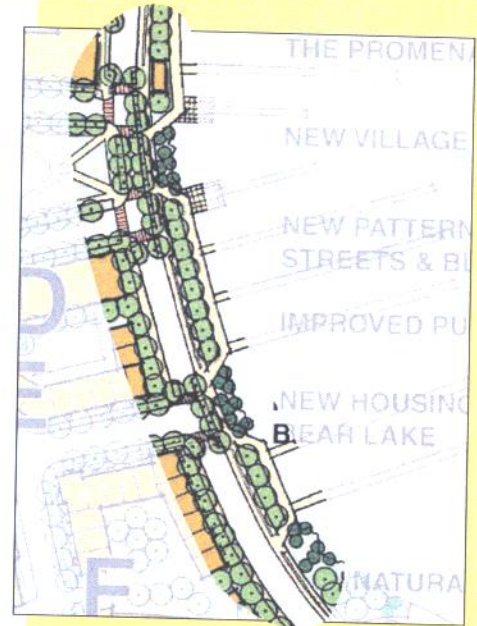
As part of the development of the promenade and enhanced lakefront, Lake Avenue will be redesigned and upgraded to accommodate two-way traffic south of the Village Green and northbound one-way traffic north of the Green; provide parallel parking on both sides, and discourage use of the street as a shortcut through the district. The plan calls for creating a "traffic-calmed" narrow street, which is diverted around the new Village Green.

Outcomes we seek:

- Create a safe and attractive road that serves residents, businesses and recreational users
- Provide a reservoir of parking along the length of Lake Avenue
- Create a "calmed" roadway, diverted around the Village Green, to enhance access to the site while controlling cut-through movement

Next Steps Checklist:

- Commission a traffic study to assess the issues and options for Lake Avenue redevelopment - traffic projections and patterns
- Establish design criteria for the proposed roadway
- Identify available funding sources and strategies



Lake Avenue needs to provide access to the district while becoming a "calmed" roadway.

The Boat Works Property

Project Description:

The City's purchase of the Boat Works property prompted this planning study. A successful, historic business, the Boat Works has a unique charm that adds to the area's role as a working waterfront. With careful design and redevelopment, the Boat Works property can retain some of its allure and stimulate retail and residential investment elsewhere in the district.

Outcomes we seek:

- Promote redevelopment that is sympathetic to the Boat Works' past and reinforces its unique scale and character
- Explore possibility of using resources from the sale and redevelopment of the Boat Works site to develop the waterfront promenade and other public amenities
- Stimulate additional interest in the Marina/Triangle district
- Incorporate both retail and residential uses

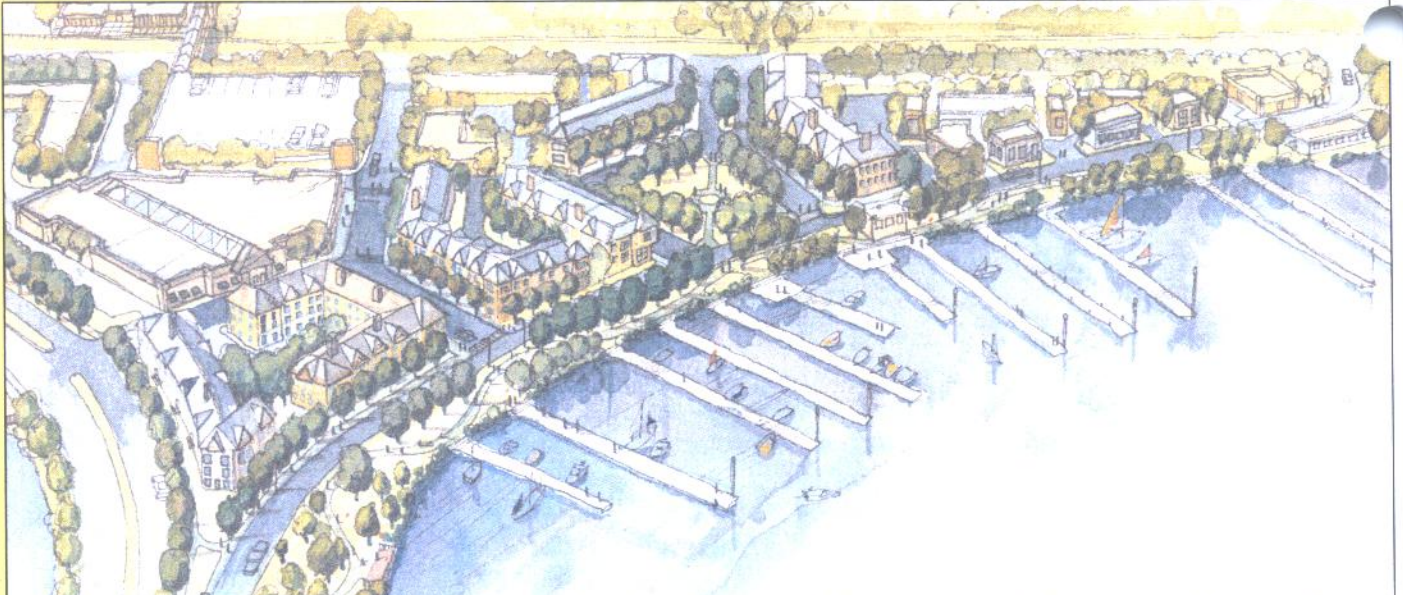
Next Steps Checklist:

- Develop program and design criteria for the Boat Works property
- Solicit proposals from interested developers
- Identify funding sources and strategies



The Boat Works property has a charm and authenticity worth preserving.

For More Information



White Bear Lake is a thriving community on the shores of one of the most beautiful recreational lakes in the Twin Cities metropolitan area. Its small-town charm has made it a desirable place to live, work and play for over a century. The proposed Marina/Triangle District redevelopment plan envisions the transformation of a 1960's era shopping center into a lakeside community, where a mix of residences and stores line pedestrian-friendly streets and where a new village green and gracious promenade welcome people to the lake.

Study Team:

Led by Close Landscape Architecture, the Design Team included a talented and experienced group of people, with project work on both the local and national level.

Close Landscape Architecture (Urban Design and Landscape Architecture)

- Bob Close
- Bruce Jacobson
- Ben Erickson
- Andrew Caddock

SmithGroup/JJR

(Landscape Architecture and Waterfront Design)

- Ed Freer

Meyer Mohaddes

(Traffic and Transportation)

- Fred Dock

Hammel Green and Abrahamson, Inc., Architects

(Urban Design and Architecture)

- Mike Lamb

Elness Swenson Graham Architects

(Urban Design and Architecture)

- Pete Keely

ConsultEcon, Inc

(Market Analysis and Economics)

- Tom Martin
- Ethan Colaiace

A Note About the Master Plan

The primary purpose of this document is to serve as a guide, a vision for the future of the Marina Triangle District. It is a concept and a true beginning for much more discussion and detailed refinement as pieces of the plan are funded and then implemented. And finally, it represents a long term strategy, supporting thoughtful planning and careful development for the next few decades. It is important to remember that this plan is designed to be flexible and respect changes in the marketplace.

For more information contact: City of White Bear Lake, Mark Sather, City Manager; Jim Robinson, Planning Director. 651-429-8561

Acknowledgements:

The Consultant Team would like to acknowledge the energy and commitment of those who helped guide our work, including the Commission members (listed inside the front cover), Mark Sather and Jim Robinson of the City staff, who gave freely of their time and expertise, and countless community members, who took the time to attend meetings and open houses and give us much-needed feedback as we developed this plan.

The participation of everyone involved with this planning process was characterized by a willingness to set aside personal agendas and think about the future of this exceptional community. There is a thriving civic spirit in White Bear Lake, and we have been honored to work with the people of this community on the development of this plan.

CITY OF WHITE BEAR LAKE

WATER MANAGEMENT PLAN

NOVEMBER 1997

4701 HIGHWAY 61
WHITE BEAR LAKE, MN 55110
(612) 429-8531

This plan was prepared for the City of White Bear Lake by:

ARLIG ENVIRONMENTAL, INC. and
Rani Engineering, Inc.

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

ACKNOWLEDGEMENTS

Both the necessary data base and resources to support the development of this plan were available from each of the four watersheds bounding the City of White Bear Lake. Excerpts, whole and in part, were used in the preparations of this document to ensure conformance with WMO guidelines.

REFERENCES

1. Ramsey-Washington Water Management Organization
2. Rice Creek Water Management Organization
3. Vadnais Lake Area Water Management Organization
4. Valley Branch Water Management Organization
5. City of Vadnais Heights Surface Water Management Plan.
6. Metropolitan Council Surface Water Management Practices Evaluation, December, 1983.
7. Ramsey County Soil and Water Conservation District, May, 1980
8. Minnesota Pollution Control Agency Protecting Water Quality in Urban Areas, Best Management Practices for Minnesota
9. Westside Storm Sewer Study, Orr-Schelen-Mayeron and Associates, June 1976.
10. United States Department of Agriculture, Soil Conservation Service, incooperation with the Minnesota Agriculture Experiment Station Soil Survey of Washington and Ramsey Counties, Minnesota
11. White Bear Lake City Comprehensive Plan.
12. Metropolitan Surface Water Management Act, Chapter 509, Laws of 1982, Minnesota State Statutes Sections 473.875 to 473.883, Amended 1987, Chapter 207.

13. City of White Bear Lake Public Works Department.
14. City of White Bear Lake, Flood Insurance Rate Map, No. 270386A, 1987.
15. William Walker, Design Calculations for Wet Detention Ponds, October 1987.
16. NURP - Volume I - Final Report.
17. Minnesota Department of Natural Resources Division of Waters, Protected Waters and Wetland Map; Ramsey County.
18. Ramsey County Erosion and Sediment Control Handbook, Ramsey County SCS, 1989.

CITY OF WHITE BEAR LAKE
WATER MANAGEMENT PLAN

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EXECUTIVE SUMMARY

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

EXECUTIVE SUMMARY

The City of White Bear Lake Water Management Plan has been prepared according to the 1990 Recodified State Statute 103B. The Plan is subdivided into five sections; an Introduction (1), Physical Environment (2), Objectives and Policies (3), Management Strategies (4), and Plan Implementation (5).

Although some reduced size maps are included in this document, zoning and storm sewer maps are on file at City Hall along with larger scale wetland mapping.

- Historically, White Bear Lake has had a commitment to Water Management issues. The City has made wetland preservation a high priority by establishing a Wetland District and a Wetland Ordinance. The City also has Shoreland and Floodplain Ordinances. Erosion and sediment control plans for any land disturbance greater than 100 cubic yards are required through the City's Land Alteration Permitting process.
- Since White Bear Lake is more than 90% developed, post-development rates of runoff will not vary substantially from the present rates. Therefore, in Section 2 of the Plan, only the rates that discharge to adjacent communities are reported. Most of the development in the City has incorporated natural drainage patterns and the use of detention basins. Flood levels, peak discharges and storage volumes of the basins which accommodate 100-year, 24 hour storm events are included in Section 2.

The Objectives and Policies were compiled from several sources, including Rice Creek Watershed District, Vadnais Lake Area Water Management Organization, Ramsey-Washington Metro Watershed District and Valley Branch Watershed District. This plan has been prepared in conformance with the criteria set forth in the plans of the aforementioned organizations. Copies of the water management plans of the watershed organizations are on file at City Hall. *The watershed organizations shall continue to administer all water resource permiting responsibilities.*

The Plan itself is described as having major divisions. Those divisions are coordination with other agencies, capital improvements, community education, and a maintenance plan. There are eight capital improvement projects recommended for the future. The City intends to construct those projects in the future as funding is available.

The Implementation section (Section 5) includes the Plan process divided into three major divisions. The process requires that the City take regulatory actions, begin implementation, and develop a capital improvement process.

The White Bear Lake Water Management Plan will be in effect after it has been approved by Rice Creek Watershed District, Vadnais Lake Area Water Management Organization, Valley Branch Watershed District, and Ramsey-Washington Metro Watershed District, submitted to the Board of Water and Soil Resources and approved, and then is adopted by the City Council of White Bear Lake. It is understood that White Bear Lake will continue its commitment to improving water management within the City and the management of water conveyed from the City to locations outside the corporate limits.

SECTION 1
INTRODUCTION

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

SECTION 1 - INTRODUCTION

1.1 AUTHORIZATION AND NEED

The Metropolitan Water Management Act was re-codified and enacted into State Statute 103B in 1990.

The 1984 statute required that the Watershed Districts prepare watershed management plans. Three watershed management districts and one watershed management organization exist within the boundaries of the City of White Bear Lake. Rice Creek Watershed District (RCWD) prepared a revised plan in 1986 which was revised, updated and approved by the Board of Water and Soils Resources (BWSR) in October 1990 and August 1994. Valley Branch Watershed District (VBWD) prepared a plan in 1994 which was approved by BWSR in 1995. Ramsey-Washington Metro Watershed District (RWMWD) prepared a plan in 1986 which is currently being revised. The Vadnais Lake Area Watershed Management Organization (VLAWMO) plan was approved in 1997. The City of White Bear Lake is required to submit a local municipal Water Management Plan to the Watershed Districts/Organization within two years of BWSR approval of the plans.

- The VLAWMO is a water management organization formed in 1983 through a joint powers agreement ratified by seven local units of government. White Bear Lake is one of the units which has entered in the joint powers agreement. The agreement was amended in 1997.
- Cities in the Metropolitan area are impacted by increased environmental concerns. Those concerns include loss of wetlands, wastewater treatment issues, construction erosion and sedimentation problems, shoreland development issues, groundwater protection and water quality degradation issues. The impact of these environmental concerns affects recreational opportunities and aesthetic considerations. It also affects ecological diversity and wildlife habitat.
- City Councils and staffs are under varied pressure from home owners, park and recreation users, land developers, real estate agents, and environmental groups in their communities. A general environmental consciousness impacts all these groups. The State Statutes and the political climate make water management planning an important issue. The City of White Bear Lake has already incorporated water management into ordinances and zoning codes. The City has also included water management projects in the annual budget in past years.

1.2 BACKGROUND

The City of White Bear Lake is located on the north, west, and south sides of White Bear Lake in Ramsey County with a small portion in Washington County. The City is bounded to the north by White Bear Township, to the west by Vadnais Heights and Gem Lake, to the south by Maplewood, and to the east by Birchwood and Mahtomedi. White Bear Lake is generally bounded

to the west by Interstate 35E, to the north by the Soo Line Railroad, to the south by Interstate 694, and to the east by East County Line Road. The City covers 10.06 square miles or about 6,450 acres. Map 1 illustrates the geographic location of White Bear Lake.

- White Bear Lake has several lakes and wetlands, providing recreational opportunities and environmental value. The largest of these, White Bear Lake, covers over 2,500 acres. There are four major watersheds with approximately 2,400 acres in VLAWMO, 2,075 acres in RWMWD, 1,725 acres in RCWD and 235 acres in VBWD. Map 2 illustrates the areas of the watersheds within the City.

land & water

Land in the City of White Bear Lake is more than 90% fully developed, with only a few undeveloped areas throughout the City. One undeveloped area is along the Interstate 35E corridor north and south of Trunk Highway 96. Commercial and light industrial development is anticipated for this area. Another area of potential development is along the Trunk Highway 61 corridor north of T.H. 96. Public and residential developments are expected. Another major area of future development is east of T.H. 61, south of County Road E, where residential and commercial development are anticipated. Existing and proposed land use maps are included in Section 2. The proposed land uses do not introduce significant changes that would affect rates and volumes of stormwater runoff.

Many of the waters and wetlands in the City of White Bear Lake are designated as State Protected Wetlands and Waters or are incorporated into the City's official zoning map and designated as City protected wetlands. Other wetlands are identified on the National Wetland Inventory maps which are under the jurisdiction of the U. S. Army Corps of Engineers (COE).

The White Bear Lake Conservation District completed a water quality report for the lake in 1990.

1.3 PURPOSES OF WATER MANAGEMENT PROGRAMS

The Metropolitan Water Management Program (Statute 103B.201 to 103B.255) is a re-codified version of Chapter 509 Watershed Plan. It was adopted by the Minnesota legislature in 1990. The purpose of the program and the objectives of the plan are reprinted below:

"103B.201 METROPOLITAN WATER MANAGEMENT PROGRAM PURPOSE."

The purposes of the water management programs required by sections 103B.205 to 103B.255 are to:

- (1) protect, preserve and use natural surface and groundwater storage and retention systems;
- (2) minimize public capital expenditures needed to correct flooding and water quality problems;
- (3) identify and plan for means to effectively protect and improve surface and groundwater quality;

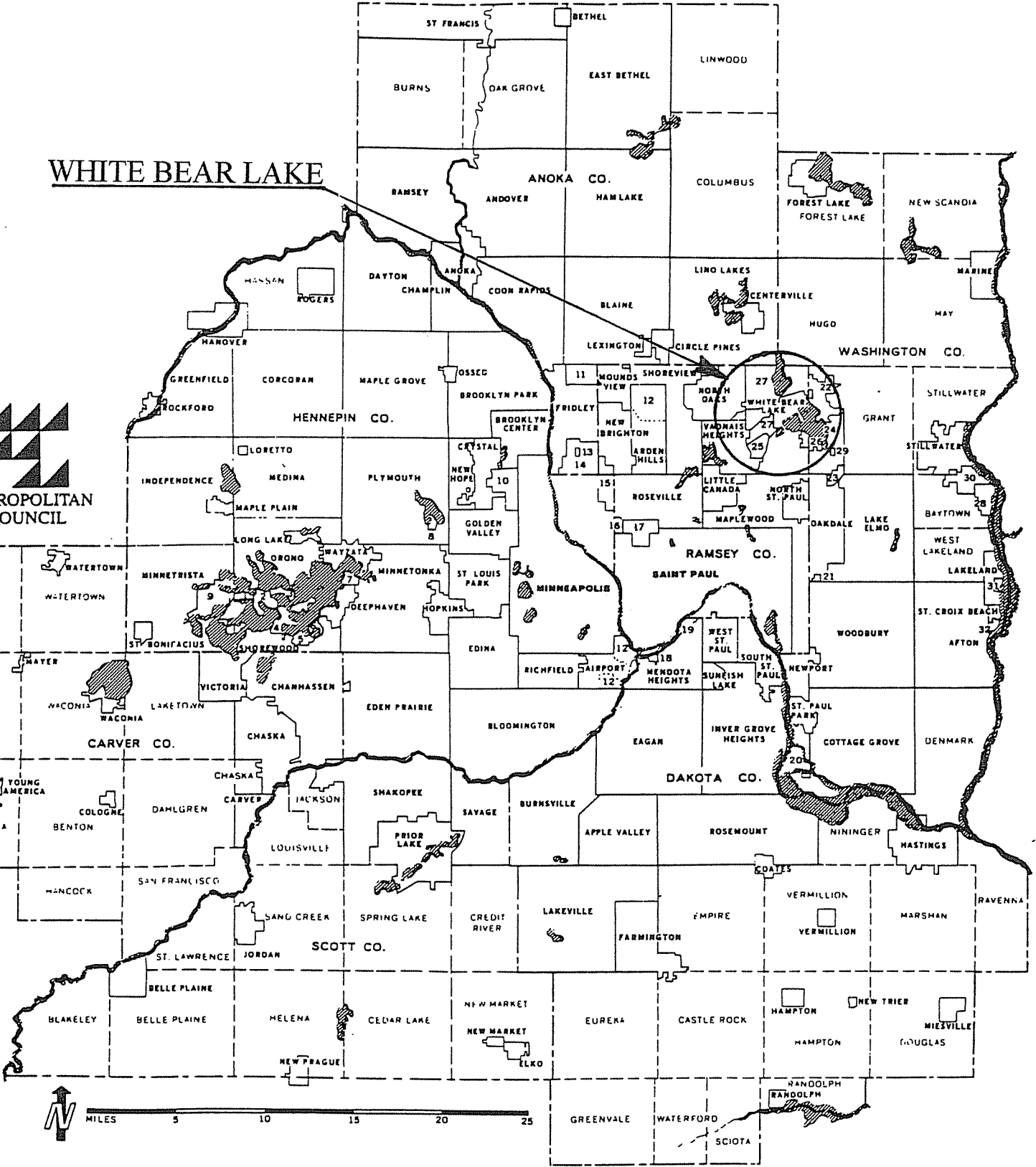
- (4) establish more uniform local policies and official controls for surface and groundwater management;
- (5) prevent erosion of soil into surface water systems;
- (6) promote groundwater recharge;
- (7) protect and enhance fish and wildlife habitat and water recreational facilities; and
- (8) secure the other benefits associated with the proper management of surface and groundwater.

The intent of this Water Management Plan is to gather all essential information and planning data into a single document which describes the existing environment, establishes specific policy and management methods for protection and future enhancement of the City's water and wetland resources, while recognizing the need for proper land utilization and growth. The Plan has been prepared in conformance with the criteria set forth in the Vadnais Lake Area Water Management Organization (VLAWMO), Rice Creek Watershed District (RCWD), Ramsey-Washington Metro Watershed District (RWMWD), and Valley Branch Watershed District (VBWD) plans. The criteria, as a minimum, establish the degree of performance necessary to achieve improvement in water quantity and quality management. These criteria are not intended to dictate or preempt the design process, but rather provide guidelines to proper development.

1.4 PLAN SUMMARY

- The White Bear Lake Water Management Plan includes the elements required by Statute 103B. The Plan includes identification of and recommendations for protection and maintenance of the existing hydrologic system, the goals and policies for water quality and quantity, erosion and sediment control, recreation, fish and wildlife enhancement, and an implementation program with a process for Plan amendment. The Plan supplements the watershed management organizations' Plans, creating a rational, efficient local management approach. By minimizing public capital expenditures and enhancing water quality, the City will best manage its important water resources.

WHITE BEAR LAKE



MAP 1 LOCATION MAP

SECTION 2
PHYSICAL ENVIRONMENT

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

SECTION 2 - PHYSICAL ENVIRONMENT

2.1 GEOLOGY AND TOPOGRAPHY

Ramsey and Washington Counties are dominated by the Eastern St. Croix Moraine. This glacial and terminal moraine is characterized by steep hills interspersed with deep depressions. The depressions are occupied by small lakes or are filled with peat.

Along the northern part of Ramsey County and the northwestern part of Washington County, islands of glacial till protrude through the sandy deposits of the Anoka Sand Plain. This is a gently undulating outwash plain made up principally of fine sand. Depressions are commonly filled by peat deposits, marshes, or lakes. The City has diversified topographic relief.

Topographic maps are available from the U. S. Geologic Survey (USGS). Other geological information and maps are available from Ramsey and Washington Counties.

2.2 SOILS

The Ramsey County Soil and Water Conservation District prepared an inventory of existing soils found within the City of White Bear Lake. The main source of information for the inventory was the Ramsey County Soil Survey prepared by the Soil Conservation Service (SCS). The inventory depicted on Map 3 shows existing soils grouped numerically by area into five categories as follows:

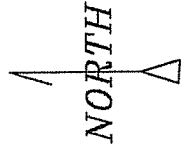
Area 1: The soils are formed on nearly level to gently undulating sandy outwash and sandy lake plains with steep slopes occurring adjacent to drainageways and depressional areas. This area consists primarily of excessively drained, deep sandy soils. The infiltration rate and permeability of these soils is rapid, which tends to keep runoff at a minimum. The water table in this soil is typically below 6 feet. In some portions of area 1 there are depressional soils and wetland areas consisting of organic and poorly drained sandy soils. Water tables in these soils range from 0-2 feet.

Area 2: Loamy Grantsburg glacial till formed on moderately rolling or steep, irregular slopes intermingled with closed, poorly drained depressions. Soils are primarily grayish colored loamy till. The infiltration rate and permeability of the soils of this area are generally moderate. The water table is typically below 6 feet but may vary from 1 to 3 feet below the surface in some of the more level areas. Aside from the major lakes, many small lakes and organic-filled depressions are scattered throughout this area.

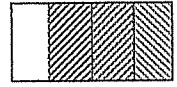
Area 6: Loamy Superior till formed on moderately rolling to steep, irregular slopes intermingled with closed, poorly drained depressions. Soils are primarily sandy loam or silt loam underlain by sandy loam till. The water table, except for depressional areas, is

MAP 2
WATERSHED BOUNDARIES

WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE



LEGEND



VLA WMO

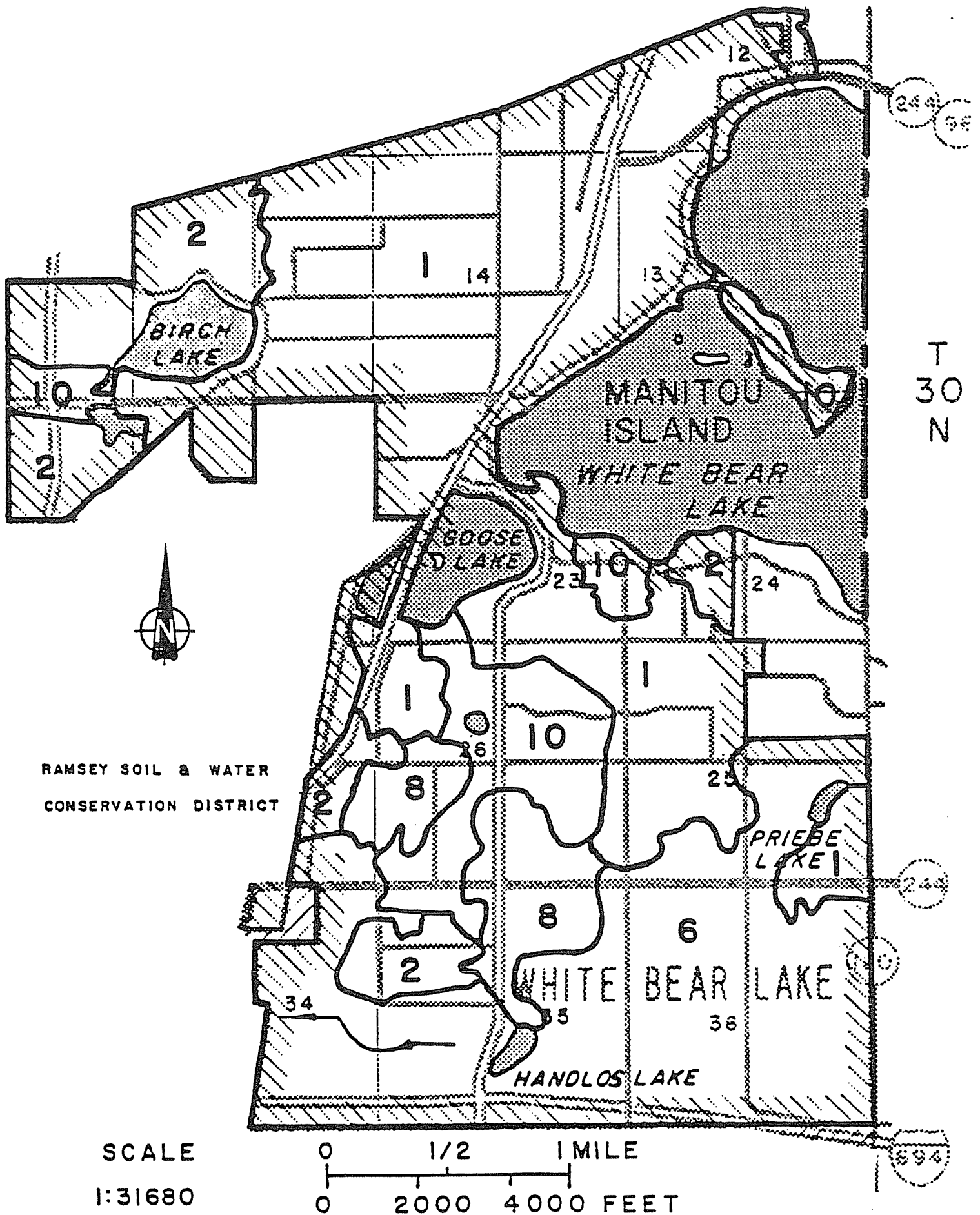
RCWD

RWMWD

VBWD



GENERAL GEOMORPHIC AND SOIL AREAS



generally below 6 feet. Small lakes and organic filled depressions are scattered throughout this area.

Area 8: Sandy soils formed in outwash deposited on steep to very steep terminal moraines of Superior and Grantsburg till. The soils are primarily brown and reddish brown moderately coarse-textured sand. The infiltration rate and permeability of these soils are rapid. Where till is exposed at the surface or underlies the sandy outwash, the soil is reddish or grayish loam. Permeability in the loam is moderately slow to moderate. Runoff is rapid on steep slopes. The water table in Area 8 is typically below 6 feet. Small depressions which may be wet or dry are scattered throughout this soil area.

Area 10: Well-drained, loamy Grantsburg till soils overlying loamy Superior till with the Superior material being exposed by urban construction activities. The area consists of undulating to steeply hilly soils on knolls and hillsides of glacial till moraines. Urban development has resulted in significant disturbance of these soils. The water table, except for depressionai areas, is typically below 6 feet.

The SCS has established four general series of soil groups based on texture and slope as described below:

- GROUP A - Low runoff potential, high infiltration
- GROUP B - Moderate infiltration
- GROUP C - Slow infiltration rate
- GROUP D - Very slow infiltration rate, high runoff potential

The runoff potential of an area is determined using these general soil characteristics in combination with land use classifications, vegetation of the area and rainfall intensity determined from charts for the various design storms.

Soil characteristics are also considered when developing erosion control plans. Special procedures for erosion and sediment control should be incorporated into all construction projects. The erosion control handbook published by BWSR includes recommended management practices. The Minnesota Pollution Control Agency has also published a notebook titled Protecting Water Quality in Urban Areas, Best Management Practices for Minnesota (republished in December 1994), which may be used for reference. The City has adopted the Ramsey Soil Erosion and Sediment Control Handbook for erosion protection guidance.

2.3 PRECIPITATION

Rainfall data for predicting hydrology and designing hydraulic structures and facilities is presented in Table 1 on page 2-3. It shows rainfall for various return periods and durations for the Metropolitan area taken from the U.S. Department of Commerce, Weather Bureau Technical Paper No. TP-40.

TABLE 1
RAINFALL IN MINNEAPOLIS-ST. PAUL METROPOLITAN AREA

Return Frequency	24-Hour	12-Hour	6-Hour	3-Hour	2-Hour	1-Hour	30-Minute	15-Minute
1-Year	2.3	2.0	1.7	1.5	1.4	1.2	0.9	0.6
2-Year	2.8	2.4	2.1	1.7	1.7	1.4	1.1	0.7
5-Year	3.6	3.1	2.7	2.3	2.2	1.8	1.4	1.0
10-Year	4.2	3.7	3.1	2.6	2.5	2.1	1.7	1.3
25-Year	4.6	4.2	3.5	3.0	2.8	2.3	1.9	1.4
50-Year	5.3	4.6	4.0	3.4	3.1	2.7	2.1	1.5
100-Year	5.9	5.0	4.4	3.8	3.5	2.9	2.4	1.7

Source: U.S. Department of Commerce, Weather Bureau Technical Paper No. TP-40

Recently, the Metropolitan Council has assembled rainfall frequency data for the metropolitan area in "Precipitation Analysis for the Twin Cities Metropolitan Area, An Update". In this report, an analysis of 23 precipitation recording stations operated by the National Weather Service in the Metropolitan Area indicated that there is substantial variability in the rainfall patterns occurring within the region. The Ramsey Soil and Water Conservation District (RSWCD) has also been maintaining a database of rainfall information for Ramsey county since 1988. Some information in the database may be helpful in predicting rainfall for design of hydrologic structures in the City. The information contained in those reports may be used to predict local rainfall for design of hydrologic structures at various storm frequencies and durations.

2.4 SURFACE WATER RESOURCES

The individual water management organizations have developed or are planning to develop hydrologic data base and modeling classification systems. Those systems are adapted by reference by the City.

2.4.1 Drainage Ditches

In 1916, Ramsey County constructed Ditches No. 13 and No. 14 to drain surface waters to create more available cropland for cultivation. In 1927, the County board authorized the construction of a branch ditch system consisting of six laterals (No. 1 through No. 5 and No. 5A) connecting to the main Ditch No. 14. At present, the system is much as originally constructed. However, portions of the branches are no longer well defined due to subsidence of the ditch bottom or collapse of the side walls, especially in areas with poorly drained soils.

Land use surrounding the ditch system has changed to primarily urban residential with scattered agricultural use. The primary purpose of the ditch system has changed to a conveyance system for urban storm water runoff versus its original construction as a drain for standing lake waters to facilitate agriculture. As the volume of urban runoff increases, sustained peak flows in ditches have increased, causing a greater streambank saturation resulting in some side slope instability and a susceptibility to erosion.

County Ditch 11 is located in the north portion of White Bear Lake in the Rice Creek Watershed District. County Ditch 11 conveys surface water from the City of White Bear Lake and adjacent wetlands into Bald Eagle Lake in White Bear Township.

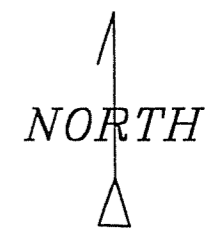
North County Ditch 18 is located in the south portion of White Bear Lake in the Kohlman Lake Subwatershed of the Ramsey-Washington Metro Watershed District. County Ditch 18 discharges to Kohlman Lake and the Phalen chain in Maplewood and St. Paul.

The locations of the County Ditches within the City of White Bear Lake are shown on Map 4.

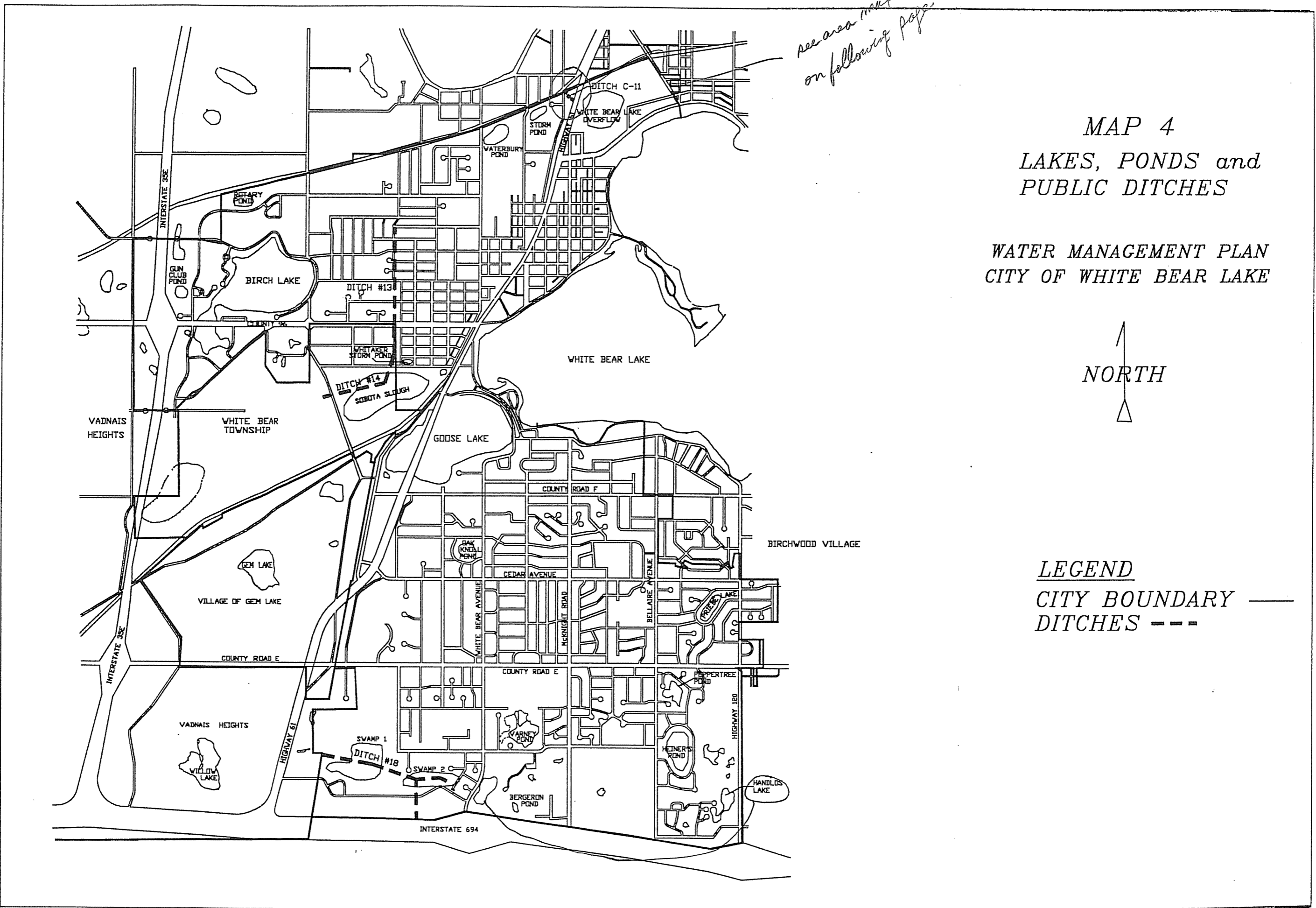
*See area map
on following page*

MAP 4
LAKES, PONDS and
PUBLIC DITCHES

WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE



LEGEND
CITY BOUNDARY ———
DITCHES - - -



2.4.2 Lakes and Other Significant Water Bodies

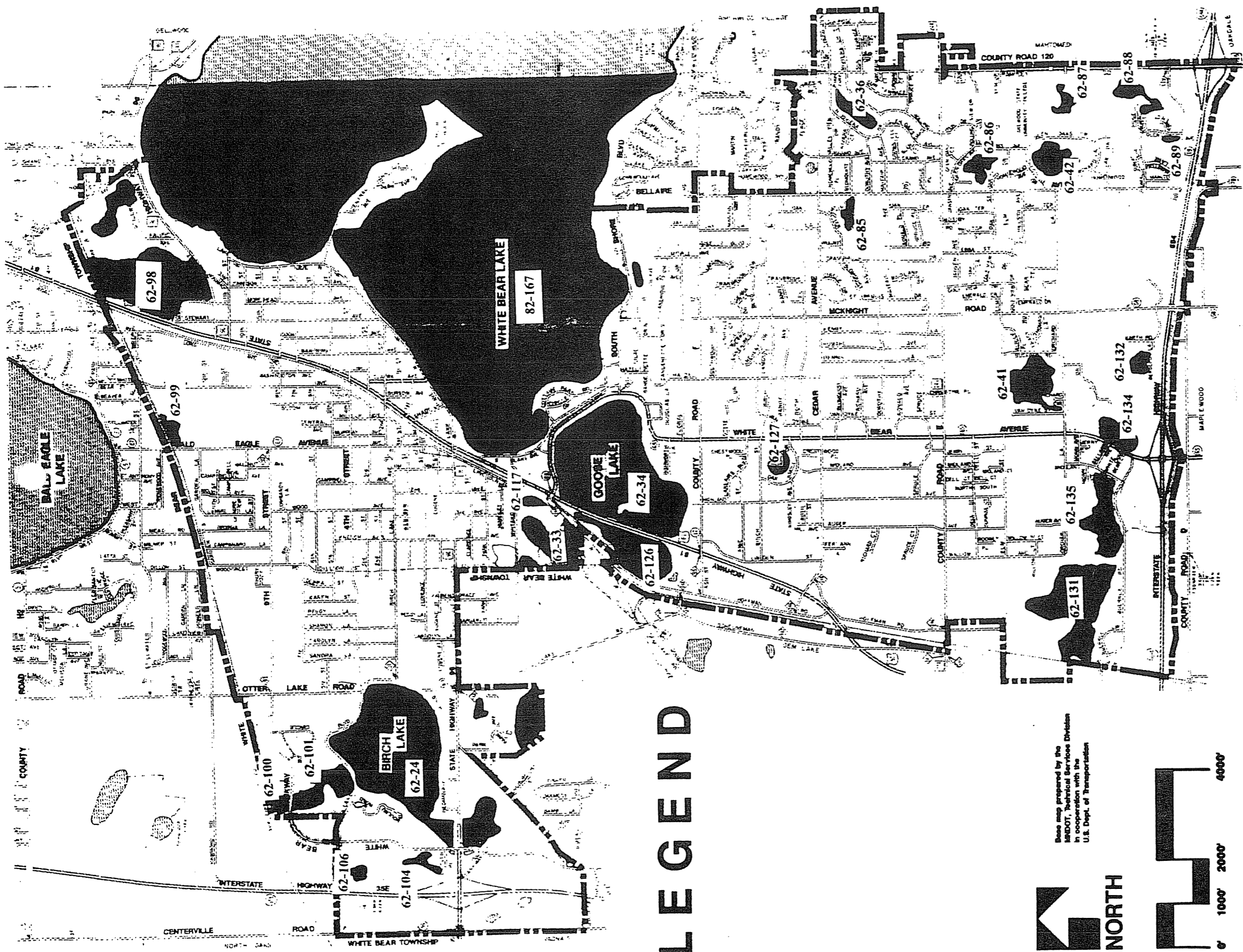
White Bear Lake borders the east section of the City and has much regional use. Several communities border the lakeshore. Other lakes in the City include Goose Lake, Birch Lake, Handlos Lake, and Priebe Lake. The lakes provide a recreation resource to the public in and near the City of White Bear Lake. The lakes and wetlands provide suitable environmental habitat for fish and wildlife within the City. These water bodies are natural assets which should be protected from degradation by pollution or contamination from surface water or groundwater sources. The City wetland and shoreland ordinances were developed to protect the waters. The lakes, wetlands and other significant water surfaces are located and numbered on Map 5, showing Department of Natural Resources (DNR) Protected Waters. The DNR ecological/management classifications of the protected waters within the City are shown on Table 2. These classifications are largely based on limnological characteristics.

**TABLE 2
DNR ECOLOGICAL/MANAGEMENT
CLASSIFICATION OF PROTECTED WATERS**

DNR Reference	No.	Ecological Classification	OHW	Management Classification
White Bear Lake	82-167	Walleye		LMB/BMG
Birch Lake	62-24	Waterfowl		Bullhead
Sobota Slough	62-33	Reg Winterkill		Waterfowl
Goose Lake	62-34	Reg Winterkill		Bullhead
Priebe Lake	62-36	Waterfowl		Waterfowl
Varney Pond	62-41	Waterfowl		Waterfowl
Heiner's Pond	62-42	Reg Winterkill		Bullhead
Unnamed Pond	62-85	Waterfowl		Waterfowl
Pepper Tree Pond	62-86	Waterfowl		Waterfowl
Unnamed Pond	62-87	Waterfowl		Waterfowl
Unnamed Pond	62-88	Waterfowl		Waterfowl
Unnamed Pond	62-89	Waterfowl		Waterfowl
Unnamed Pond	62-98	Waterfowl		Waterfowl
Waterbury Pond	62-99	Waterfowl		Waterfowl
Rotary Pond	62-100	Waterfowl		Waterfowl
Unnamed Pond	62-101	Waterfowl		Waterfowl
Neschville/Lande Pond	62-104	Waterfowl		Waterfowl
Unnamed Pond	62-106	Waterfowl		Waterfowl
Unnamed Pond	62-117	Waterfowl		Waterfowl
Unnamed Pond	62-126	No info. avail.		No info. avail.
Oak Knoll Pond	62-127	Waterfowl		Waterfowl
Swamp 2	62-131	Waterfowl		Waterfowl
Bergeron Pond	62-132	Waterfowl		Waterfowl
Handlos Lake	62-134	Reg Winterkill		Kids Fishing Pond
Swamp 1	62-135	Waterfowl		Waterfowl

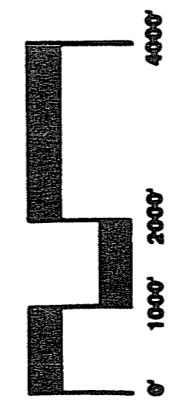
DNR PROTECTED WETLANDS

MAP 5



LEGEND

Base map prepared by the
MBCOT, Technical Services Division
in cooperation with the
U.S. Dept. of Transportation



The watershed organizations are each developing or have developed function and value-based classification systems for water bodies. The City of White Bear Lake adopts those classification systems for the geographic area of the individual watershed districts.

The National Wetland Inventory (NWI) map shows wetlands within the City of White Bear Lake as inventoried by the U.S. Fish and Wildlife Service. Areas shown on the DNR and NWI maps indicate the presence of wetlands, but show only the general location of wetlands. Site visits for delineation of wetland boundaries are required for permitting. The NWI map is included as Map 6 in this document. A copy of the map is on file at the White Bear Lake City Hall with other related maps.

All waters and wetlands over 1.5 acres in White Bear Lake are incorporated into the City's official wetland inventory map and are designated as City-protected wetlands. These City protected water bodies include those inventoried by RSWCD in 1980, the DNR Protected Waters and Wetlands, and the wetlands contained on the NWI map. White Bear Lake is committed to the protection and preservation of wetlands. The City requires that a land owner must obtain all required watershed, COE, and DNR permits for alteration of all identified wetlands regardless of size or inventory status according to WCA. Wetland functions are presented in Table 3.

**TABLE 3
WETLAND FUNCTIONS**

Floodwater Storage and Retention: Wetlands can reduce flooding by slowing down the force of floodwaters and by providing temporary storage of large amounts of storm water or snow melt water, thus reducing damages to roads, bridges, crop, etc.

Nutrient Assimilation: Wetland plants absorb nutrients during their growth and development. This removal means cleaner water leaving the wetland.

Sediment Entrapment: Wetlands can slow the flow of water moving through them. This allows sediments and associated nutrients time to settle out before the water is released to other wetland, lakes or streams.

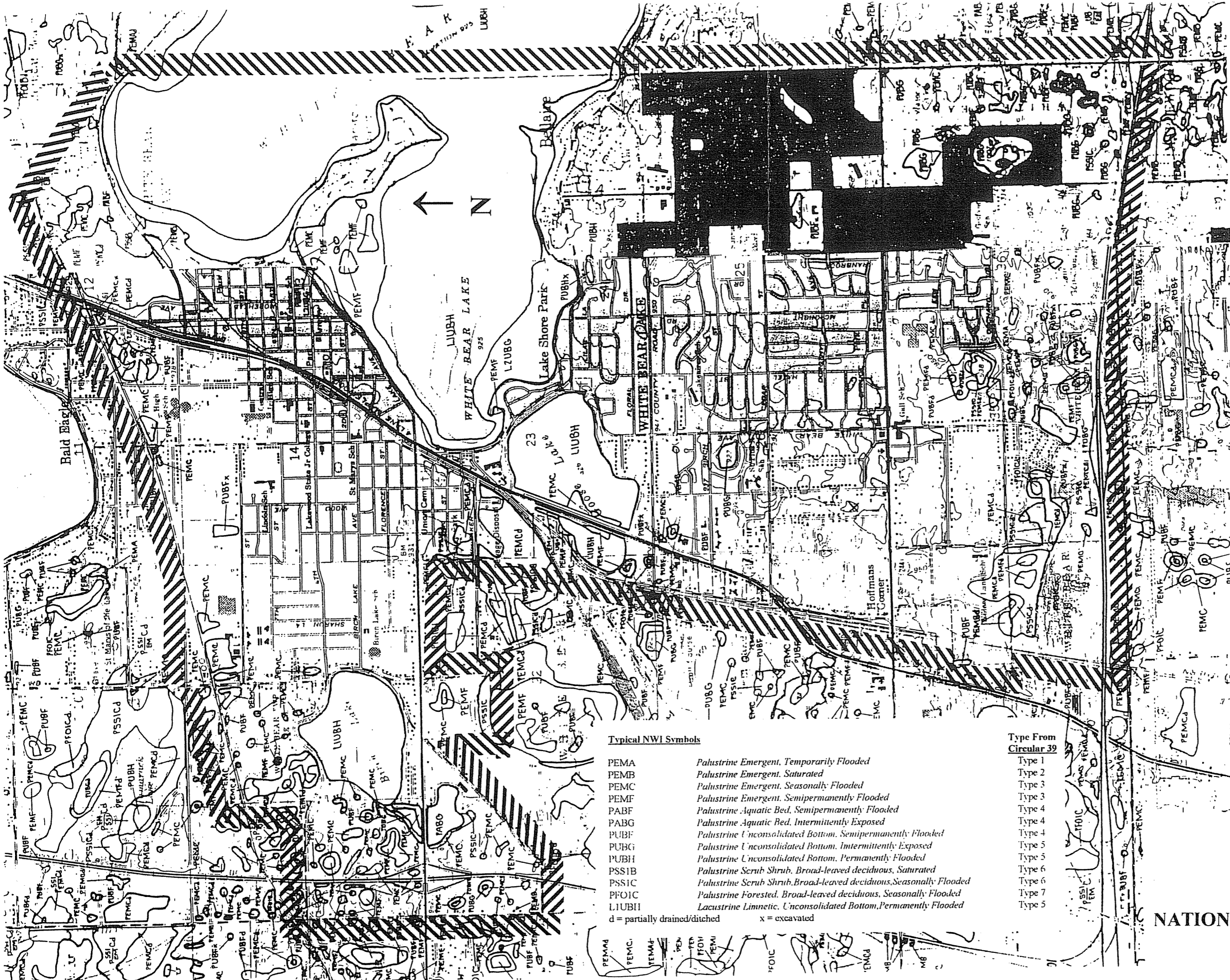
Ground Water Recharge: Some wetlands serve as a source of ground water recharge by collecting and retaining surface waters that would otherwise end up in distant lakes and rivers, helping assure long-term supplies of quality groundwater.

Low Flow Augmentation: Wetlands can augment low flows in streams through either retarding direct runoff or by contributing to groundwater based low flows reducing impacts of short term precipitation deficiencies in rivers and streams.

Aesthetics and Recreation: Wetlands are often beautiful areas to observe unique plant and animal species. They are an amenity to residential and commercial development in urban environments. Hunters and fishermen also frequent wetland areas.

Shoreland Anchoring and Erosion Control: Wetland vegetation can reduce erosion along lake and stream banks by reducing forces associated with wave action.

Wildlife Habitat: Many species of wildlife spend all or certain seasons of the year in wetland habitats for breeding, brood rearing, feeding or cover purposes.



Typical NWI Symbols

- PEMA Palustrine Emergent, Temporarily Flooded
 - PEMB Palustrine Emergent, Saturated
 - PEMC Palustrine Emergent, Seasonally Flooded
 - PEMF Palustrine Emergent, Semipermanently Flooded
 - PABF Palustrine Aquatic Bed, Semipermanently Flooded
 - PABG Palustrine Aquatic Bed, Intermittently Exposed
 - PUBF Palustrine Unconsolidated Bottom, Semipermanently Flooded
 - PUBG Palustrine Unconsolidated Bottom, Intermittently Exposed
 - PUBH Palustrine Unconsolidated Bottom, Permanently Flooded
 - PSSIB Palustrine Scrub Shrub, Broad-leaved deciduous, Saturated
 - PSSIC Palustrine Scrub Shrub, Broad-leaved deciduous, Seasonally Flooded
 - PFOIC Palustrine Forested, Broad-leaved deciduous, Seasonally Flooded
 - LIUBH Lacustrine Limnetic, Unconsolidated Bottom, Permanently Flooded
- d = partially drained/ditched x = excavated

Type From Circular 39

- Type 1
- Type 2
- Type 3
- Type 3
- Type 4
- Type 4
- Type 4
- Type 5
- Type 5
- Type 6
- Type 6
- Type 7
- Type 5

MAP 6

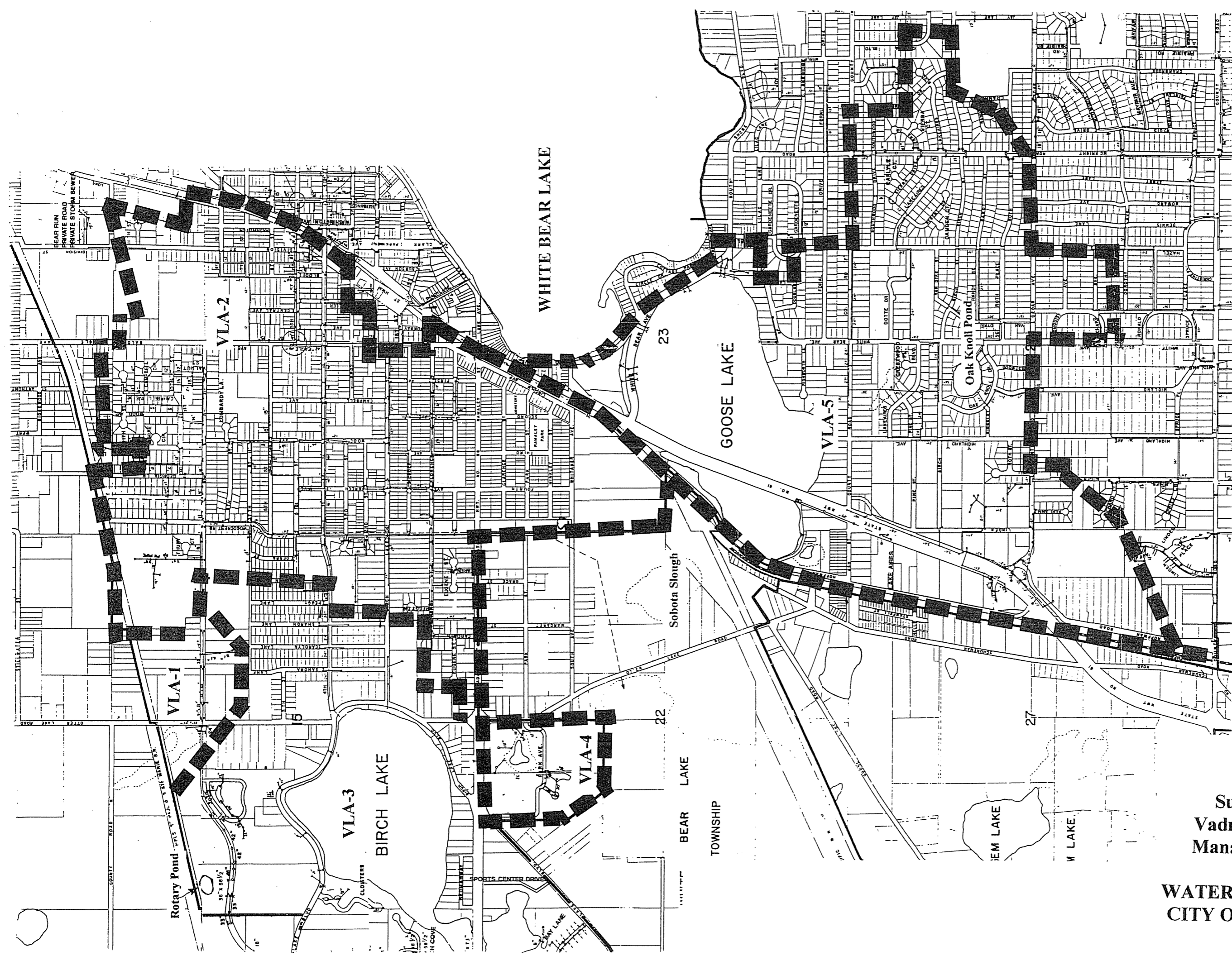
NATIONAL WETLAND INVENTORY

2.5 STORM DRAIN SYSTEM

- White Bear Lake is divided into four major watershed basins. The major watershed boundaries coincide with the boundaries of the four watershed organizations that have jurisdiction in the City. About 2,400 acres drain to Vadnais Lake (VLAWMO, see Map 7-A), 2,075 acres drain to the Phalen Chain of Lakes (RWMWD, see Map 7-B), 1,725 acres drain to the Rice Creek (RCWD, see Map 7-C), and 235 acres drains to Silver Lake (VBWD, see Map 7-D). Peak discharge rates out of the City, as provided by watershed organizations, are listed below in Table 4.

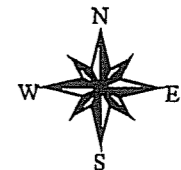
TABLE 4 DISCHARGE RATES TO NEIGHBORING COMMUNITIES				
Subwatershed Basin	Outlet Structure	Drainage Area (Acres)	Peak Runoff (cfs)	Reference
RC - 1 (Map 7-C)	2-18X28 RCP Arch	1725	25	RCWD- Clearwater Creek Basin
VLA - 3 (Map 7-A)	30" RCP	1889	27	VLAWKO- Black/Wilkinson Basin
VLA - 2 (Map 7-A)	96" RCP	511	131	VLAWMO- Sobota Slough
RW - 5 (Map 7-B)	48" RCP	2025	83	Ramsey Washington Metro - Phalen
VL - 1 (Map 7-D)	Overland Flow	235	N/A	Valley Branch - Silver Lake

A number of existing basins in the City have been designated to accommodate 100-year, 24-hour duration storm events. Handlos Lake, Swamp 1, and Swamp 2 are shown on Maps 8, 9, and 10, respectively. Basin size, peak elevation, and peak discharge for several basins are presented in Table 5 on page 8. Many of these basins are identified as named ponds and lakes or as DNR protected waters. The City of White Bear Lake Storm Drain Map includes the major areas designated as detention basins. New projects must comply with the MPCA's NPDES Stormwater Permitting Program.

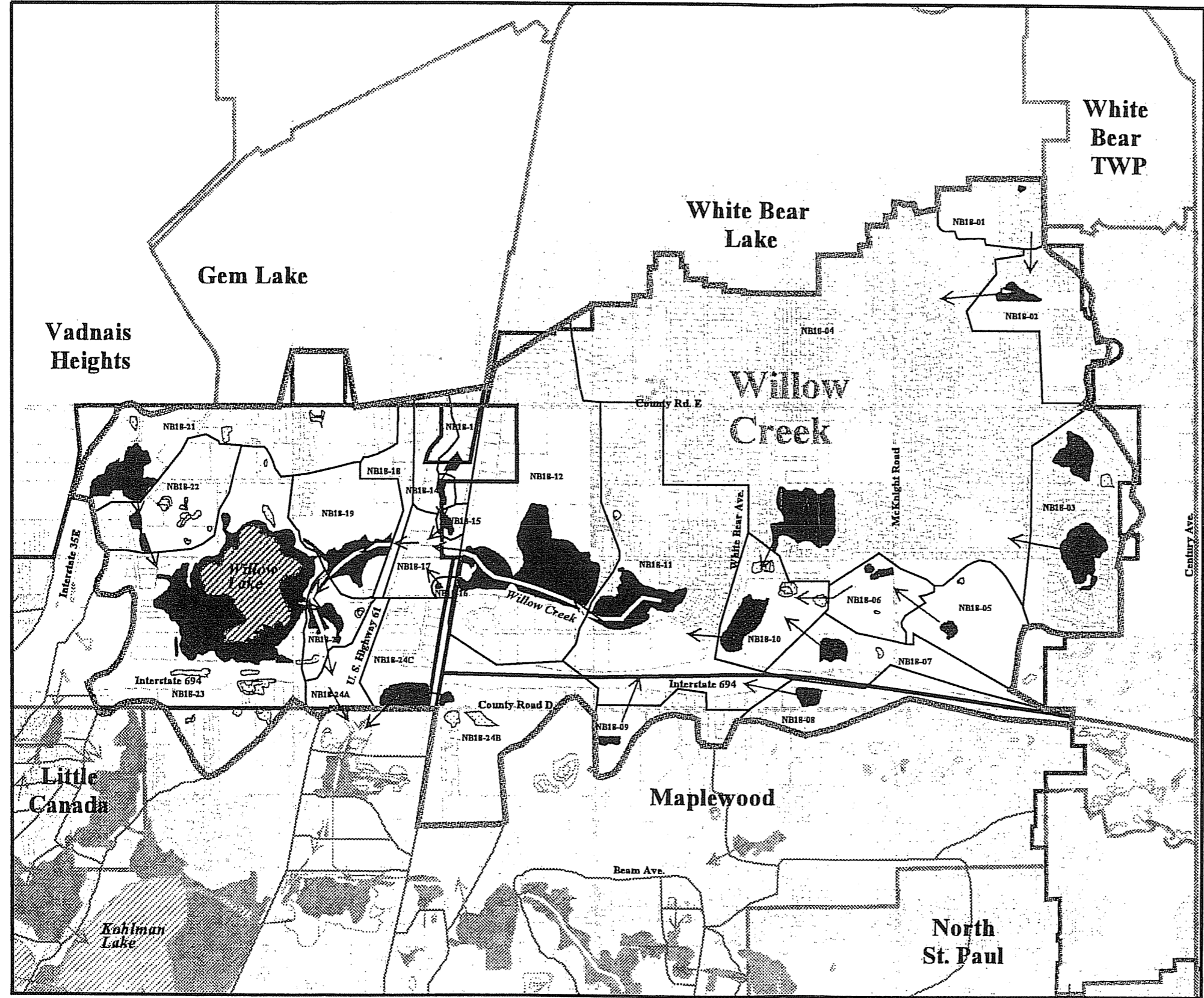


MAP 7-A
Subwatershed Basins
Vadnais Lake Area Water
Management Organization

WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE



Ramsey-Washington Metro
Watershed District



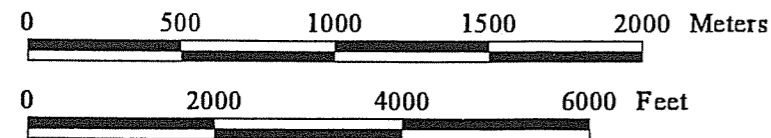
Drainage Patterns Features

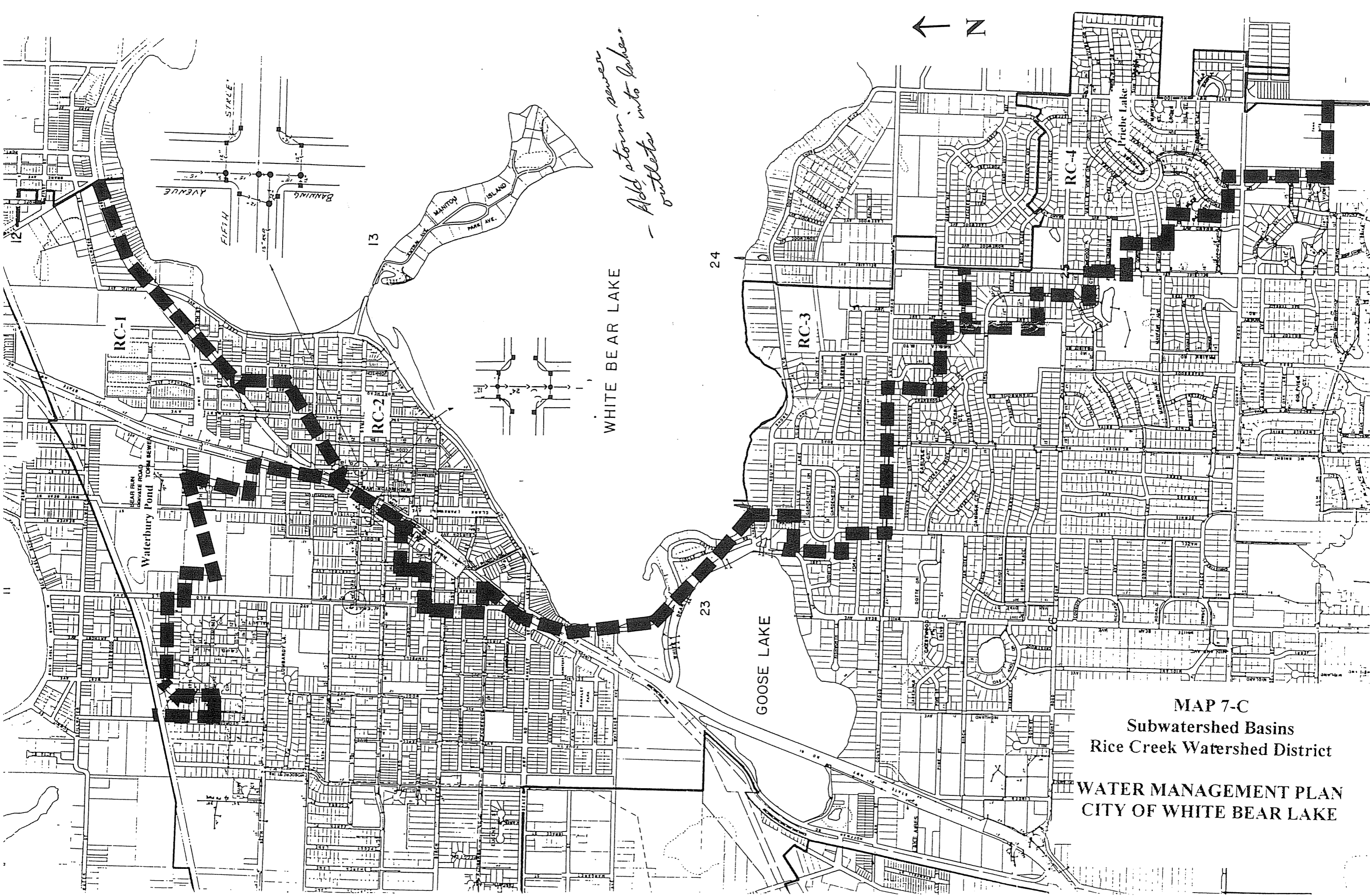
- Creeks
- Lakes
- Detention Ponds
- Wetlands (not modeled)
- Subwatershed Boundary
- Flow Direction
- Municipal Boundaries
- Ramsey-Washington Metro Watershed District Boundary
- Drainage Area

SOURCE: RWMWD Plan appendix Figure Fa

MAP 7-B
Subwatershed Basins
Ramsey-Washington Metro
Watershed District

WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE





WHITE BEAR LAKE

Add storm sewer outlets into lakes.

MAP 7-C
 Subwatershed Basins
 Rice Creek Watershed District
 WATER MANAGEMENT PLAN
 CITY OF WHITE BEAR LAKE

Waterbury Pond

GOOSE LAKE

RC-1

RC-2

RC-3

RC-4

FIFTH AVENUE

STACE

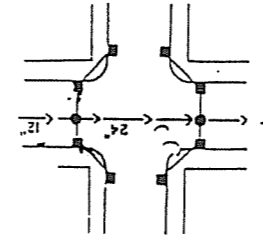
BANKING

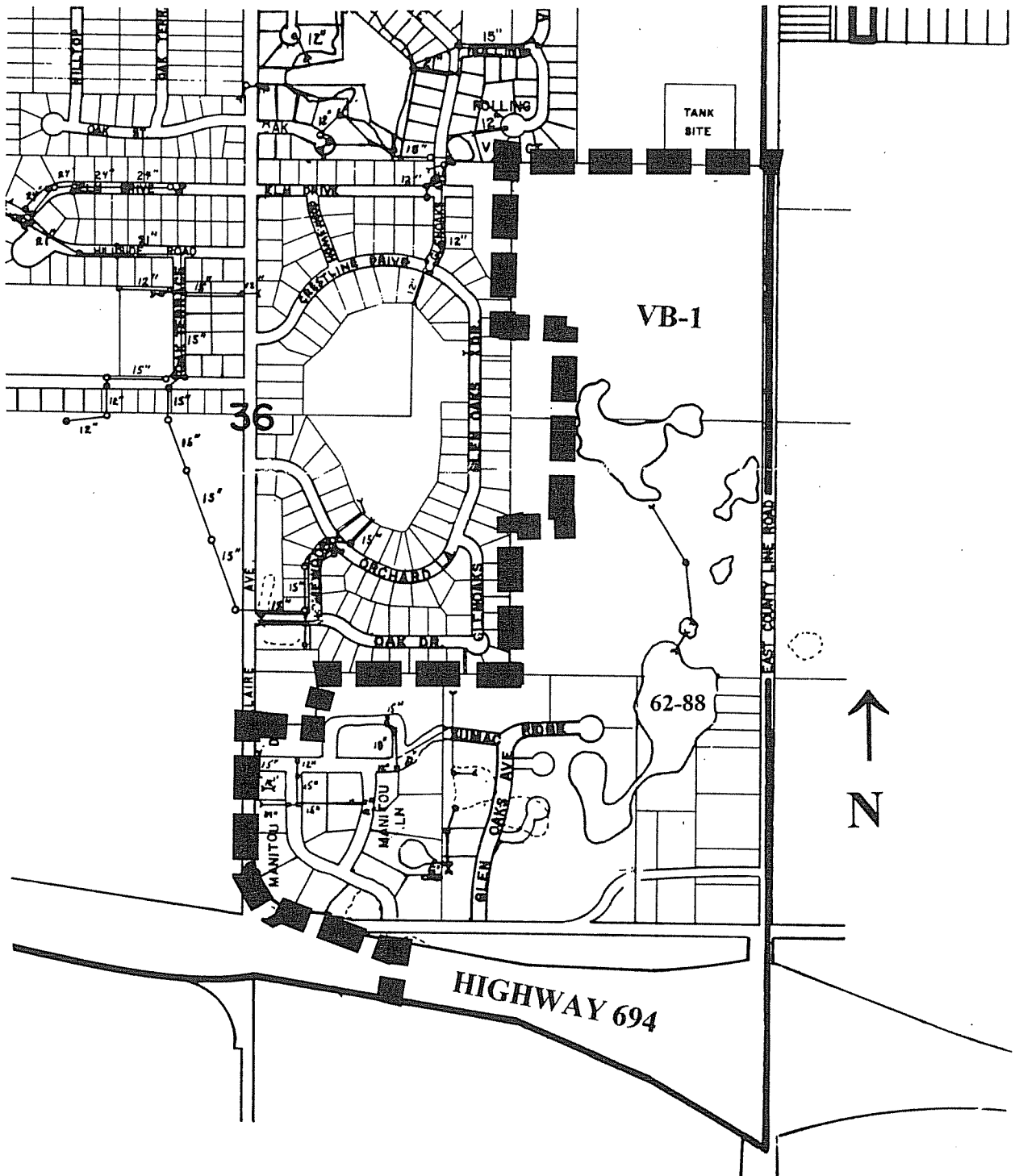
MARK AVE.

MAHITON ISLAND

23

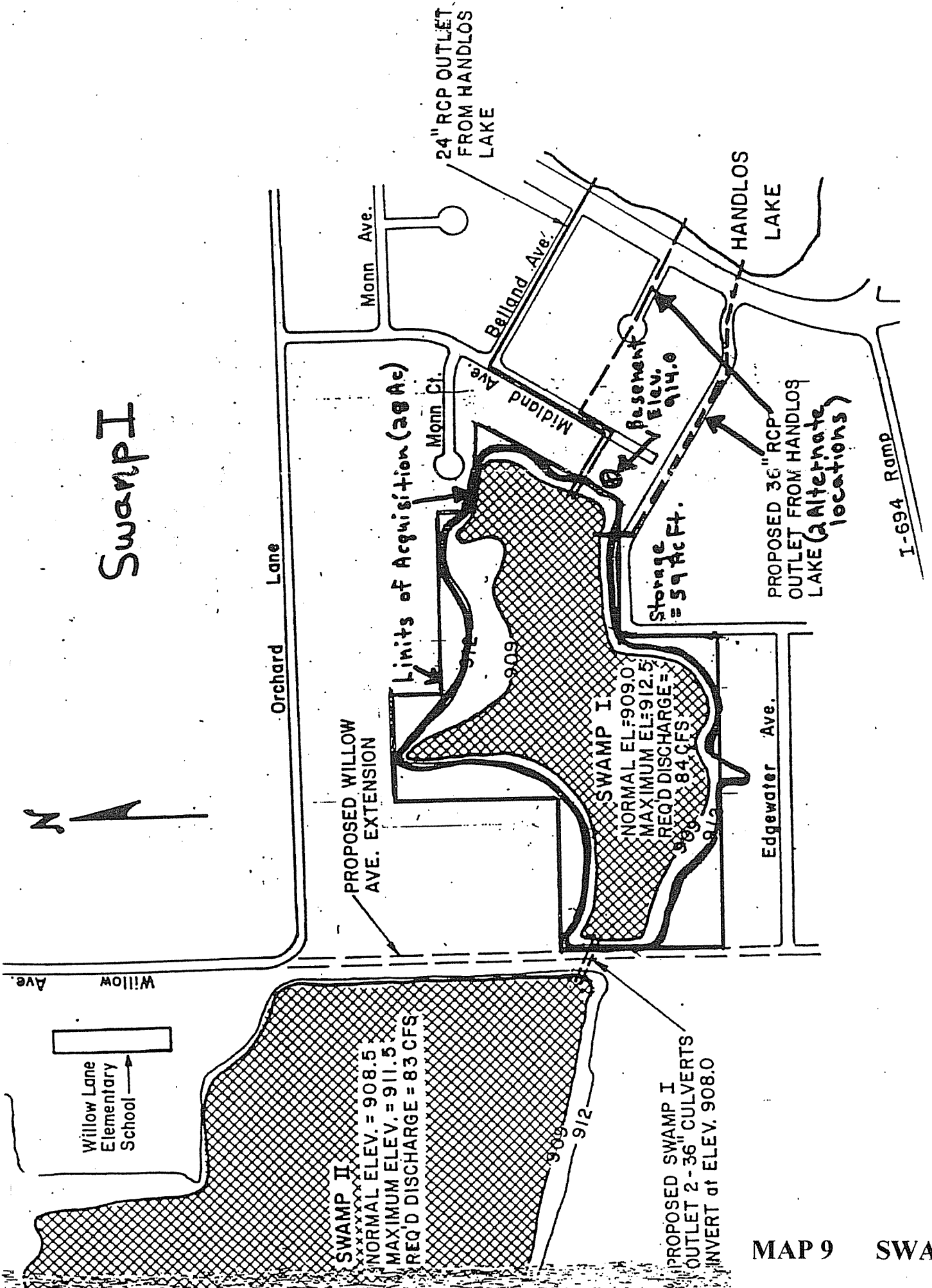
24





MAP 7-D
Subwatershed Basins
Valley Branch Watershed District
WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE

Swamp I

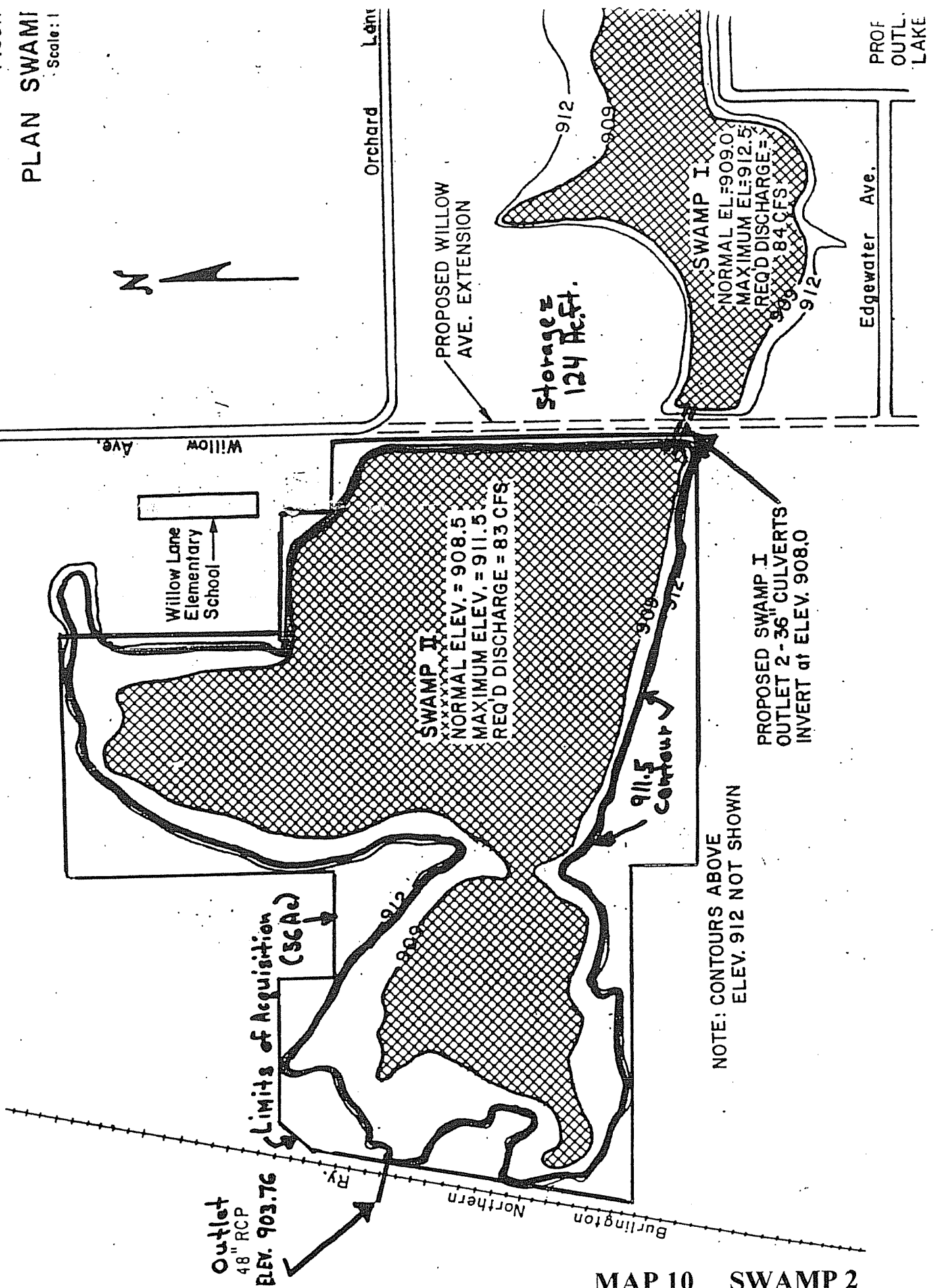


MAP 9 SWAMP 1

SOURCE: South White Bear Lake Hydrologic Study

Swamp II

FIGUR
PLAN SWAMI
Scale: 1



MAP 10 SWAMP 2

**TABLE 5
FLOOD LEVELS, PEAK DISCHARGES, STORAGE VOLUMES**

Pond Name	Drainage Area (acre)	Storage Volume (ac-ft)	Flood Level	Peak Runoff (cfs)	Subwatershed Basin	Watershed
Priebe ⁶	157	24	980.5	40	RC-4 (Map 7-C)	Rice Creek
Varney ⁷	1083	131	940.3	110	RW-2 (Map 7-B)	Ramsey-Washington
Handlos ⁷	71	68	935.6	97	RW-5 (Map 7-B)	Ramsey-Washington
Swanp 1 ⁷	262	257 (1,2)	912.5	87	RW-5 (Map 7-B)	Ramsey-Washington
Swamp 2 ⁷	285	257 (1,2)	912.5	87	RW-5 (Map 7-B)	Ramsey-Washington
Birch ²	9	N/A	N/A	27	VLA-3 (Map 7-A)	Vadnais Lake Area
Goose ³	N/A	N/A	N/A	18	VLA-5 (Map 7-A)	Vadnais Lake Area
Ramaley-Sobota ⁴	N/A	105	918	131	VLA-2 (Map 7-A)	Vadnais lake Area
LL-28 ⁵ (DNR #62-88)	N/A	32	1016	N/A	VB-1 (Map 7-D)	Valley Branch

² - TKDA Township Parkway Project, 1995 - flow under Soo Line Railroad.

³ - VLAWMO Water Management Plan, 1996.

⁴ - West Drainage District Plan, 1976 - flow under Otter Lake Road.

⁵ - Valley Branch Watershed District Plan, 1995.

⁶ - Rice Creek Watershed District, 1996.

⁷ - Ramsey Washington Metro Watershed District Plan, 1997

A detailed storm drain map of the City is available for review at the White Bear Lake City Hall.

2.6 WATER QUALITY

Water quality, water surface elevations, and fish population records have been documented for White Bear Lake by various agencies for over 50 years.

Water quality has been monitored by Ramsey County, Washington County, Northeast Metro Technical College, Minnesota DNR, White Bear Lake Conservation District, and the MPCA. The data is compiled on an Environmental Protection Agency computer storage and retrieval system known as STORET. These records were requested for all the lakes and water bodies in

White Bear Lake. The STORET information was available for White Bear Lake, Birch Lake, Goose Lake and Priebe Lake only. Water quality data was not available for other lakes in the City. The data is available for review at the City Hall.

White Bear Lake is located on the east border of the City. There are public access sites in several locations and a municipal public swimming beach. Local property owners use the lake for recreation. The water quality of White Bear Lake is considered good. The communities along the lakeshore have begun programs to help maintain or improve the good water conditions. Pollution problems appear to be minimal. However, a few problems have been documented for the lake, including the presence of Eurasian milfoil. Also the "itch"--a parasite which in its fluke stage burrows into the skin--is a common complaint of swimmers in early summer. The parasite uses snails found in the lake as a host.

The 1990 Water Quality Study by the White Bear Lake Conservation District is available at the City Hall. RCWD has completed a Diagnostic/Feasibility Study and more stringent guidelines are anticipated. There are two surface water monitoring sites in the City which are maintained by the St. Paul Water Utility (SPWU). They are located at the outlet of Goose Lake and at the outlet of a storm sewer pipe near Whitaker Avenue. Flow rates and concentration levels of nutrients such as phosphorous, Kjeldahl nitrogen, ammonia, chlorophyll-a, and suspended solids are recorded and analyzed by the SPWU. Maintaining the water quality of the lake continues to be a high priority for the City of White Bear Lake.

Other lakes and water bodies within the City of White Bear Lake are ponds and wetlands where water quality data has not been monitored. Siltation and erosion problems have been noted in Section 4 - Management Strategies, along with other drainage problems.

2.7 LAND USE

The City of White Bear Lake is more than 90% developed. The area along the Interstate 35E corridor north and south of Trunk Highway 96 remains partially undeveloped. Other areas of potential development are along Trunk Highway 61, north of T.H. 96 and east of T.H. 61, south of County Road E.

As areas are developed, potential runoff quantity increases. Roofs, driveways, parking lots, and other impervious surfaces increase the amount of runoff and decrease the amount of soil infiltration which is associated with an area. Maps 11 and 12 show existing and proposed land use. The floodplain map is on file at City Hall.

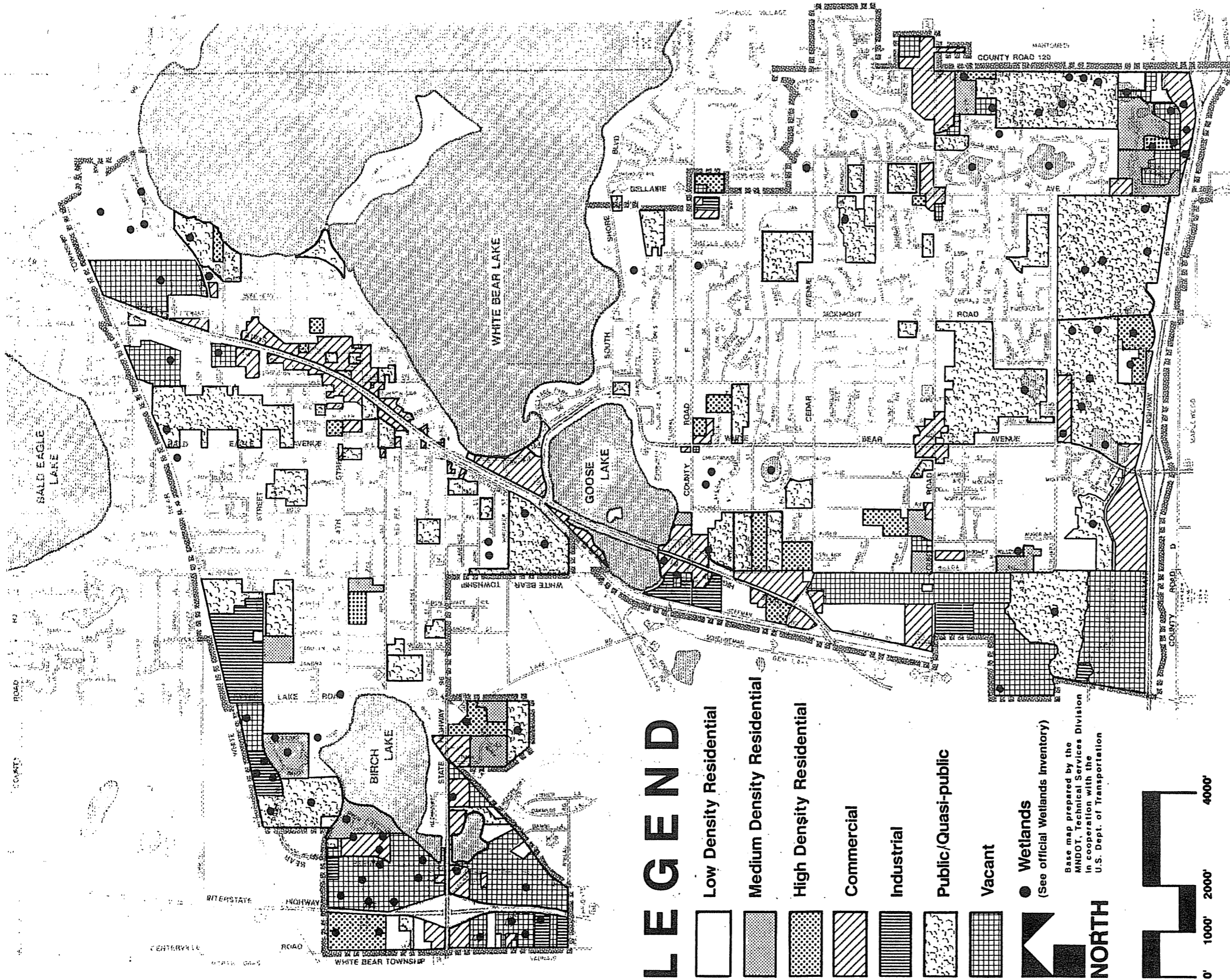
2.8 UTILITIES

The public utilities in White Bear Lake include the storm sewer, sanitary sewer and the water system.








The public sanitary sewer system services most of the City. The system is connected to the Metropolitan Council Environmental Services (MCES) system. Sewage flows to the MCES

EXISTING LAND USE

MAP 11

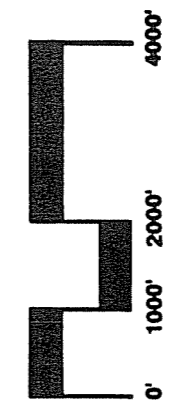


LEGEND

-  Low Density Residential
-  Medium Density Residential
-  High Density Residential
-  Commercial
-  Industrial
-  Public/Quasi-public
-  Vacant

 Wetlands
(See official Wetlands Inventory)

Base map prepared by the
MNDOT, Technical Services Division
in cooperation with the
U.S. Dept. of Transportation



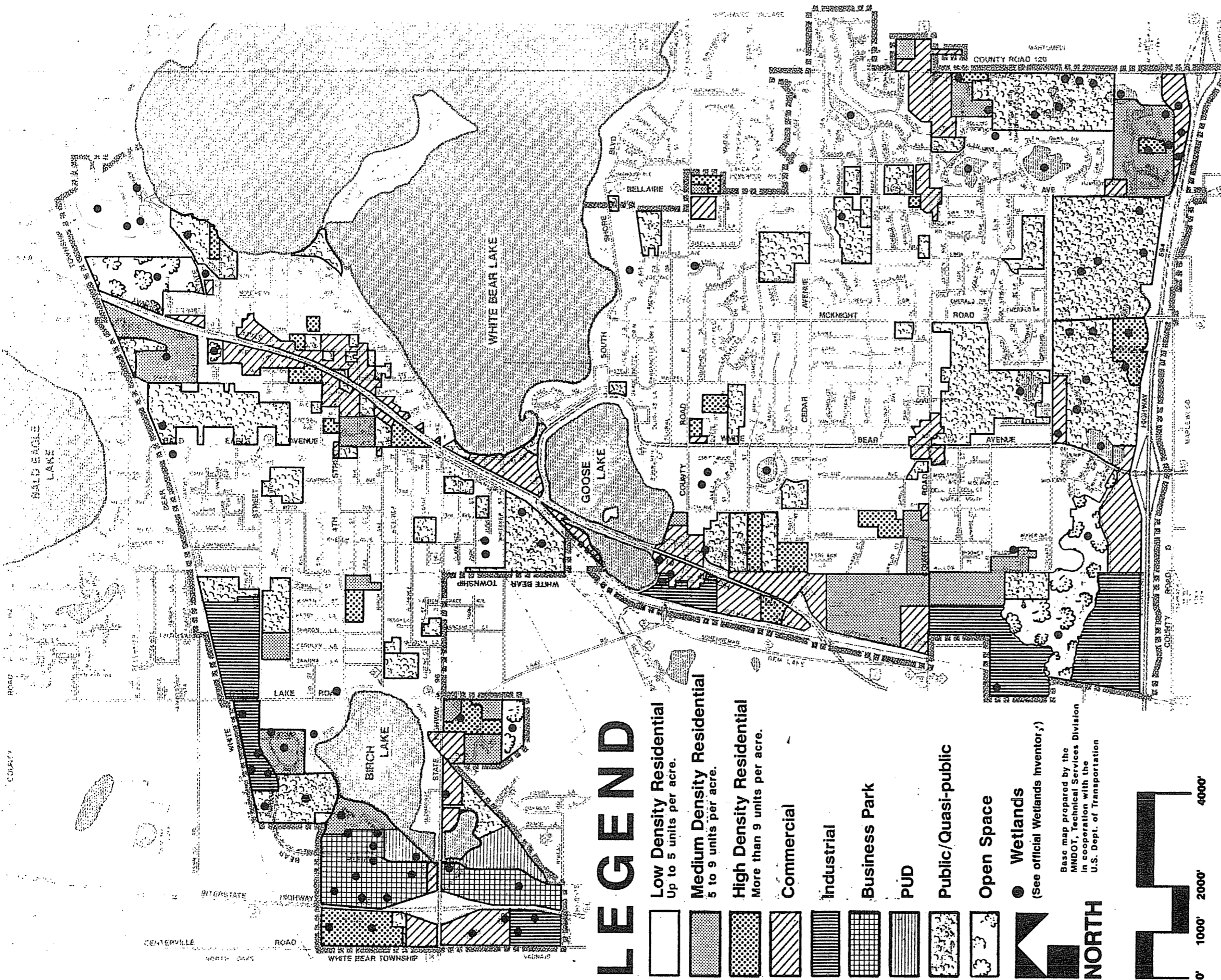
LAND USE

SOURCE: **COMPREHENSIVE PLAN 1990**
City of White Bear Lake


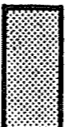
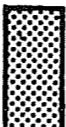


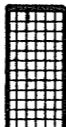




PROPOSED LAND USE

APPROVED BY CITY COUNCIL 12/8/92

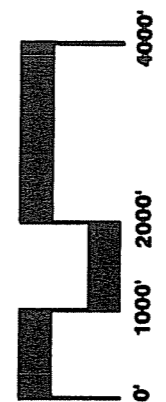
MAP 12



LEGEND

-  Low Density Residential
Up to 5 units per acre.
-  Medium Density Residential
5 to 9 units per acre.
-  High Density Residential
More than 9 units per acre.
-  Commercial
-  Industrial
-  Business Park
-  PUD
-  Public/Quasi-public
-  Open Space
-  Wetlands
(See official Wetlands Inventory.)

Base map prepared by the
MNDOT, Technical Services Division
in cooperation with the
U.S. Dept. of Transportation



LAND USE

SOURCE: _____
COMPREHENSIVE PLAN 1992
 City of White Bear Lake

Metro Plant. Several private on-site sewage septic systems remain in White Bear Lake in areas not serviced by the sanitary sewer system. The water source for the White Bear Lake water system is municipal wells.

The drainage system includes the storm sewers and the surface drainage which is defined by the terrain and the existing water bodies. Some ponds have been constructed for detention of runoff. Problem areas are discussed in Section 4-Management Strategies, of this Plan.

2.9 WATER APPROPRIATION PERMITS

There are four water appropriation permits issued by the DNR in White Bear Lake. Water appropriation permits are issued to permittees who pump greater than 10,000 gallons per day or over one million gallons of water per year. Permittees and pumping limits, measured in million gallons per year (MGY), are shown on Table 6.

TABLE 6			
WATER APPROPRIATIONS PERMITS			
Permit No.	Owner	Purpose	Amount (MGY)
69174-5	White Bear Lake	Municipal Waterworks	858
866316-1	Kohler Mix Specialties	Industrial Processing	130
886389-RW-1	Superamerican Group	Pollution Confinement	5
886389-RW-2	Superamerican Group	Pollution Confinement	5

Reference: Minnesota DNR-Water Appropriation Permit Inventory, 3/26/96

2.10 GROUNDWATER RESOURCE DATA

Ramsey County has published The Ramsey County Groundwater Quality Protection Plan. This publication contains a comprehensive topographic and geologic overview that describes the groundwater aquifers of the county, identifies groundwater contaminated areas and predicts areas of sensitivity to groundwater contamination. The Plan includes well-head protection areas. Model ordinances can be adopted by communities to help reduce contaminating events and minimize impact to groundwater resources. The City will rely on the Ramsey County groundwater model effort to provide basic elements for the WHPP for the municipal well field.

A Wellhead Protection Plan (WHPP) will be developed for the City after the Ramsey County groundwater model is completed.

2.11 WATER-BASED RECREATION AREAS

The single most unique water-based recreation feature of the City is White Bear Lake. This lake supports all recreational water activities: swimming, boating, and fishing. As the largest lake of Ramsey County, it attracts many users from the region. See Map 13 for recreation areas. Other water bodies are listed and classified by the management organizations. Those classifications are adopted by reference.

2.12 UNIQUE FEATURES AND SCENIC AREAS

The Minnesota Department of Natural Resources maintains a database of unique and sensitive plant and animal species. The following information was obtained from the DNR Natural Heritage Database.

Natural communities and one threatened animal species are found in the City. A cluster of natural communities of wet meadows and wet prairie is found near the northern border of the City along the Soo Line railroad tracks between T.H. 61 and I-35E. This cluster of wetlands is a City protected water.

The Blanding's turtle is listed as a threatened species. It has been found near lakes and wetlands in the City.

False indigo has also been sited within the City.

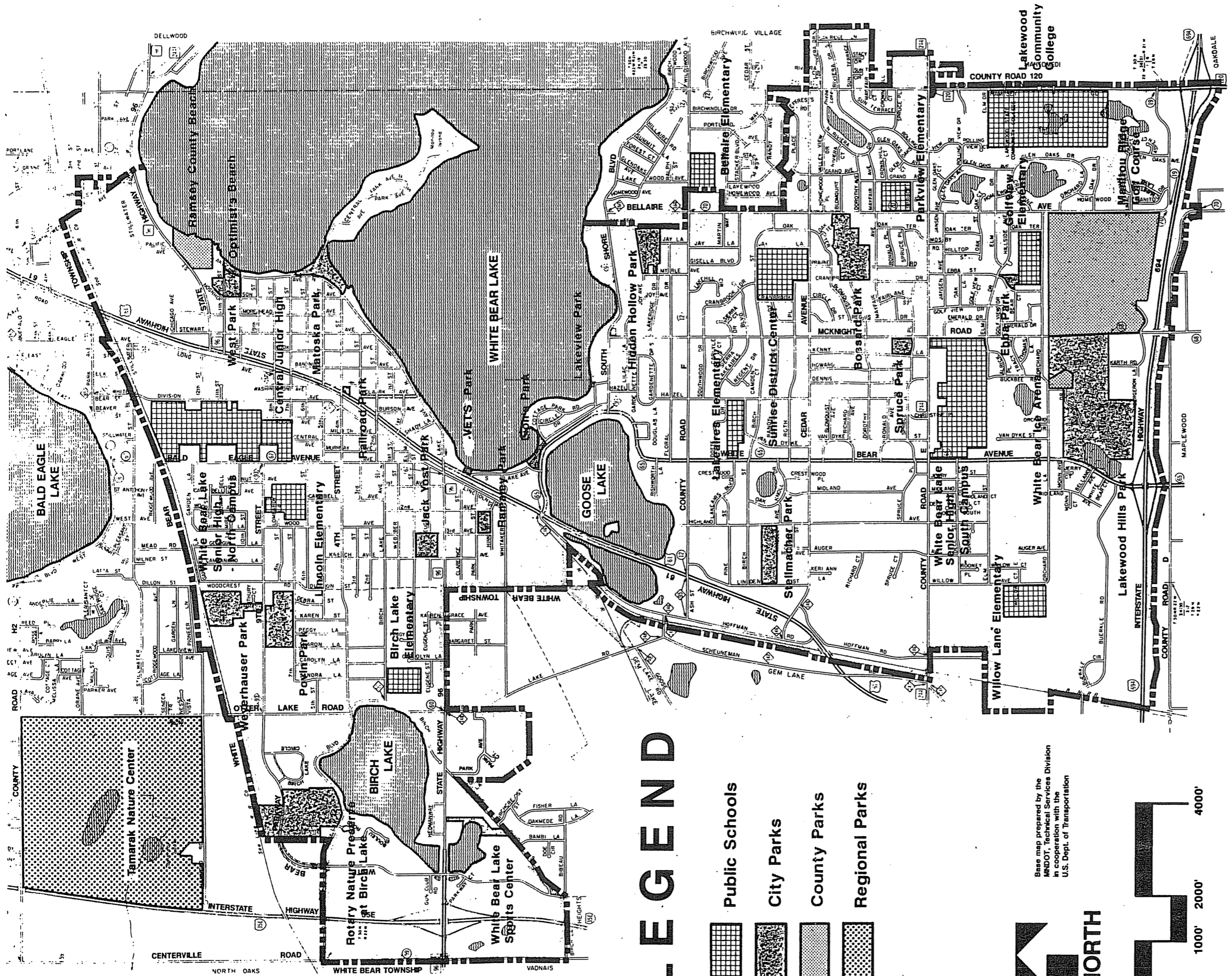
2.13 POLLUTANT SOURCES

Seven pollutant sources within White Bear Lake are identified by the Minnesota Pollution Control Agency. All dumps have been closed and hazardous sites are in various stages of soil and groundwater remediation. Pollutant sources are listed in Table 7 (see page 2-12).

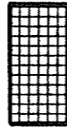

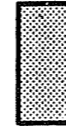

Other potential pollutant sources such as abandoned wells and petroleum leak sites are shown in the Ramsey County Groundwater Quality Protection Plan.

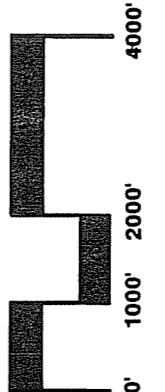
RECREATIONAL FACILITIES

MAP 13



LEGEND

-  Public Schools
-  City Parks
-  County Parks
-  Regional Parks



Base map prepared by the
MNDOT, Technical Services Division
in cooperation with the
U.S. Dept. of Transportation

**TABLE 7
POLLUTANT SOURCES - DUMPS AND LANDFILLS**

Name	Address	Description
Kohler Mix Specialties	4041 Highway 61	Discharge of noncontact cooling water
Lakewood Hills Apartments	3185 Karth	Old farm dump; no further action required
Old White Bear Road and Neschville/Lande Pond	35E and Highway 96	Lead shot; no action required by PCA
Old dump Site	4th Avenue and Whitaker Avenue	Residential waste dump site
Old Dump Site	Vicinity east of Division Street south of railroad tracks	Domestic waste
Lime Sludge Dump	1884 Whitaker Avenue	Lime sludge from water treatment
White Bear Municipal Sewage Treatment	Highway 61 and Whitaker Avenue	Sediment from old treatment plant

REFERENCE: Minnesota Pollution Control Agency, March 1996

SECTION 3
OBJECTIVES AND POLICIS

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

SECTION 3 - OBJECTIVES AND POLICIES

3.1 GENERAL

The White Bear Lake objectives and policies have been structured into a framework for water resource management as required by law. The Metropolitan Surface Water Management Act sets forth the purposes of municipal water resources plans as follows:

103B.201 Surface Water Management Program: Purposes.

The purpose of the surface water management programs required by Sections 6 to 16 (103B.205 to 103B.255) is to protect, preserve, and use natural surface and ground water storage and retention systems in order to (1) reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rates of runoff, (2) protect and improve surface and ground water quality, (3) prevent flooding and erosion from surface flows, (4) promote ground water recharge, (5) protect and enhance fish and wildlife habitat and water recreational facilities, and (6) secure the other benefits associated with the proper management of surface and ground water.

Sections 2 and 4 of this Plan examine existing physical and hydrologic conditions and the proposed future environment. This inventory, together with the general purposes of the Metropolitan Surface Water Management Act were used to determine the water resource management objectives and policies of the City of White Bear Lake.

The objectives and policies of the White Bear Lake local plan recognize the existing conditions and problems identified in this Plan and WMO studies. The objectives and policies are to be used as a guide in the design and construction of private and public developments impacting water resources in the City. They will not circumvent accepted and correct civil and water resource design procedures.

3.2 OBJECTIVES

A "Goal" or "Objective" is a desired end towards which the City's policies, standards, criteria, and rules are directed. Under this definition, the objectives of the City of White Bear Lake Water Management Plan are:

- ✓ 3.2.1. Establish water resource planning to guide future development and growth in a manner that will minimize environmental impacts.
- 3.2.2. Reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rates of runoff.

- 3.2.3. Improve water quality.
- 3.2.4. Prevent erosion from surface flows.
- 3.2.5. Control flooding.
- 3.2.6. Promote groundwater recharge.
- 3.2.7. Protect and enhance fish and wildlife habitat and water recreation.
- 3.2.8. Maintain and/or improve all existing natural and artificial water courses in order to protect water quality.

3.3 POLICIES

A "Policy" is a governing principle, a means of achieving an established objective. Policies guide a general course of management that leads toward goal achievement. Under this definition the policies of the City of White Bear Lake are:

3.3.1 Water Resource Planning

- a. The City of White Bear Lake Water Management Plan shall be consistent with metropolitan system plans and jurisdictional watershed plans.
- b. The City of White Bear Lake will establish early planning for undeveloped areas in order to ensure conformance with the water management plan. The City will also coordinate the planning with the water management organizations in the geographic area. This will minimize long range capital costs of stormwater management and maximize effectiveness from runoff and water control strategies.
- c. City planning for stormwater management will be conducted within sub-watershed - sub-basins interrelationship. The storm sewer system has been completely designed for full development conditions. Most of the designed system has been constructed.
- d. The City will manage its water resources based on the ultimate development of the City watershed as reflected in the 1991 City comprehensive plan and WMO plans, respectively. The City will coordinate zoning changes with the WMO in the geographic area.

3.3.2. Minimize Public Expenditures to Control Runoffs

- a. Future development will require additional storage of stormwater either on-site or through the construction of a regional detention area.
- b. Preserve the present capacities of the existing drainage system with proper maintenance. This will reduce the need for remedial measures such as costly repair or replacement.

3.3.3 Improve Water Quality

- a. Treat and/or control runoff to enhance water quality and to reduce pollutant loadings, especially nutrients and sediments.
- b. To preserve wetlands according to their “function and value” as required by the Minnesota Wetland Conservation Act (WCA).
- c. To maintain or improve water quality levels for waters and wetlands in the City in consideration of State standards.
- d. The City does not promote the installation of new private on-site waste water systems. Where City sewer is not available or economically feasible to attain, design and installation shall be in accordance with Minnesota Pollution Control Agency guidelines.
- e. Storm water shall be directed into waters or wetlands, in accordance with individual WMO/WD rules. New projects shall comply with the MPCA’s NPDES stormwater permitting program that prohibits the direct discharge of stormwater into exposed groundwater basins, or “waters of the state”.
- f. The jurisdictional WMOs shall act as depositories and coordinators for the collection of water quality data to assure consistency and comparability of data.
- g. The City shall provide regular maintenance and inspection, as needed, of regional detention basins. The City and the WMO must agree on identity of these areas.

3.3.4 Prevent Erosion from Surface Flows

- a. For land disturbance activities of more than 100 cubic yards, an erosion and sediment control plan in compliance with each specific WMO shall be submitted and approved by the City and implemented before any construction activities are begun.
- b. For excavations or regrading activities of more than 100 cubic yards, a permit shall be required in accordance with City Ordinance 903.070, Land Alteration Permit.
- c. All erosion and sediment control plans prepared for applicable land disturbance shall, at a minimum, conform to the "Best Management Practices for Minnesota: Protecting Water Quality in Urban Areas", prepared by the Minnesota Pollution Control Agency, and reprinted in December 1994. Compliance with the Ramsey Soil Erosion and Sediment Control Handbook is mandatory in Ramsey County.
- d. The City enforces Best Management Practices with the Land Alteration Permit (Ordinance No. 903.070).

3.3.5 Control Flooding

- a. To prohibit encroachment that will reduce the capacity of floodways.
- b. The City may accept measures such as flood proofing or flood protection in allowing building within the flood plain or structure types that will not receive excessive damage.
- c. The City shall cooperate with jurisdictional watershed organizations and governing agencies in managing for the 100 year flood level on designated waters and wetlands.
- d. The City has adopted floodplain zoning ordinances which conform to State regulations. City Ordinance 91-06-846 and City Zoning Code 1303.235 are available for review at City Hall.
- e. The lowest floor elevation of all development including basements, shall be required to be at least one and one-half feet (1½ feet) above the regional flood level for the adjacent water or wetland, unless a floodway has been adopted, in the latter case the elevation shall be one (1) foot plus the floodway surcharge. The regional flood levels have been determined and mapped by the Federal Emergency Management Administration. *Additional requirements may be imposed by individual watersheds.*

3.3.6 Promote Groundwater Recharge

- a. To protect recharge areas from potential sources of contamination to ensure that underground waters are maintained within the range of natural background quality.
- b. The City encourages land use development which incorporates methods such as grassed open spaces to allow infiltration of precipitation in all land use categories.
- c. The City encourages the use of facilities to enhance groundwater infiltration whenever possible, practical, and in conformance with Minnesota Rules, Chapter 7050.

3.3.7 Protect and Enhance Fish and Wildlife Habitat and Water Recreation

- a. The City has adopted local shoreland ordinances based on Minnesota Department of Natural Resources regulations. It is incorporated in the City Zoning Code 1303.230.
- b. To coordinate with counties and watershed districts to enhance water-based recreation.

3.3.8 Protect and Improve All Existing Natural and Artificial Watercourses

- a. The City recognizes that the jurisdictional watershed organizations shall provide all operation and maintenance responsibility of county ditches and their attendant branches.

- b. The watershed districts shall provide for regular inspection and maintenance, as needed, of outflow conveyors. Ditches within VLAWMO will be inspected and maintained by the City.
- c. The City shall maintain and operate storm drain systems and appurtenant structures within its right-of-way.

SECTION 4
MANAGEMENT STRATEGIES

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

SECTION 4 - MANAGEMENT STRATEGIES

4.1 GENERAL

This section of the management plan addresses the strategies used or proposed for White Bear Lake to manage the water resources within the City. It includes references to the existing City ordinances. Additional proposed ordinances are identified in this section. The criteria relating to the management policies are included in the section. These criteria encompass the management of stormwater runoff, hydrology and hydraulic design; wetlands; groundwater; shoreland areas; flood plains; soil erosion and sediment control; and land designated for open space, recreation, and wildlife habitat. These criteria ensure that the management policies are consistent with the City's goals and overall comprehensive plan. Specific standards are presented for development, redevelopment, and improvements throughout the City. The regulation and enforcement practices are also included. Capital Improvement Projects identified for the City which will help manage water resources within White Bear Lake are listed and briefly described in this section.

4.2 STANDARDS AND PRIORITIES

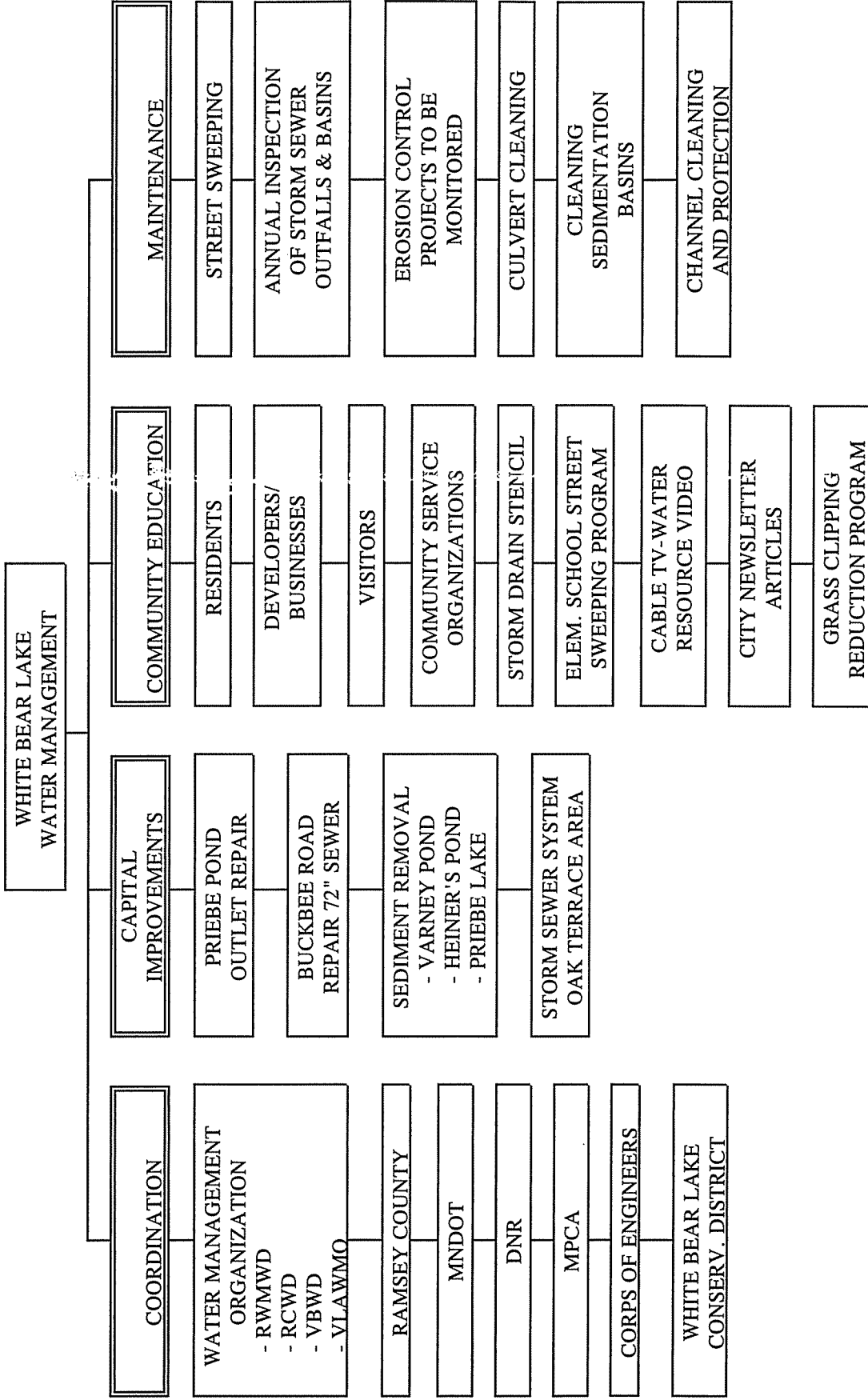
The standards, as a minimum, establish the degree of performance necessary to achieve improvements in water quantity and quality management. While these standards relate to one of the criteria areas, it should be noted that they are interrelated and may serve multiple purposes. For example, proper water quantity control measures often improve water quality and management of areas for recreation, open space or wildlife habitat.

The standards discussed in this section are the preferred or desired levels of quantity, quality or value for the City's water resources. Although the standards may not be completely achievable for every water resource, they do provide a means to rate various resource characteristics. The GLOSSARY has definitions of several terms used in this section and throughout this document.

Resources of time and money available for implementing water resource management practices in the City of White Bear Lake are, and will likely continue to be, limited. For this reason, the City recognizes the need to use management priorities to guide the use of these resources. The highest management priorities are to protect the drinking water supply and to protect the inhabited areas from flooding. Any water resource that has needs related to those highest priorities will be given immediate attention. When an immediate need is identified it is given first priority status. Resources with longer term, less immediate need of protection or enhancement such as erosion and sediment control are given priority as financing and other resources are available.

Other important water issues such as groundwater management, shoreland management, floodplain management, and preservation and enhancement of open space, water recreation, and fish and wildlife habitat are more difficult to address on a local level. Regulation and enforcement related

MANAGEMENT STRATEGY



to groundwater, shoreland, floodplain, fish and wildlife habitat tend to be regional, State, or Federal functions.

The standards and priorities for the City of White Bear Lake are reflected in the Management Strategies described in this Plan. For issues regulated by state and federal agencies, the governmental unit is described.

4.2.1. Stormwater Runoff

- a. The level of service to be provided by lateral conveyors shall be a local White Bear Lake policy, subject to the requirement that the level of service, or primary capacity, shall at all times be adequate for the proper performance of affected ponds and other storage areas. Information on specific structure systems is available at the City Engineering Department.
- b. Lateral conveyors shall be designed to provide primary capacity for short duration (1-hour) rainfalls with frequency of 5 years with the ability of secondary capacity for the critical duration (or snowmelt) 100-year rainfall event.
- c. Stormwater shall not discharge from lateral conveyors directly into any waters or wetlands other than designated detention basins without either primary sedimentation in a natural or man-made structure, such as catch basins or grit chambers, and/or an established program of street, maintenance or house-keeping practices implemented to reduce the inflow of pollutants. RCWD requires skimming devices to provide treatment for the 1-year event and VBWD requirements are for the 5-year event.
- d. Land use adjacent to flood plains shall be regulated in accordance with state and local floodplain zoning regulations (including freeboard surcharge and, where appropriate, floodway surcharge). See the Floodplain Overlay District and Ordinance #87-8-745, dated August 1987 and the amendment #91-06-846, dated June 1991.
- e. Outflow conveyors shall be designed to provide for primary capacity of at least a 10 year frequency rainfall event with the ability of secondary capacity for the critical duration 100 year frequency event.
- f. Proposers of all developments or construction projects greater than 2.5 acres in size shall submit rate and runoff control measures with the permit applications. Runoff management calculations and plans may be required for smaller developments by the water management organizations (RCWD, RWMWO, VBWD, and VLAWMO). The runoff control plans must provide:
 - 1) Calculations showing that the post-development rate of discharge will not exceed pre-development rate.
 - 2) Plans for an outlet control structure to provide rate control consistent with the requirements of the watershed district or watershed management organization plan. Energy dissipater devices to reduce outlet velocities to 4 fps or less are required.
 - 3) Design ponds with permanent standing water levels at an average of four feet in depth, as recommended in BMPs. VBWD and VLAWMO require emergency spillways.

- 4) Proposer must provide dead storage volume of no less than the calculated runoff from a 2.5-inch rainfall over the tributary area. The dead storage shall be below the outlet of newly constructed detention basins to allow for reasonable accumulation of sediment.
- 5) Proposer shall provide easements for access and maintenance.
- 6) Proposer shall provide as-built drawings of the runoff control measures at the completion of construction. The drawings and calculations shall be signed by a registered professional engineer.

4.2.2 Hydrology and Hydraulic Design

Hydrologic analysis of stormwater runoff for the planning and design of flows in lateral and outflow conveyors, streams and channels to lakes, detention basins, and wetlands shall be made using generally accepted hydrograph methods. The developers of the property are responsible for providing hydrologic/hydraulic assessments of pre- and post-construction conditions for WD/WMO and City review.

Determination of total runoff volume should follow the USDA-SCS curve number method which incorporates land use and hydrologic soil groups. Specific step-by-step process can be found in the SCS publication NATIONAL ENGINEERING HANDBOOK: Chapter 4, Hydrology, (1972) and HYDROLOGY GUIDE FOR MINNESOTA (1977). Peak runoff rates should be determined through the use of the SCS method incorporating *time of concentration* determined for both prior and post development conditions. Other methods used by engineers to determine peak runoff rates are available and may be used if approved by the watershed organization. The models should include mathematically routing runoff through the drainage area determining the peaks and volumes as they move in a wave progressively downstream. For large private developments, which may incorporate more than one on-site detention system, the proposer must prepare a stormwater routing analysis and plan for City and watershed approvals. For other developments, hydrograph analysis and possible routing may be done by the City Engineer or the jurisdictional watershed organization where regional detention basins or outflow conveyors are impacted. The developers may be assessed for this analysis.

"**Design Storms**" or storm volumes for hydrologic analyses shall be based upon Hershfield, D.M., 1961, Rainfall Frequency Atlas of the United States for Durations of 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years, Technical Publication Number 40 (TP-40) and supplemented with Oberts, G.L., 1984, Surface Water Management: Precipitation Frequency Analysis for the Twin Cities Metropolitan Area, Metropolitan Council, Publication Number 10-84-007 along with Fredrick, R.H., 1977, Five to 6; Minute Precipitation Frequency for the Eastern United States, NOAA Technical Memorandum NWS HYDRO-35, Office of Hydrology, Silver Spring, Maryland. The data developed by the WMOs will be adopted by reference.

4.2.3 Sub-basin Hydrology

Peak stormwater discharges from any single sub-basin or group of sub-basins tributary to an outflow conveyor, regional retention basin, or wetland shall be limited to those rates shown in watershed management plans, or if not shown, as may be determined by the watershed organization. The developer is responsible for providing this information as required.

In those areas where storm water runoff conveyance system has not been fully developed, the normal levels and flood levels reported in jurisdictional watershed organization, or if not shown, as may be determined by the watershed, are generally intended to guide detailed design. These levels must assure that adequate storage volume can be provided, outflow conveyer discharge requirements can be met, an adequate level of protection results, and there is not a conflict with water quality management criteria. The storm sewer system has been designed for all of White Bear Lake and most of the system has been constructed and is in operation.

4.2.4. Wetlands

The State of Minnesota adopted legislation in 1991 which affects development or any land alteration near wetlands. The legislation is known as the Wetland Conservation Act (WCA). The regulatory provisions of WCA are in effect for the entire state of Minnesota. Minnesota Rule, Chapter 8420 was approved by the Chief Administrative Law Judge in 1993 and the permanent Program began in 1994. The WCA was further amended by the 1996 legislature. These amendments, 1996 Laws of MN, Chapter 462, Section 24 became effective April 12, 1996.

Wetlands are identified according to the WCA rules. Maps are available showing many of the wetlands in the City. Copies of the NWI and DNR protected water maps are available for review at the White Bear Lake City Hall.

The watershed organizations have been the administrators of the Wetland Conservation Act for wetland issues in White Bear Lake since 1991. It is the intent of the City of White Bear Lake to maintain that arrangement. The watershed organizations are the designated local government unit (LGU) for the White Bear Lake wetland issues. The Minnesota Board of Water and Soil Resources (BWSR) is the state administrative agency for the Wetland Conservation Act. The administration and the authority of Chapter 8420 is the BWSR. The US Army Corps of Engineers (COE) also reviews plans for projects which impact wetlands and issues permits for the impact and mitigation plans.

Activities such as fill or excavation in a wetland are regulated by the Minnesota Rules, the COE, and the watershed organizations. Wetland impacts must be avoided if possible. When impacts are unavoidable, a replacement plan and application are required for most construction and grading which impacts a wetland.

Some activity in a wetland is exempt from the requirement to create a replacement wetland. Those exemptions are listed and described in 8420.0120 Exemption Standards of the rules and the 1996 amendments. For exempt activities, the proposer shall submit a request for a certificate of exemption to the watershed management organization. The water management organizations have some additional, stricter standards for particular wetland impacts. The City will inform persons proposing any land-disturbing activities, including drainage affecting a DNR protected water, that the project may require a DNR permit and that a COE permit may be required for all wetland impacts.

The Commissioner of the Department of Natural Resources (DNR) is responsible for enforcement of the Act (WCA). Although conservation officers are primarily responsible for this enforcement, the City Engineer shall assist the DNR. The water management organizations administer the WCA.

4.2.5. Groundwater

The City shall support the proper utilization of groundwater resources and advocate better groundwater management procedures. Specifically to:

- a. Attempt to preserve groundwater quality and quantity.
- b. Concentrate protection of groundwater quality in areas designated by County or watershed organization.
- c. Promote groundwater recharge by using regional detention/treatment ponds to store water from snow melt and rain storms and by using channels and natural drainageways wherever feasible.

4.2.6. Shoreland Management

The City of White Bear Lake has many lakes and wetlands located in the City. The largest of the lakes, White Bear Lake, receives significant amounts of runoff from some quite dense commercial and residential areas. Two other significant lakes are Birch Lake and Goose Lake, both of which suffer water quality problems associated with small, shallow lakes. Other lakes in the City are Handlos, Varney, Priebe, Bergeron, Peppertree, Heiners, and Oak Knoll as shown on Map 4 in Section 2. It is imperative that the shoreland of lakes in the City be developed in a manner consistent with MN/DNR protection standards in order to maintain or improve the quality of lakes within the City.

The City of White Bear Lake has adopted a State approved shoreland ordinance. The ordinance includes setback requirements which are regulated by zoning requirements.

4.2.7. Floodplain Management

The legislature of the State of Minnesota has in Minnesota Statutes Chapters 462, delegated the authority to local governmental units to adopt regulations designed to minimize flood losses. Minnesota Statute, Chapter 103F further stipulates that communities subject to recurrent flooding must participate and maintain eligibility in the National Flood Insurance Program. Additional requirements may be imposed by individual watershed plans.

As part of the Flood Insurance Program, the boundaries of floods that have a recurrence interval of 100 years (100-year flood) have been defined on maps for the City of White Bear Lake. The Flood Insurance Rate Map for the City, dated September 4, 1987, developed by the Federal Emergency Management Agency, has been adopted as the official floodplain district map. This map is on file at City Hall. More detailed information developed by the WMOs will be adopted by reference when provided to the City.

A significant problem exists in the sole usage of this data to determine the 100-year floodplains within the City. The data provided in the flood insurance studies are based upon development existing at the time of the studies. Development since the study and future development may significantly alter the delineation of the 100-year floodplain and the elevation of the 100-year flood profile within the City. Therefore, it should be recognized that the sole use of information from flood insurance studies may result in a floodplain management program that will not meet the purposes of the City's Floodplain Management Regulations 87-8-745.

The City does not allow site development involving outside storage of soluble, toxic, or buoyant materials in the floodplain. Flood fringe encroachment within shoreland areas associated with public waters is not allowed.

4.2.8. Soil Erosion and Sediment Control

As development continues in response to the growth needs of the City, construction practices are usually accompanied by a loss of soil through erosion. Most areas of the City have granular soil types and are therefore, susceptible to the forces causing erosion. Sediment removed from areas stripped of vegetation cover can be carried into downstream drainage ways and water bodies. Once present in these downstream areas, the sediment often degrades the water quality, obstructs flow, and reduces the depth of downstream water bodies. To reduce and eliminate sediment from construction sites, proposers of new development and/or construction sites shall submit erosion and sediment control plans as part of their permitting process for all projects that disturb vegetated cover or that affect critical erosion areas.

The contractor/owner must implement the best management practices for the site conditions involved and shall consider erosion sediment resulting from flowing water, wave action, and wind.

Specifically, erosion control plans must:

- a. Require that contractor complete erosion and sediment control facilities before beginning rough grading.
- b. Require that silt fences be supplemented and supported with hay bales staked with at least two sturdy metal or wooden posts per bale in all areas where minor runoff (less than 1 cfs) may be concentrated.
- c. Route flows from diversion channels or pipes to sedimentation basins or appropriate energy dissipaters to prevent transport of sediment to outflow or lateral conveyors and to prevent erosion and sedimentation when runoff flows into the conveyors. Protect storm sewer inlets not needed for drainage.
- d. Provide that site-access roads be graded or otherwise protected with silt fences, diversion channels, or dikes and pipes to prevent sediment from exiting the site via the access roads. Primary site-access roads shall be surfaced with crushed rock for 50 feet where they adjoin existing paved roadways.

- e. Require that soils tracked from the site by motor vehicles be cleaned from paved roadway surfaces daily throughout the duration of construction.
- f. Assure that silt fences and diversion channels or dikes and pipes will be used and maintained for the duration of site construction. If construction operations interfere with these control measures, the silt fences, diversion channels, or dikes and pipes may be removed or altered as needed but shall be restored to serve their intended function at the end of each day.
- g. Disturbed areas must be revegetated or mulched permanently or temporarily if it can be reasonably anticipated that significant additional grading will not occur within 30 calendar days. A schedule of significant grading work will be required as part of the erosion and sedimentation control plan.
- h. Require that temporary or permanent mulch be disc-anchored and applied at a uniform rate of not less than 2 tons per acre.
- i. Provide a temporary vegetative cover consisting of a suitable, fast-growing, dense grass-seed mix spread at 1.5 times the usual rate per acre. If temporary cover is to remain in-place beyond the present growing season, two-thirds of the seed mix shall be composed of perennial grasses.
- j. Specify a permanent vegetation cover consisting of sod or a suitable grass-seed mixture or a combination thereof. Seeded areas shall be either mulched or covered by fibrous blankets to protect seeds and limit erosion.
- k. Provide temporary on-site sedimentation basins that conform to the criteria for on-site detention basins whenever other erosion and sedimentation control practices are inadequate.
- l. Employ soil conservation practices that limit after development soil loss to not more than 0.5 tons/acre/year based on the universal soil loss equation.
- m. Additional items as required by the geographic WMO.

4.2.9. Open Space, Recreation, and Wildlife Management

In concert with the intention of the Metropolitan Surface Water Management Act, the City of White Bear Lake recognizes the need to protect and enhance wildlife habitat, water recreation, and open space as the intensity of urban land use increases. Accordingly, the City is in the process of updating its comprehensive plan detailing open space and recreation resources planning. A copy of the most recent update of the comprehensive plan may be reviewed at City Hall.

4.2.10. Education and Public Involvement

The City of White Bear Lake recognizes the need to inform citizens of the protection measures in progress and advisable to better manage our natural water resources. The City has several programs to increase public awareness and involvement in these issues. The City of White Bear Lake is committed to additional programs for public education and involvement.

Existing Programs

Storm drain stenciling

Street sweeping

Elementary Education street sweeping program.

City newsletter articles

Careful use of de-icing chemical for sidewalks and for dewatering

Educational videos on Cable TV

Public information seminars

Fertilizer information/requirements

Proposed New Programs

Grass clipping reduction/ change in trash collection rate structure to encourage mulching

Continuing news/TV articles

Encourage use of County compost sites

Watershed Organizations and Ramsey County

Information developed by other agencies will be used to inform the public of ways to protect water quality within the City

4.3 ASSESSMENT OF PROBLEMS

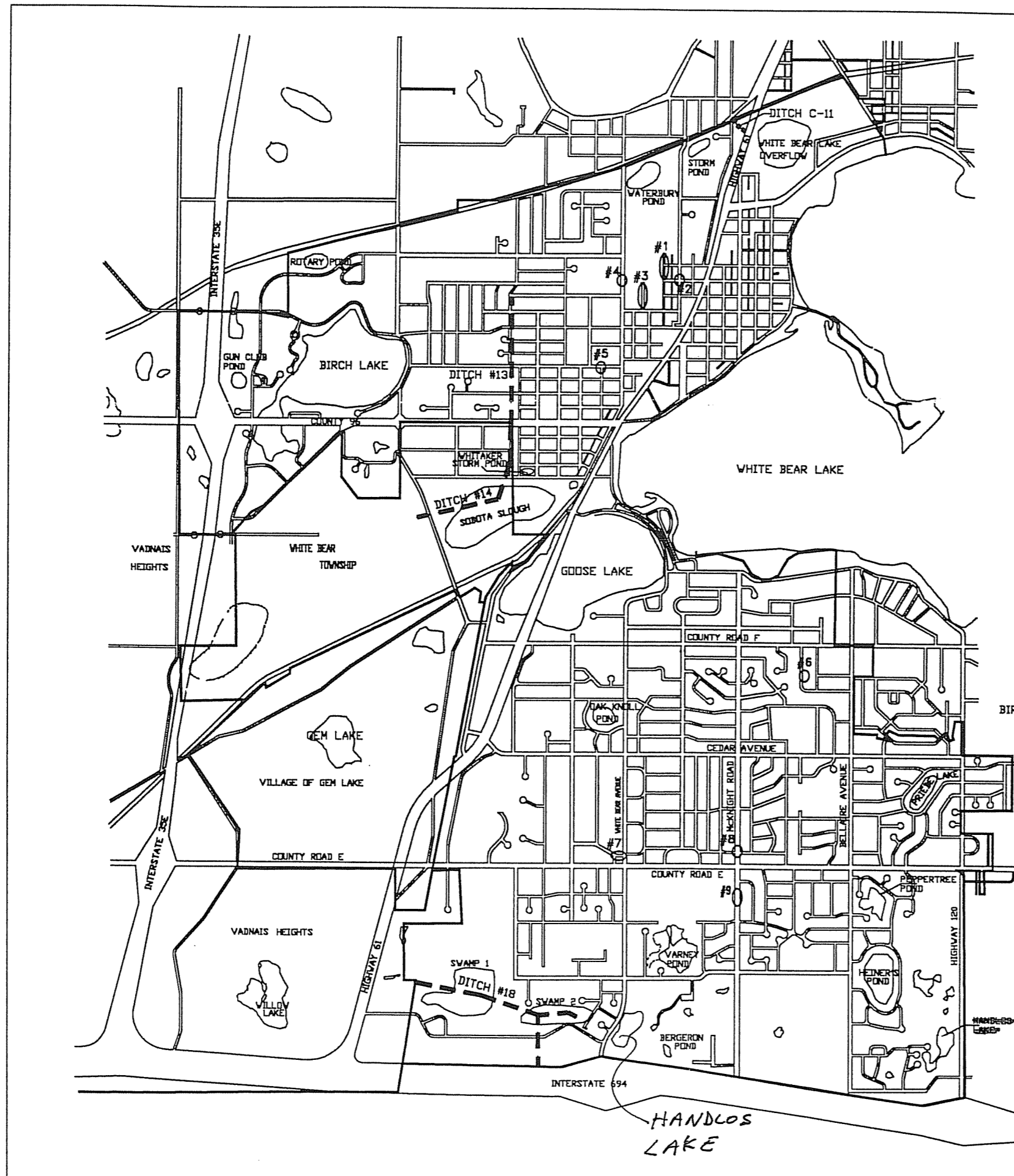
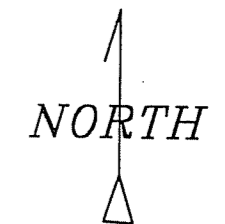
The Public Works Department staff has identified water resource related problem areas within the City of White Bear Lake. Temporary flooding occurs at several locations during intense rainfall or low frequency storm events. This temporary flooding occurs due to undersized storm drains, insufficient numbers of catch basin inlets, and street settlement. The areas subject to temporary flooding have been streets and ditches. Property damage to nearby structures and facilities has not been a problem. The problem areas are shown on Map 14.

4.4 CAPITAL IMPROVEMENTS

The City of White Bear Lake has identified capital improvement projects related to water resource protection. The Capital Improvement Plan (CIP) includes projects scheduled for the next several years.

MAP 14
PROBLEM AREAS

WATER MANAGEMENT PLAN
CITY OF WHITE BEAR LAKE



LEGEND

CITY BOUNDARY ———

KEY OF PROBLEM AREAS

- 1 BLOOM, 7th ST to 8th ST — 1997
- 2 7th ST. & DIVISION ST. — 1998
- 3 CENTRAL AVE., 5th ST. to 7th ST. — 1996
- 4 BALD EAGLE AVE. & 7th ST. — 99-2000
- 5 FIRST AVE. & BIRCH LAKE BLVD.
- 6 GISELLA BLVD.
- 7 SPRUCE PL., MIDLAND AVE. to WHITE BEAR AVE. —
- 8 SPRUCE PL. & MCKNIGHT RD.
- 9 MCKNIGHT RD. between EMERALD DR. & ELM DR.

<u>Year</u>	<u>Location</u>	<u>Description</u>
1996	Banning Avenue: 4th St. to Lake Ave	Storm sewer (completed 1996)
1996	Washington Avenue: 4th St. to 3rd St.	Storm sewer (completed 1996)
1997	Priebe Pond	Outlet repair
1997	Buckbee Road	Repair 72" sewer
1998	Varney Pond	Pond maintenance, sediment removal
1998	Heiner's Pond	Pond maintenance
1998	Priebe Lake	Pond maintenance
2000	Oak Terrace area	New storm sewer system

The areas with temporary flooding problems will be addressed as part of the planned street improvement projects scheduled over the next several years. The projects will include grading changes and construction of new storm sewers and catch basin inlets.

SECTION 5
PLAN IMPLEMENTATION

CITY OF WHITE BEAR LAKE WATER MANAGEMENT PLAN

SECTION 5 - PLAN IMPLEMENTATION

This section of the management plan addresses the plan implementation. It includes the process which shall be followed to adopt the Water Management Plan. The Chart on the following page shows the major considerations to be addressed during the process.

5.1 PROCESS

The Plan has been prepared to incorporate the BWSR rules and the requirements of the state and federal agencies and of the watershed organizations. The Plan is to be approved by the City Council. Once approved by the Council, it will be sent to the four watershed organizations for their review and comment.

The Council-approved Plan will be sent to the watershed organizations for their approval. The staff or representatives of the Ramsey Washington Metro Watershed District, the Rice Creek Watershed District, the Valley Branch Watershed District, and the Vadnais Lake Area Watershed Management Organization will review the Plan for conformance with the requirements of their plans. Once their reviews are completed, any necessary revisions will be made and the Plan will be approved for City implementation. The Plan Amendment Procedure is addressed at the end of this section in Paragraph 5.

5.2 REGULATORY ACTION

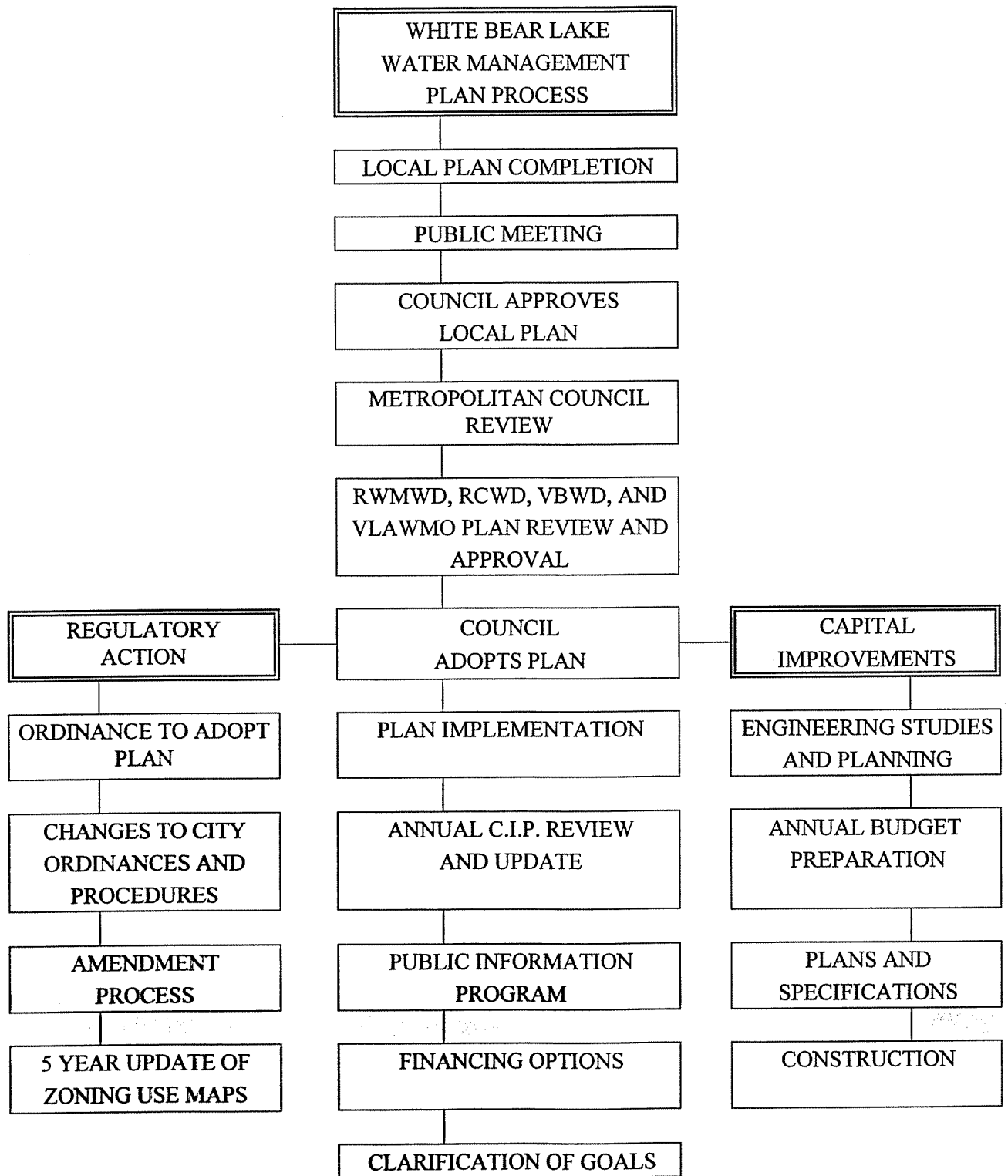
Several state and federal agencies are responsible for some water resource issues. The City of White Bear Lake will continue to cooperate with those agencies and will update the City rules and procedures to meet the requirements of those agencies.

The City of White Bear Lake requires that the proposer of a project obtain a Land Alteration Permit prior to any grading operation. A building permit is also required for construction of structures. Some of the required attachments to the application for the permit involve water resources protection issues. Those attachments include: the grading plan showing contours, the drainage plan, calculations for excavation and fill, and a sediment and erosion control plan. The applicant is also required to conform to the requirements of the White Bear Lake Water Management Plan.

5.2.1. Water Quantity

The City has established criteria for design of the water conveyor systems to provide both primary

IMPLEMENTATION PROCESS



and secondary capacity. The primary capacity relates to the "level of service" provided by the conveyor system. The **level of service** is defined as that part of the conveyor system's total capacity needed to convey runoff without unusual hardship or significant interference with day-to-day public activities. Proposers of new developments or construction projects or land development greater than 2.5 acres in size shall submit rate and runoff control measures with the permit applications. The criteria within the different watershed organizations vary slightly. The criteria are addressed in SECTION 4 - MANAGEMENT STRATEGIES.

5.2.2. Water Quality

The City has developed criteria for treatment levels required for runoff. The minimum treatment required is according to the National Pollutant Discharge Elimination System (NPDES) construction regulations and best management practices (BMP) for each particular site. Development within the drainage area of the St. Paul Water Utility Protected Waters are specifically addressed in the VLAWMO Watershed Management Plan. The City of White Bear Lake requires that all development in those areas conform to the special requirements of the watershed organizations. The RCWD has identified White Bear Lake as a "Tier 1" waterbody. The City commits to working with the geographic WMOs to identify water quality treatment locations as they become available.

5.2.3. Wetlands

The City established a Wetland District and Wetlands Ordinance No. 1303.240 in August of 1987. The State of Minnesota adopted legislation in 1991 which affects development or any land alteration near wetlands. The legislation is known as the Wetland Conservation Act Rules, Chapter 8420 (WCA). Amendments were adopted in July 1993. Major revisions were adopted by the legislature in 1996.

The water management organizations and watershed districts have been the administrators of WCA for wetland issues in White Bear Lake since 1991. It is the intent of the City of White Bear Lake to maintain that arrangement. The watershed organizations (watershed districts and watershed management organizations) are designated as the local governmental unit (LGU) for White Bear Lake wetland issues. The Minnesota Board of Water and Soil Resources (BWSR) is the state administrative agency for the Wetland Conservation Act (Chapter 8420).

Activities such as fill in a wetland are regulated by the Minnesota Rules and the U.S. Army Corps of Engineers. A replacement plan is required for most construction and grading which impacts a wetland. The geographic WMOs administer the WCA and wetland alteration permitting according to their plans.

All activities which may impact a wetland must be approved by the watershed district prior to construction. If a wetland is impacted without the proper approvals a cease and desist order may be issued. The Commissioner of the Department of Natural Resources (DNR) is responsible for enforcement of the WCA. Although conservation officers are primarily responsible for this enforcement, the City Engineer shall assist the DNR.

5.2.4. Groundwater

The State of Minnesota has directed the counties to develop groundwater protection plans. The state has prepared a priority list for implementation of the wellhead protection program. The City of White Bear Lake will coordinate with the state and with Ramsey County to protect the groundwater resource from contamination and to protect the groundwater recharge areas. The City does not have any groundwater ordinances at this time. As model ordinances become available, the City shall review the need for a new ordinance. The City supports the protection of groundwater resources and advocates better groundwater management procedures.

5.2.5. Shoreland Management

The City of White Bear Lake has many lakes and wetlands located in the City. The largest of the lakes, White Bear Lake, receives significant amounts of runoff from dense commercial and residential areas. The White Bear Lake Conservation District has programs for protection of this resource.

Other small shallow lakes within the City have water quality problems typical of similar size water bodies in the Twin Cities Metro area. The City of White Bear Lake adopted a State approved shoreland ordinance in December 1994. The City Shoreland Code 1303.230 is consistent with MN/DNR protection standards to maintain or improve the quality of lakes within the City.

5.2.6. Floodplain Management

As part of the Flood Insurance Program, the boundaries of floods that have a recurrence interval of 100 years (100-year flood) have been defined on maps for the City of White Bear Lake. The Flood Insurance Rate Map for the City, dated September 4, 1987, developed by the Federal Emergency Management Agency, has been adopted as the official floodplain district map. The map is on file at the City Hall.

The City adopted a Flood Plain Ordinance, Code No. 1303.235, in June 1991. The City continues to enforce the provisions of that ordinance.

5.2.7. Soil Erosion and Sediment Control

As development occurs, construction practices are usually accompanied by a loss of soil through erosion. Most areas of the City have granular soil types and are therefore, more susceptible to the forces causing erosion. Sediment removed from areas stripped of vegetation cover can be carried into downstream drainage ways and water bodies. Once present in these downstream areas, the sediment can degrade the water quality, obstruct flow, and reduce the depth of downstream water bodies.

White Bear Lake has adopted a Land Alteration and Mining Ordinance No. 1302.070 in 1989. Proposers must submit erosion and sediment control plans with their Land Alteration Permit Application.

In addition, for all construction impacting more than five acres, the owner and the contractor must sign the MPCA General Construction Permit I order to meet the NPDES requirements. This is consistent with the requirements in the Watershed Management Plans for RWMWD, RCWD, VBWD, and VLAWMO.

5.2.8. Open Space, Recreation, and Wildlife Management

In concert with the intention of the Metropolitan Surface Water Management Act, the City of White Bear Lake recognizes the need to protect and enhance wildlife habitat, water recreation, and open space as the intensity of urban land use increases. Accordingly, the City is in the process of updating its comprehensive plan detailing open space and recreation resources planning. A copy of the most recent update of the comprehensive plan may be reviewed at City Hall.

5.2.9. Education and Public Involvement

The City of White Bear Lake has developed several procedures to inform citizens of possible protection measures to better manage our natural water resources. The City commits to continuing programs for public education and involvement.

The storm drain stenciling program involves citizen volunteers who paint reminders on catch basins. The City will continue to visit the schools to demonstrate equipment used for cleaning the streets. The City will continue to distribute information to residents in newsletters and brochures.

New programs include a proposed change to the trash collection rates to encourage citizens to mulch grass clippings. The proposed fee for collection of yard debris will encourage many residents to consider mulching as an alternative to disposal of clippings in the trash.

The City cooperated with the local cable TV personnel to produce a special documentary on water resource issues. The City will distribute information encouraging citizens to use the Ramsey County compost sites.

5.2.10. Maintenance and Inspection

The City of White Bear Lake has developed a maintenance and inspection schedule for many items which impact water resources. The City maintenance crews sweep sand and sediments from the streets which drain directly to White Bear Lake at frequent intervals. The City crews are responsible for inspection of structures within the City. The inspections are completed at a minimum of once each year.

Ramsey County has an inspection program to check the individual sewage treatment systems (ISTS) as recommended by the state statutes. Most of the properties within the City limits are connected to the City sanitary sewer system. Therefore, the County will continue inspection of those properties which are not connected to the City system to ensure compliance with MPCA standards. *Currently inspections occur at 2 year intervals.*

- frequency of sweeping & pump cleaning - pond inspection

5.2.11. Finance

Resources of time and money available for implementing water resource management practices in the City of White Bear Lake are, and will likely continue to be, limited. For this reason, the City recognizes the need to use management priorities to guide the use of these resources. The highest management priority is any water resource need related to stormwater runoff or water quality management. When an immediate need is identified it is given first priority status. Longer term needs for erosion and sediment control will be addressed as a second priority.

The standards, as a minimum, establish the degree of performance necessary to achieve improvements in water quantity and quality management. While these standards relate to one of the criteria areas, it should be noted that they are interrelated and may serve multiple purposes. For example, proper water quantity control measures often improve water quality and management of areas for recreation, open space or wildlife habitat.

Funding sources for water quantity and water quality improvement projects will be determined for individual projects by the City. Possible sources include:

- Special assessments to impacted property owner
- City funds for budgeted projects
- State aid funds
- Assistance from special interest groups
- Watershed district funds for projects budgeted by those organizations.

5.3 ASSESSMENT OF PROBLEMS

The City of White Bear Lake staff and Council identified areas where temporary flooding occurs after intense rainfall events. Some local temporary flooding problems have been resolved. The areas along City streets which do not damage homes, other structures, or property will be addressed as part of the street improvement projects scheduled over the next five years. Improvements may include adding or replacing catch basin inlets, adding or replacing storm sewer piping, and regrading streets.

5.4 CAPITAL IMPROVEMENT PROJECTS

The City of White Bear Lake has developed a list of capital improvements planned for the next five years. The projects related to protection of water resources are listed in Section 4.4 of this Plan. The City includes the items scheduled for a particular year in the annual budget. Additional items may be identified and added to the project list according to the budgeting procedure.

5.5 AMENDMENT PROCEDURES

This section establishes the process by which interim amendments to the Plan may be made and who may initiate the amendments. This City of White Bear Lake Water Management Plan is effective through the year 2007 or within a two year interval after publication and adoption of this watershed plan revision.

The City of White Bear Lake recognizes that the Water Management Plan must periodically be amended to remain a useful long-term planning tool. Comprehensive studies and some capital improvements programs undertaken will warrant review or amendment. Occasionally, the goals, policies, criteria, and management strategies may need revisions.

Information will be revised and updated whenever new site-specific data is generated by state, federal, regional agencies, counties, local governments, City of White Bear Lake, individuals, or developers. The City of White Bear Lake will keep a record of the supplemental data until the Council decides that republication of the Plan is warranted (based on the extent of the revisions). In the interim, the supplemental data will be available for review at the City of White Bear Lake City Engineer's Office.

Recommendations for program changes or Plan amendments may be initiated by individuals, special-interest groups, local and County governments, federal, state, and regional agencies, and the City of White Bear Lake itself. All recommendations must be submitted to the City Engineer in writing along with a statement of problem and need, a rationale for the City of White Bear Lake involvement, and an estimate of the cost. The City Engineer will keep a record of all recommendations and will forward the requests for amendment to the City Council at least annually. The Council shall schedule a meeting annually for review of the recommendations and to hear testimony from sponsors.

Any proposed amendments to the Water Management Plan involving the goals, policies, criteria, management strategies, or technical appendix shall be considered and adopted or rejected by the Council.

General Amendment Procedures

The City will adhere to the review process provided in Minnesota Statutes, Section 103B.235, Subdivision 3, 3a, and 5 for adoption of amendments.

- The staff will review the proposed amendments and provide the Council with information and a recommendation.
- The City of White Bear Lake will hold a public meeting to explain the amendments and publish a legal notice of the meeting twice, at least seven days and 14 days before the date of the meeting.
- The City will send copies of the amendments to the watershed organizations and the state review agencies for review and comment.

- The Council may determine that the amendments are approved or may reject the proposed amendment.
- Following City Council approval and prior to City Council adoption, the proposed amendment shall be reviewed and approved by the WMO(s) District Board. The review shall occur within a 60 day period in accordance with Minnesota Statutes 473.879, Subdivision 5.
- Final action on an amendment is City Council adoption. However, prior to adoption, an additional public hearing may be held, if in the opinion of City staff, City Council, or WMO, public input would be of value.
- The City's Plan will remain in effect through 2007. The management plan will then be reviewed for consistency with current water resources, management methods, and watershed organization plans. At that time, past amendments can be added to the document. Depending on the significance of changes, a new printing of the Plan may be necessary. At a minimum, the Capital Improvement Program shall be amended every five years.

Form and Distribution of Plan Amendments

Unless the entire document is reprinted, all amendments adopted by the organization will be printed in the form of replacement pages for the Plan, each page of which will:

- On draft amendments being considered, show deleted text as stricken and new text as underlined;
- Renumbered as appropriate; and
- Include the effective date of the amendment.

The City of White Bear Lake will maintain a distribution list of agencies and individuals who have received a copy of the Plan and shall distribute copies of amendments within 30 days of adoption. The City of White Bear Lake will send draft copies of proposed amendments to all plan review authorities to seek their comments before establishing a hearing date or commencing the formal review process.

REFERENCES

REFERENCE

Metropolitan Council. "Interim Strategy to Reduce Nonpoint Source Pollution to all Metropolitan Water Bodies", November 1, 1992.

Metropolitan Council. "Precipitation Frequency Analysis for the Twin Cities Metropolitan Area," an Update, January 1995.

Metropolitan Council. Regional Blueprint, September 1994.

Metropolitan Council, Twin Cities Metropolitan Area Water Supply: A Plan for Action, February 1993.

Metropolitan Council, Water Resources Management, Part 1. Wastewater Treatment and Handling Policy Plan, December 1988.

Minnesota Pollution Control Agency. Protecting Water Quality in Urban Areas, 1990.

Ramsey Soil and Water Conservation District, Ramsey County Erosion and Sediment Control Handbook, 1989.

Toltz, King, Duvall, Anderson and Associates, Inc., Storm Water Management Study for Ramsey County Ditch No. 14, September 1987.

Twiss, W. Patrick, Ramsey Soil and Water Conservation District, Ramsey County Ground Water Quality Protection Plan: A Guide to Preventing Ground Water Contamination for Local Governments (Draft July 1994).

U.S. Department of Agriculture Soil Conservation Service. Minnesota Hydrology Guide, 1992.

U.S. Department of Agriculture Soil Conservation Service. Soil Survey of Washington and Ramsey Counties, Minnesota, 1977.

U.S. Department of Agriculture Soil Conservation Service. Soil Survey of Anoka County, Minnesota.

Walker, William, Design Calculations for Wet Detention Ponds, prepared for St. Paul Water Utility and Vadnais Lake Area Water Management Organization, October 1987

Water Resource Management Plans for the four Water Management Organizations:

- Ramsey-Washington Metro Watershed District, 1986
- Rice Creek Watershed District, 1994
- Vadnais Lake Area Water Management Organization, 1996
- Valley Branch Watershed District, 1995

OSM & Associates, Westside Storm Sewer Study, June 1976

GLOSSARY

GLOSSARY

Conveyors

A ditch, stream overland flow channel or storm sewer which carries surface runoff water to detention basins, between detention basins or transports runoff between municipal boundaries. A lateral conveyor is a locally controlled system which provides drainage for areas usually absent of detention basins. A lateral conveyor may outlet to a detention basin or outflow conveyor between detention basins. An outflow conveyor forms the outlet for an identified regional detention basin, transports runoff between regional detention basins or carries runoff between municipal boundaries.

Criteria

The measures, principles, models, design levels, or rates which are used to gauge the suitability and accuracy of policies or performance of management strategies.

Critical Storm Event

A rainfall of 1% frequency (100 year), 24 hour duration used in the planning of outflow conveyor and storage facilities.

Design Frequency/Duration Storm

That precipitation event used in the construction of a conveyance or storage facility (synonymous with the critical storm event) and expected to occur once during a period of years and over a given period of hours or days. For example, a 10-year, 24 hour storm would be a precipitation event occurring on the average once every 10 years and over 24 consecutive hours. On an annual basis, there would be a 10% probability of this storm occurring.

Detention Basin

Basins generally used to reduce flooding and enhance water quality. Specific design criteria for each watershed are addressed in the water management organization plans.

Flood Level

The specific water elevation resulting from snowmelt or rainfall runoff into lateral or outflow conveyors and storage facilities in excess of their normal pipe or bank-full design capacity. For basins, the flood level may be higher than the ordinary high water elevation.

Goals

The objectives which the City will strive to attain in complying with the Metropolitan Surface Water Management Act.

Hydraulics

The physical science and technology of the static and dynamic behavior of fluids (water).

Hydrograph

A graphical representation of stage, flow, velocity, or other characteristics of water at a given point as a function of time.

Hydrology

The science that treats the occurrence, circulation, distribution, and properties of the waters of the earth, and their reaction with the environment.

Infiltration

Movement of water through the soil surface into the ground.

Level of Protection

The amount of secondary stormwater runoff capacity required to avoid flood damage and provide for public safety.

Level of Service

The amount of primary stormwater runoff capacity required to avoid unusual hardship or significant interference with normal public activities (transportation, sanitary, or utilities).

Management Strategy

The specific physical, legal or administrative actions recommended or implemented based upon the established criteria will achieve the policies and goals.

Nonpoint Source Pollution

Pollution from any source other than any discernible, confined and discrete conveyances, including, but not limited, to surface runoff from agricultural, silvicultural, mining, construction, subsurface disposal and urban activities.

Normal Level

For basins, that water elevation maintained by a natural or man-made outlet.

Nutrient Assimilation

The process by which plants use minerals and organic nutrients, changing nourishment into living tissue.

One Hundred-Year (100 year) Storm

Rainstorm of varying duration (e.g., 2, 6, or 24 hour) and intensities (inches per hour) expected to recur on the average of once every one hundred years (1% frequency probability).

On-Site Detention

A method of storing storm water runoff at a development site in the form of wet basins. While the primary objective is water quality control, significant reduction in outflow conveyor overloading is accomplished for high intensity, short duration storm events. This method is employed on developments when the regional detention basin approach is not available, usually due to site location of either facility.

Ordinary High Water (OHW) Level

That elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape. Generally, it is the point where the natural vegetation changes from predominately aquatic to terrestrial.

Policies

The plans or course of action to be followed by the City in achieving the goals.

Post-Disturbance Condition

The state of a site following crop or development establishment in which source and/or structural control measures have been implemented resulting in erosion and sedimentation control achieving soil loss limits.

Primary Capacity

The volume and/or rate of storm water runoff defined as that level of service provided by a lateral or outflow conveyor system.

Recharge

The process by which waters on the earth's surface infiltrate the soils to replenish the groundwater.

Regional Detention Basin

A pond or basin designed to detain runoff at full development levels from a specific geographic area or subwatershed. During periods of storm water runoff of various durations, the basin receives additional water, stores it temporarily, and releases it at a controlled rate(s). In addition to reducing flooding problems, the basin serves to reduce to the greatest practical extent, the suspended solids and associated pollutants in the stormwater flow.

Retention Basin

Any area that retains all runoff to that area, that is, an area without an outlet. A retention area is referred to as a landlocked area.

Secondary Capacity

The volume and/or rate of storm water runoff in excess of the primary capacity and defined as that level of protection provided by a lateral or outflow conveyor system.

Sediment

Materials transported by water or air that eventually settles out, being deposited in ponds, wetlands, lakes, reservoirs, etc.

Sedimentation Basin

Similar to a detention basin except that it has the purpose of enhancing water quality by allowing a portion of the solids transported in runoff to settle out.

Source Control

The application of erosion techniques including but not limited to: mulching, seeding, sodding, and greenbelts.

Stormwater Runoff

The flow on the surface of the ground, resulting from precipitation in the form of rainfall or snowmelt.

Structural Control

The application of construction erosion techniques including, but not limited to: sediment basins, silt fences, debris dams, dikes, terracing, rip-rap and diversions.

Time of Concentration

The time required for surface runoff from the most remote part of a drainage basin to reach the basin outlet.

Watershed

A ridge of high land dividing two areas that are drained by different conveyance systems.

Water Table

The upper surface or top of the saturated portion of the soil or bedrock layer; indicates the upper most extent of groundwater.

Wetland Buffer Zone

Upland areas immediately adjacent to wetlands and designated by the city or one of the watershed organizations as special protection zones. VLAWMO defines the zone as that land area measured horizontally between the designated normal elevation of the preservation area and either an elevation of 2 feet above that area or 100 feet outward, whichever is less.

Wetland Treatment

The routing of stormwater through wetland area to allow for the removal of sediment and to maximize nutrient assimilation.

Water Resources

All lakes, ponds, wetlands, outflow conveyors, and County ditches. An inventory of the water resources within the City is found in the appendix of this plan. The management of a particular water resource in the City may be either a watershed, County, or municipal responsibility, or a cooperative effort between them.

Attachment D
Buerkle Business Park Properties

343022430009	JAC DEVELOPMENT LLC 21025 COMMERCE BLVD STE 90 ROGERS MN 55374-4697
343022410009, 343022430010, 343022410011, 343022410013,	SCOTT W ROBERTS TRUSTEE 1873 BUERKLE RD WHITE BEAR LAKE MN 55110-5246
343022420021	NORTHEAST INDUSTRIAL IV LLC C O BOB MURRAY ROBERTS DEVELOP 1873 BUERKLE ROAD WHITE BEAR LAKE MN 55110-5246
343022410007	ROBERTS DEVELOPMENT CO 1873 BUERKLE RD WHITE BEAR LAKE MN 55110-5246
353022330020	PUBLIC STORAGE INC DEPT PT MN 23408 PO BOX 25025 GLENDALE CA 91201-5025
343022440014	MONMOUTH CAPITAL CORPORATION 3499 ROUTE 9 NORTH SUITE 3C FREEHOLD NJ 07728-3277
343022440016	BUERKLE INVESTMENT PROPERTIES 11001 HAMPSHIRE AVE S BLOOMINGTON MN 55438-2424
343022440017	MG WHITE BEAR LAKE WAREHOUSE 2737 FAIRVIEW AVE N ROSEVILLE MN 55113-1307
353022330023	SAMS REAL ESTATE BUSINESS TRUS C/O WAL MART PROPERTY TAX DEPT PO BOX 8050 MS 0555 BENTONVILLE AR 72712-8055
343022430008	WHITE BEAR LLC 1600 BUERKLE RD WHITE BEAR LAKE MN 55110-5217
343022420006	LAWRENCE J GRUNDTNER JANICE M GRUNDTNER 1760 BUERKLE CIRCLE WHITE BEAR LAKE MN 55110-5255
343022420007	1765-1775 BUERKLE ROAD LLC CO PURCELL INC 1387 COPE AVE E MAPLEWOOD MN 55109-2602
343022420013	BBC I LLC C/O PAUL ARENBERG 8025 MARYLAND AVE #9C ST LOUIS MO 63105-3892
343022420017	HALDEN B DEPPERT VERONICA DEPPERT 6100 WOODCHUCK CIR WHITE BEAR LAKE MN 55110-1045
343022420018	PHEASANTS FOREVER INC 1783 BUERKLE CIRCLE WHITE BEAR LAKE MN 55110-5254
343022420020	DAVID M HAYES SUZANNE E HAYES 3074 ARDEN PL ST PAUL MN 55129-5211

Attachment E
Downtown Fringe Properties

143022420009	ANTHONY J SCHULTZ JR MAXINE E SCHULTZ 4796 MILLER AVE WHITE BEAR LAKE MN 55110-2702	143022140062	ALONSO IGNACIO RUBIO ULLOA 2181 8TH ST WHITE BEAR LAKE MN 55110-2710
143022420008	HELEN A MILLER 2090 5TH ST WHITE BEAR LAKE MN 55110-2719	143022140063	ROBERT P HAFDAHL 2692 RIVIERA DR N WHITE BEAR LAKE MN 55110-4919
143022420007	CRAIG W JOHN JENNIFER L JOHN 2100 5TH ST WHITE BEAR LAKE MN 55110-2719	143022140072, 143022140074	JEFFREY BROWN 1914 HIGHWAY 96 E WHITE BEAR LAKE MN 55110-3665
143022420012	MYRNA M HALBACH 4796 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-2941	143022140073	WILLIAM J HUDALLA APRIL ANN HUDALLA 2180 8TH ST WHITE BEAR LAKE MN 55110-2709
143022420010	TIMOTHY R FOLKENSON SANDRA FOLKENSON 2207 NANCY PL ROSEVILLE MN 55113-4450	143022430070	VIVIEN R STEINBACH 2347 GASTON AVE WHITE BEAR LAKE MN 55110-2338
143022420020	MICHAEL A KOPE JANE M KOPE 2091 4TH ST WHITE BEAR LAKE MN 55110-2758	143022420060 143022430068, 143022430069, 143022430071, 143022430073, 143022430074, 143022430079	WILLIAM D LOWELL 5242 BALD EAGLE BLVD E WHITE BEAR LAKE MN 55110-6501
143022420018	J.1 LLC 10430 110TH ST N STILLWATER MN 55082-9412	143022430075	PHILIP R OLSON MICHELE D OLSON 5231 PARKER AVE WHITE BEAR LAKE MN 55110-7802
143022420014	CHARLES W TUBMAN SUSAN E TUBMAN 4780 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-2941	143022430077	ROBERT E BELL ANN M BELL 4654 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-3439
143022420011	WASHINGTON SQUARE APTS 431 7TH ST S UNIT 247D MPLS MN 55415-1821	143022430072	ANTHONY A YOCUM 8330 21ST N PO BOX 582 LAKE ELMO MN 55042-8414
143022420034	VERONICA R ENGQUIST 2100 4TH ST WHITE BEAR LAKE MN 55110-2749	143022420058	ELIZABETH R ANDERSON 5711 CONNON LAKE TRL FARIBAULT MN 55021-8526
143022420035	DIANE LYNNE ABRAMS ROBERT SCOTT LOEKEN 5065 DIVISION AVE WHITE BEAR LAKE MN 55110-2663	143022420057	PATRICIA J KATZ 4720 MURRAY AVE WHITE BEAR LAKE MN 55110-3247
143022420036	JAY A CHMIELESKI 2084 4TH ST WHITE BEAR LAKE MN 55110-2749	143022420067	JESSE ANDERSON 2063 2ND ST WHITE BEAR LAKE MN 55110-3236
143022420038	QWEST CORPORATION ATTN BRAD BLINSMON 1801 CALIFORNIA ST SUITE DENVER CO 80202-1984	143022420065 143022420066	BRENT REIBEL 17751 LOMOND TRL N MARINE ON ST CROIX MN 55047-9536
143022420039	PAUL J FARRELL DOROTHY M FARRELL 2058 4TH ST WHITE BEAR LAKE MN 55110-2759	143022420062	DONNA M FOURNIER 4710 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-3153
143022420037	JOANN M BLUMENTHAL 4748 MILLER AVE WHITE BEAR LAKE MN 55110-3253	143022110043	LEO L HETLAND 4920 WASHINGTON AVE WHITE BEAR LAKE MN 55110-2646

143022110044	TRACY A PATRICK 4925 WASHINGTON AVE WHITE BEAR LAKE MN 55110-2647	143022430082	NEIL J LANGER CAROLE A ARCAND 4620 BALD EAGLE AVE ST PAUL MN 55110-3437
143022430078	ORVAL S FRIELER TRUSTEE LOLA J FRIELER TRUSTEE 4646 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-3439	143022430083	MATTHEW M DAVICH 4606 BALD EAGLE AVENUE WHITE BEAR LAKE MN 55110-3437
143022420017	DAVID ALBERT FURLONG 12521 HOMESTEAD DR WHITE BEAR LAKE MN 55110-6005	143022420048	DAVID W SORENSON SANDRA L ESPE SORENSON 7 BALD EAGLE PT WHITE BEAR LAKE MN 55110-2398
143022420019	LORRAINE M PELTIER 2083 4TH ST WHITE BEAR LAKE MN 55110-2758	143022420050	MICHAEL BERNIER JESSICA HOCHHALTER 14201 GENEVA WAY N HUGO MN 55038-7325
143022420043	JOSEPH T BANKEN EUNICE M BANKEN 4744 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-3138	143022140129,	WBL CHERRYWOOD LP
143022420047	SHANNON M AICHELE NICHOLAS D ZINK 2093 3RD ST WHITE BEAR LAKE MN 55110-3239	143022140141	CO LANEL FINANCIAL GROUP INC 4601 EXCELSIOR BLVD STE 6 MINNEAPOLIS MN 55416-4259
143022420045	QWEST CORPORATION ATTN BRAD BLINSMON 1801 CALIFORNIA ST SUITE DENVER CO 80202-1984	143022420127,	R4 LLC
143022420041,	PAUL L AUGER	143022420013	10430 110TH ST N STILLWATER MN 55082-9412
143022420042,	ANNE E AUGER	143022420021	KARIN BOLINGER 2101 4TH ST WHITE BEAR LAKE MN 55110-2758
143022420126	2532 ORCHARD LN WHITE BEAR LAKE MN 55110-5617	143022420130	CHURCH ST MARYS OF THE LAKE 4741 BALD EAGLE AVE ST PAUL MN 55110-3441
143022420046	BRETT ZOLLINGER 2091 3RD ST WHITE BEAR LAKE MN 55110-3239	143022420133	J R CORNER LLC 10430 110TH ST N STILLWATER MN 55082-9412
143022420044	CORINTHIAN FUNERAL SERV OF MN 835 JOHNSON PKWY ST PAUL MN 55106-2122		
143022420054	TOM TRUHLER KATHLEEN TRUHLER 2068 3RD ST WHITE BEAR LAKE MN 55110-3240		
143022420055	PATRICIA A SAUVE 2058 3RD ST WHITE BEAR LAKE MN 55110-3240		
143022420056	DOLORES B NELSON 2044 3RD ST WHITE BEAR LAKE MN 55110-3240		
143022420059	MID OHIO SECURITIES CORP CUST FBO SCOTT A MUELLER IRA 4720 BIRCH COVE DR WHITE BEAR LAKE MN 55110-3384		
143022430080	GARY ANKERFELT 1651 LAKEVIEW CT NEW BRIGHTON MN 55112-2864		
143022430081	KEVIN OLHEISER 4634 BALD EAGLE AVE WHITE BEAR LAKE MN 55110-3437		

Attachment F
Marina Triangle Properties north of Veteran's Memorial Park

233022210002	PHYLLIS E COHEN AS TRUSTEE 854 ROBERT ST S ST PAUL MN 55107-3258	Low Density Residential
233022210001, 233022120008	HARRY E MILLER RIA SCHOTTMULLER 4552 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Low Density Residential Low Density Residential
233022120007	BRADLEY P LONGUEVILLE JULIE M LONGUEVILLE 4558 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Low Density Residential
233022210003	CURTIS C FLEISCHMAN DORIS M FLEISCHMAN 4542 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Low Density Residential
233022210004	HAGEN VENTURES LLC C/O ROBERT J HAGEN 6278 OTTER LAKE RD WHITE BEAR LAKE MN 55110-1016	Low Density Residential
233022210005	CHRISTOPHER TISMER KERRIE TISMER 4534 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Low Density Residential
233022210006, 233022210007	W THOMAS JEFFERSON JOYCE H JEFFERSON 4530 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Low Density Residential Commercial
233022210008	EDWIN J TAYLOR DIANA S TAYLOR 4524 HIGHWAY 61 WHITE BEAR LAKE MN 55110-3424	Commercial

The City of White Bear Lake

ZONING MAP

12/2/03

