

Chapter 10



Surface Water

- ◆ Introduction
- ◆ Goals and Policies
- ◆ Implementation

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A. Golden Valley Surface Water Management Plan (SWMP)	
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photo by City staff

Section 1: Introduction

GOLDEN VALLEY'S land and water resources include Bassett Creek, large recreational lakes, wetlands, wooded areas, and parks. As a result of the City's water management efforts, many of these areas have been preserved from development and other pressures. Part of the City's ongoing water management efforts involved preparing a Surface Water Management Plan (SWMP) in accordance with Minnesota Statute 103B.235 and Minnesota Rules 8410. Because this stand-alone document impacts land use planning and development within the city, it has been incorporated into Golden Valley's Comprehensive Plan through in-text references and as an appendix. This chapter of the City's Comprehensive Plan summarizes the SWMP, including water resource management-related issues, goals, policies, and implementation activities (see Appendix A for the complete SWMP).

Surface Water Management Plan (SWMP)

According to state statute, water management programs are meant to:

Table 10.1: Summary of Golden Valley Stormwater Issues

Category	Issue
NPDES Stormwater Pollution Prevention Program (SWPPP)	<ul style="list-style-type: none"> ♦ Public education and outreach ♦ Public participation ♦ Illicit discharge detection and elimination ♦ Construction site runoff control ♦ Post construction storm water management ♦ Pollution prevention/housekeeping
Impaired Waters	<ul style="list-style-type: none"> ♦ Bassett Creek ♦ Sweeney Lake ♦ Wirth Lake ♦ Medicine Lake ♦ Minnehaha Creek ♦ Lake Hiawatha ♦ Lake Pepin ♦ Other future listed waters
Watershed Organizations	<p>Minnehaha Creek Watershed District</p> <ul style="list-style-type: none"> ♦ Phosphorus loading reduction requirement ♦ Wetland protection <p>Bassett Creek Watershed Management Commission</p> <ul style="list-style-type: none"> ♦ Flood control ♦ Lake water quality ♦ Stream channel stabilization ♦ Wetland protection ♦ Erosion control ♦ Groundwater protection ♦ Water resources education
Metropolitan Council	<ul style="list-style-type: none"> ♦ Reduction of storm water volume ♦ Increasing storm water quality ♦ Maximizing infiltration ♦ Thermal pollution ♦ Wetland management ♦ Nondegradation goals ♦ Water quality goals
City Issues	<ul style="list-style-type: none"> ♦ Update of city-wide hydrologic modeling ♦ Redevelopment ♦ Interagency cooperation ♦ Storm water system maintenance programming ♦ Development of storm water ordinance ♦ Storm water pond upgrades and sediment removal ♦ Private storm water facility maintenance ♦ Bassett Creek stream bank erosion ♦ Public ditch maintenance/disposition ♦ Flood protection of homes/land acquisition in flood prone areas ♦ Public education ♦ Decola Ponds flooding ♦ Inter-community drainage ♦ I-394 Corridor Study

- ♦ protect, preserve, and use natural surface and groundwater storage and retention systems
- ♦ minimize public capital expenditures needed to correct flooding and water quality problems
- ♦ identify and plan for means to effectively protect and improve surface and groundwater quality
- ♦ establish more uniform local policies and official controls for surface and groundwater management
- ♦ prevent erosion of soil into surface water systems
- ♦ promote groundwater recharge
- ♦ protect and enhance fish and wildlife habitat and water recreational facilities
- ♦ secure the other benefits associated with proper management of surface and ground water

In short, the SWMP provides a complete and intensive guide and reference for managing water resources within Golden Valley. It will assist the City with policy decisions, water resource management, implementation priorities, regulatory program references, and capital improvement budgeting for water resource issues. Table 10.1 summarizes Golden Valley’s storm water issues.

The current SWMP replaces the 1999 “City of Golden Valley Surface Water Management Plan.” It meets the requirements of Minnesota Statute 103B.235, Minnesota Rules Chapter 8410, and the watershed organizations with jurisdiction in the city, including the Bassett Creek Watershed Management Commission (BCWMC) and Minnehaha Creek Watershed District (MCWD).

Regulatory History and Background

Besides the purposes and requirements outlined in state statutes and rules, Golden Valley's SWMP reflects numerous other water resource-related state and federal mandates* the City must meet. As state and federal laws have changed over the years, the City's role in water resource management has also changed.

1940s

In 1945, the Minnesota Legislature authorized a new state Water Pollution Control Commission because too many communities were dumping raw sewage into lakes and rivers. One of the Commission's jobs was to encourage communities to build wastewater treatment plants to stop the flow of raw sewage into rivers and lakes.

Three years later, the US Congress enacted the Federal Water Pollution Control Act (FWPCA), in response to the threat that polluted water posed to the public health and welfare.

1960s and 1970s

In 1967, the Minnesota Legislature created the Minnesota Pollution Control Agency (MPCA) in response to oil spills and other major environmental incidents. Its mission was to protect the air, land, and waters of the state.

Five years later, in 1972, the US Congress amended the FWPCA to address the growing public awareness and concern for controlling water pollution. This act became known as the Clean Water Act (CWA).

Amendments to the CWA in 1977 addressed "point source" facilities, such

as municipal sewage plants and industrial facilities. The new program for regulation of point source pollution was called National Pollutant Discharge Elimination System (NPDES). As a "delegated permitting authority," the MPCA issues combined State Disposal System (SDS) and NPDES storm water permits.

1980s and 1990s

In 1987, the Minnesota Legislature enacted laws to control polluted runoff, broadening attention from "point" source to "nonpoint" source pollution. Nonpoint source is the movement of pollutants from land to water, typically in storm water or snowmelt runoff from streets, lawns, construction sites, farms, etc. Also that year, state regulatory authority for this program was delegated from the US Environmental Protection Agency (EPA) to the MPCA. A 1987 amendment to the federal Clean Water Act required implementation of a two-phase comprehensive national program to address storm water runoff.

In 1990, the EPA established the Phase I Stormwater Program. These federal regulations required that two general categories of storm water discharges be covered under a NPDES storm water permit. One involved 11 regulated categories of industrial activity, including construction activity that disturbs five or more acres of land. The other involved municipalities with separate storm sewer systems (MS4s) serving populations of 100,000 or more (including Minneapolis and St Paul).

In 1994 and 1995, the MPCA established the Phase I Stormwater Program at the state level. Under Phase



Storm water pond at Brookview Park in 2000, before water quality initiatives

photo by Janice Lantinen, 2000 Views of the Valley

I, Minneapolis and St Paul obtained individual permits and designed and implemented storm water programs.

In 1999, the Phase II federal regulations were established, which expanded the scope of the NPDES Stormwater Program to include smaller MS4s in urbanized areas, construction activities that disturb between one and five acres of land, and smaller municipally owned industrial activities. The MPCA then promulgated rules related to the Phase II federal regulations to fulfill federal NPDES delegation responsibilities. The rules establish the NPDES storm water permit requirements for regulated MS4s, construction, and industrial activities.

2000 To Present

Phase II of the NPDES program began in 2003. Phase II is a broader program that includes smaller construction sites, municipally owned or operated industrial activity, and many more MS4s. Parties regulated under the

*References: "Minnesota Environment," Minnesota Pollution Control Agency (MPCA), Volume 7, Number 1—Summer 2007, the MPCA's web site www.pca.state.mn.us, and the City of Plymouth's July/August 2007 edition of "Environmental Extra"



Photo by City Staff

Pond at Brookview Park after the City planted a native buffer zone to improve water quality

Phase II program must develop storm water pollution prevention plans to address their storm water discharges. They also must determine the appropriate pollution prevention practices, or best management practices (BMPs), to minimize pollution for their specific sites. Each of the three permit types (construction, industrial, MS4) has distinct requirements, and some regulated parties may require more than one permit.

In 2003, the MPCA issued a MS4 General Permit for municipalities with populations over 10,000, including Golden Valley. The permit requires cities to comply with six minimum control measures, which include public education, public outreach, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management, and pollution prevention/good housekeeping measures.

The Phase II federal regulations mandated that approximately 200 MS4s in Minnesota required NPDES permit coverage; these include municipalities

located within the boundaries of an urbanized area.

In 2006, the MPCA issued a new MS4 General Permit. The new permit identifies a group of 30 selected MS4s that must complete a Loading Assessment and a Nondegradation Report as part of their MS4 Storm Water Permits. These MS4s must assess the volume of total suspended solids (soil, sand, and silt), phosphorus, and water in storm water runoff and establish a non-degradation plan to keep pollutant loadings at 1988 levels. The City of Golden Valley is not part of this group of 30, although many neighboring cities are.

The Clean Water Act (CWA) also requires states to adopt water quality standards to protect the nation's waters. Water quality standards designate beneficial uses for each water body and establish criteria that must be met within the water body to maintain the water quality necessary to support its designated use(s). Section 303(d) of the CWA requires each state to identify and establish priority rankings for waters that do not meet water

quality standards. The list of impaired waters, sometimes called the 303(d) list, is updated by the states every two years.

In 2002, the MPCA began identifying surface water resources that are impaired for their identified uses (swimming, aquatic habitat, etc). As required by the Clean Water Act, if a water body is included on the impaired waters list, it triggers an analysis called a total maximum daily load (TMDL) study. The TMDL analysis determines the impaired water body's capacity to assimilate specific pollutants and still meet water quality standards. A TMDL also develops an allocation scheme amongst the various contributors—point sources, nonpoint sources, and natural background—as well as a margin of safety.

These regulations and requirements have led the City of Golden Valley and other similar cities to follow specific requirements for preparation of:

- ♦ the MS4 General Storm Water Permit Application and Storm Water Pollution Prevention Program

- ♦ the Surface Water Management Plan (SWMP)
- ♦ future updates to the NPDES-MS4 permit and SWMP to address the requirements of future TMDL analyses.

How The SWMP Is Organized

Golden Valley's SWMP sets the course for the City's management of its water resources and storm water. It also provides data and other background information, outlines the applicable regulations, assesses city-wide and specific issues, sets goals and policies for the city and its resources, and lists implementation tasks to achieve the goals. The SWMP has six major sections: Executive Summary, Goals and Policies, Land and Water Resource Inventory, Assessment of Problems and Issues, Implementation Program, and References.

Executive Summary

Section 1 provides information about Golden Valley's location and history and summarizes the highlights of the SWMP, including its purpose and scope, goals, policies, and implementation tasks.

Goals and Policies

Section 2 presents the City's surface water-related goals and policies, the regulatory framework, and other agencies' responsibilities. These goals and policies are also outlined starting on page 10-7.

Land and Water Resource Inventory

The first part of Section 3 provides technical information as well as maps and tables that describe the surface and subsurface conditions of the city, including land use, public utilities, climate and precipitation, topography, soils, geology, groundwater, Minnesota Department of Natural Resources (MnDNR) public waters, wetlands, surface water resource monitoring information, water body classification, floodplain information, unique features and scenic areas, pollutant sources, and major basins and overall drainage patterns. The second part of Section 3 presents an inventory of the major drainage basins in the city, including information about watersheds, watershed area, land use, and other notable information.

Assessment of Problems and Issues

Section 4 assesses city-wide and specific issues and problems under broad topic areas such as:

- ♦ water quality, or general storm water runoff quality, including nonpoint source runoff and phosphorus loadings, impaired waters and TMDL issues, and many specific water quality issues
- ♦ flood control, including general issues and specific flooding and rate issues
- ♦ erosion and sediment control, including the general causes and impacts of erosion and sedimentation, specific examples of erosion

and sedimentation problems in the city, and the city's implementation and enforcement of its ordinances and approval processes

- ♦ adequacy of existing programs, including the city's ordinances and official controls, the BCWMC and MCWD classification systems, the city's education and public involvement program, maintenance of the city's storm water system, groundwater protection, and the city's capital improvement and implementation programs

Implementation Program

Section 5 of the City's SWMP describes significant components of the implementation program, including Golden Valley's NPDES Phase II MS4 permit, operation and maintenance of its storm water system, education and public involvement, funding, ordinance implementation and official controls, implementation priorities, and SWMP update and amendment procedures. The implementation program is also summarized starting on page 10-17.

References

This section lists the documents and other references used in preparation of the SWMP. 



photo by Janice Lantinen, 2007 Views of the Valley

Section 2: Goals and Policies

THE City of Golden Valley is proactive in the area of water resource management, reflecting the value the community places on natural resources. Its goals and policies are designed to continue to improve the quality and effectiveness of water resource planning and management in Golden Valley. The goals and policies are outlined according to 10 categories: Water Quality of Lakes and Streams; Water Quality of Storm Water Runoff; Illicit Discharge Detection and Elimination; Streams; Flood Control; Erosion and Sediment Control; Wetlands and Natural Resources; Recreation, Habitat, and Shoreland Management; Groundwater; and Education and Public Involvement.

Water Quality of Lakes and Streams

Goals

- A. Manage Golden Valley's water resources with input from the public so the beneficial uses of wetlands, lakes, and streams remain available to the community. Such uses may include aesthetic appreciation, wildlife observation, swimming, boating, or others.

- B. Improve the quality of Bassett Creek and city lakes to enhance aesthetic viewing and recreational opportunities in Golden Valley.
- C. Protect and enhance fish and wildlife habitat and maintain shoreland integrity.
- D. Meet current and future phosphorous and other pollutant load reductions (eg, TMDLs) required for the City of Golden Valley by the state or watershed management organizations.
- E. Manage Golden Valley lakes such that the more stringent of the BCWMC goals or the MPCA impaired waters criteria (listed in Table 10.2) are met or exceeded.

Policies

- 1. Develop objectives and guidelines to evaluate and protect the natural aesthetics and attractiveness of lakes, ponds, and adjacent uplands.
- 2. Manage lakes and streams to meet or exceed BCWMC water quality goals and to exceed MPCA impaired waters criteria.
- 3. Work with the BCWMC to implement the improvement options listed in its capital improvement program based on feasibility, prioritization, and available funding.
- 4. Give higher priority to water quality improvement projects, including nonstructural measures and education, which are the most effective at achieving water quality goals.



photo by City staff

Sweeney Lake is on the MPCA's 303(d) list of current or future impaired waters.

- 5. Cooperate with the BCWMC, MCWD, MPCA, and other stakeholders in preparing and implementing TMDL studies for water bodies in the city, or water bodies that receive water directly from the city, that are on the MPCA's 303(d) list of current or future impaired waters (currently Sweeney Lake, Wirth Lake, Bassett Creek and Medicine Lake).
- 6. Continue to identify opportunities to maintain or improve the excellent water quality in Twin Lake.

Table 10.2: BCWMC Goals and MPCA Impaired Waters Criteria

Water Body	BCWMC ¹ Quality Category	MPCA ² Class	Total Phosphorus (ug/L)		Chl-a (ug/L)		Secchi Depth (m)	
			BCWMC Goal	MPCA Criteria ³	BCWMC Goal	MPCA Criteria ³	BCWMC Goal	MPCA Criteria ³
Medicine Lake ⁴	Level I	Deep	38	<40	10	<14	2.2	>1.4
Wirth Lake	Level I	Deep	30	<40	10	<14	2.2	>1.4
Twin Lake	Level I	Deep	30	<40	10	<14	2.2	>1.4
Sweeney Lake	Level I	Deep	30	<40	10	<14	2.2	>1.4
Westwood Lake	Level II	Shallow	45	<60	20	<20	1.4	>1.0
Bassett Creek	Level III	Stream	75	N/A	40	N/A	0.9	N/A
W. Ring Pond	Level III	N/A	75	N/A	40	N/A	0.9	N/A
E. Ring Pond	Level III	N/A	75	N/A	40	N/A	0.9	N/A
Courtawn Pond	Level III	N/A	75	N/A	40	N/A	0.9	N/A
South Rice Pond	Level III	N/A	75	N/A	40	N/A	0.9	N/A

1 – Bassett Creek Watershed Management Commission

2 - Minnesota Pollution Control Agency

3 – From the Minnesota Proposed Rules Chapter 7050 (MPCA, July 16, 2007)

4 - Medicine Lake is located outside of Golden Valley, but a portion of the city is tributary to it.

7. Quantify and implement BMPs that will reduce phosphorus loading by two pounds per year to receiving water within the MCWD.
8. Develop a program to deal with tracking, inspecting, and monitoring private storm water facilities.
9. Continue to work with the League of Minnesota Cities Stormwater Coalition toward identifying and addressing issues.
10. Continue to support water quality monitoring efforts in Golden Valley undertaken by other agencies and organizations.

Water Quality of Storm Water Runoff

Goals

- A. Improve the quality of storm water runoff by reducing non-point source pollution, including nutrients and sediment carried as storm water runoff.
- B. Maintain the nutrient and sediment removal efficiency of several key storm water ponds throughout the city, thereby improving the water quality of the receiving waters.
- C. Meet or exceed all applicable water-related regulations established by the Federal Government, the State of Minnesota, Hennepin County, the BCWMC, the MCWD, and the Metropolitan Council.

Policies

1. Implement all aspects of the Golden Valley NPDES Phase II MS4 permit SWPPP.
2. Require all regulated storm water from new development projects to be treated to the BCWMC's Level I standards. For projects that fall within City-designated redevelopment areas and that result in increased impervious surface, the City will require all regulated storm water to be treated to meet the BCWMC's non-degradation standard (no increase in phosphorus load). These policies are detailed in the [BCWMC Watershed Management Plan, Section 4.2.2.4, "Policies Relating to Administration of BCWMC Water Quality Management Standards, Policy A"](#) (also available at City Hall). Exemptions to the nondegradation policy (as approved by the BCWMC at its January 18, 2007 meeting) include:
 - ♦ single-family homesites

Table 10.3: Impervious Area Exemptions

Project Site Size (Acres)	Exemption Applies If Added Impervious Area is No More Than:
0.5 - 1.0	1,000 square feet
1.0 - 5.0	2,000 square feet
Over 5.0	10,000 square feet

- ♦ project sites smaller than 0.5 acre
 - ♦ third exemption that varies by project size (see Table 10.3)
3. Continue forwarding proposed projects to the BCWMC for review. The BCWMC's "Requirements for Improvements and Development Proposals" (BCWMC, November 1998, as revised; also available at City Hall) outlines types of projects that must be submitted to the BCWMC for review as well as the BCWMC's review procedure, submittal requirements, guidelines, design criteria, etc.
 4. Require developers to meet all BCWMC requirements, where applicable, and to consider/evaluate the use of BMPs in the "Requirements for Improvements and Development Proposals" (see number 3 above).
 5. Require developers to meet all MCWD requirements, where applicable.
 6. As part of its development review and approval process, the City will continue to ensure that storm water discharges will not adversely affect endangered species, threatened species, historic places, and archaeological sites.
 7. Continue sediment removal program for treatment and key ponding locations.
 8. Continue program for removing sediment from the existing storm sewer system.
 9. Continue to explore implementation of emerging technologies, BMPs, and methods as research develops.
 10. Conduct a city-wide review of opportunities for BMP implementation, and develop a program for construction of BMPs as funds become available.
 11. Continue to require maintenance agreements for private water quality facilities and develop procedures and resources to enforce these agreements.
 12. Coordinate with other cities and agencies to encourage ongoing maintenance of water quality facilities.
 13. Continue implementing the City's pond bank stabilization program.



photos by City staff

Bassett Creek's Sweeney Branch before (left) and after a 2008 stream bank stabilization project

14. Construct regional detention/nutrient removal basins as opportunities arise.
15. Increase public awareness of individual property owners' impacts on water quality.
16. Develop and implement a storm water management ordinance.
17. Encourage using vegetation to assimilate nutrients for storm water runoff.
18. Install sediment catching/environmental manholes where appropriate and feasible.
19. Implement Guiding Principle 8 of the I-394 Corridor Study, which encourages the application of green building and infrastructure techniques such as Low Impact Development practices, including green roofs, rain gardens, bioswales, and pervious pavement, throughout the city.
20. Continue a targeted street sweeping and catch basin cleaning program.
21. Request MnDOT involvement in pond sediment removal within MnDOT right-of-way.
22. Continue to participate in and support the League of Minnesota Cities Stormwater Coalition.

Goal

- A. Improve the pollutant removal effectiveness of storm water ponds within the city.

Policies

1. Continue implementing the City's storm water pond functional improvement program, including sediment removal and BMP identification, to enhance the pollutant removal effectiveness of existing storm water ponds.
2. Fund this program systematically to complete the individual projects.

Illicit Discharge Detection and Elimination

Goal

- A. Eliminate illicit discharge to the city's storm sewers and receiving waters.

Policies

1. Continue to update the City's storm sewer system map that shows the location of significant storm sewer system components and receiving water bodies. The storm sewer map will help facilitate management of illicit discharge detection and elimination.
2. Continue to update the City's creek inventory, which identifies outfalls, culverts, significant erosion sites, and potential obstructions in the three branches of Bassett Creek within city limits.

3. Develop an ordinance or other regulatory mechanism prohibiting illicit discharges to the City's storm sewer system and implement appropriate enforcement procedures and actions.
4. Develop a program to detect and address illicit connections to the City's storm sewer system and receiving waters.
5. Submit an annual storm water system inspection report and retain all required records according to the terms of the NPDES MS4 permit, including dates of inspection and responses to the inspections, the date of completion of repairs, and major additional protection measures.
6. Develop a program to prohibit illegal dumping and the disposal of waste in prohibited areas, such as backyards, stream banks, or other areas.
7. Develop a plan to inform public employees, businesses, and the general public of water quality hazards associated with illicit discharges and improper disposal of waste.

Streams

Goals

- A. Maintain or enhance the natural beauty and wildlife habitat value of Bassett Creek and its tributaries through Golden Valley.
- B. Implement stream restoration measures whenever necessary to maintain health, safety, and welfare.
- C. Minimize the volume of storm water runoff entering Bassett Creek.
- D. Increase the groundwater base flow of Bassett Creek.
- E. Reduce the frequency of bank full runoff events in Bassett Creek.
- F. Maintain the nutrient and sediment removal efficiency of key storm water ponds throughout the city.

Policies

1. Support opportunities to enhance recreational opportunities on Bassett Creek.
2. Reduce areas of impervious surface through the consideration of changes to City ordinances and policies and encourage the use of innovative materials to reduce impervious surface and enhance infiltration.

3. Encourage restoration of stream and stream bank areas where the natural beauty of the creek has been compromised.
4. Implement a stream bank stabilization program using bioengineering and natural products, whenever possible.
5. Work to support legislation that eliminates the currently required cumbersome public ditch process to maintain and abandon public ditches.

Flood Control

Goals

- A. Reduce flooding along Bassett Creek and its tributaries.
- B. Protect the public from flooding through measures that ensure public safety and prevent inundation of occupied structures.
- C. Regulate storm water runoff discharges and volumes to minimize flood problems, flood damages, and the future costs of storm water management systems.

Policies

1. Continue to implement the City's Flood Plain Management Zoning Regulations (City Code Section 11.60) and keep it current with BCWMC and MCWD Policies.



photo by City staff

Golden Valley's surface water management policies provide storm water storage to protect the public from flooding.

2. Continue the City's maintenance and sediment removal program to provide clean sewers with maximum capacity for storm water conveyance.
3. Permanently protect storm water ponds and drainage systems by obtaining property land dedication and easements with new development.
4. Design the City's municipal storm water system to convey no less than the 10% probability/10-year rainfall event.
5. Maintain and inspect emergency storm water pond overflow routes and identify critical maintenance areas.
6. Continue to update the City's storm sewer map.
7. Implement the BCWMC's development policies.
8. Continue forwarding proposed projects to the BCWMC for review. The types of projects that must be submitted to the BCWMC for review, the BCWMC's review procedure, submittal requirements, guidelines, design criteria, etc are provided in the BCWMC's document "Requirements for Improvements and Development

Proposals" (BCWMC, November 1998, as revised; also available at City Hall).

9. Require project proposers to apply BMPs to reduce the volume of storm water runoff to the maximum practical extent. Examples of storm water runoff volume reduction methods include:
 - ♦ minimizing the amount of planned impervious surface as areas develop
 - ♦ minimizing the amount of impervious surface during redevelopment
 - ♦ promoting localized infiltration
10. Require that post-development peak discharge rates shall not exceed existing discharge rates for the two-year (50% probability), 10-year (10% probability), and 100-year (1% probability) critical duration storm events. The City will also require rate control in conformance with the BCWMC flood control project system design.
11. Enforce all aspects of the City's Flood Plain Management Zoning Overlay District Ordinance (City Code Section 11.60).
12. Allow only those land uses in the BCWMC-established floodplain that will not be damaged by floodwaters and will not increase flooding. Allowable types of land use consistent with the floodplain include:
 - ♦ recreation or open space areas such as golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife habitat, trails, nature preserves, and fishing areas
 - ♦ parking areas and heliports
 - ♦ public utility lines
 - ♦ agriculture and other open spaces
 - ♦ residential lawns, gardens, parking areas, and play areas
 - ♦ signs and signals delineating or accessory to parks, trails and other permitted uses as described in City Code Section 11.60
13. Prohibit permanent bridges, docks, storage piles, fences, and other obstructions in the floodplain that would collect debris or restrict flood flows. Property owners who made any artificial obstructions to the beds, banks, waters, or channels of Bassett Creek or the floodplain after February 3, 1981 and without first obtaining a special permit or variance must remove them within 10



photo by Janice Lantinen, 2008 Views of the Valley

Golden Valley's water resource management practices help maintain or enhance the natural beauty and wildlife habitat value of Bassett Creeks and its tributaries.

days after notification from the Flood Plain Administrator. If the property owner fails or refuses to remove the obstruction within said time (or cannot be found or determined), the City may remove the obstruction. Removal costs shall be paid by the owner on demand, or they may be assessed against the land and collected as prescribed by law for levying and collecting special assessments for municipal improvements.

14. Prohibit filling within the BCWMC-established floodplain. Proposals to fill within the BCWMC-established floodplain must obtain BCWMC approval and provide compensating storage and/or channel modification so that the flood level shall not be increased at any point along the trunk system due to the fill.
15. Prohibit expansion of existing non-conforming land uses within the floodplain unless they are fully flood-proofed in accordance with existing codes and regulations.
16. As opportunities arise, consider dedicating funds to the purchase of homes that have less than one foot of freeboard from their lowest opening to the established 100-year flood level, or that have an access that has a portion below the 100 year flood level.
17. Require that lowest floors of new permanent structures be at least two feet above the established 100-year floodplain elevation.
18. It is the City's overall goal to prevent construction of new streets in the floodplain and to bring existing streets

out of the floodplain, if possible. The City will discourage development where the sole access to the site is through the established 100-year floodplain. If such access is unavoidable, the City will require that any new roads into the site crossing the floodplain be above the regulatory floodplain elevation. The City will not build new streets within the established 100-year floodplain, nor will the City allow new streets to be built within the established 100-year floodplain unless the new street is above the regulatory floodplain elevation. Recognizing that existing streets within the established 100-year floodplain cannot be removed from the floodplain, the City will maintain and/or reconstruct such streets, and the City will allow such streets to be maintained and/or reconstructed.

Erosion and Sediment Control

Goals

- A. Prevent erosion and sedimentation to the greatest extent possible to protect the city's water resources from increased sediment loading and associated water quality problems.
- B. Implement soil protection and sedimentation controls whenever necessary to maintain health, safety, and welfare.



photo by City staff

Golden Valley's Grading, Drainage, and Erosion Control Ordinance helps protect water resources.

- C. Reduce erosion from small construction and landscaping sites.

Policies

1. Encourage land use planning and development that minimizes sediment yield, through compliance with established city, BCWMC and MCWD policies.
2. Review projects and developments for compliance with the city, MPCA, BCWMC, and MCWD erosion and sediment control standards.
3. Require development to comply with and follow appropriate best management practices for erosion and sediment control as specified in the Minnesota Stormwater Manual (2005), as may be amended.
4. Continue to require permits and the preparation of erosion control plans for construction projects according to Golden Valley City Code Section 4.31. Erosion control plans shall show proposed methods of retaining waterborne sediments on site during the construction period and shall specify methods and schedules for restoring, covering, or re-vegetating the site after construction.
5. Review the City's existing Grading, Drainage, and Erosion Control Ordinance for content and examine the effectiveness of enforcement efforts.
6. Implement a program to control and recycle construction site debris storage and waste disposal. The City will analyze how to inspect and enforce proper construction site waste management.
7. Continue to perform regular erosion and sediment control inspections with coordination/cooperation with the BCWMC as appropriate.
8. Maintain a process for handling public complaints regarding non-compliance issues.
9. Maintain a record-keeping process to store information regarding site inspection.
10. Continue the City's existing inspection programs and maintain an inspection log, elements to consider, follow-up procedures, and schedule guidelines for staff.

Goal

- A. Remove sediment from catch basins before the sediment travels to water resources within the city.

Policies

1. Continue to clean sump and problem catch basins in the spring and fall, and more frequently where needed.
2. Continue to perform targeted street sweeping.
3. Continue to explore implementation of emerging technologies, BMPs, and methods as research develops.

Goal

- A. Improve erosion and sediment control through aesthetically pleasing and environmentally friendly means.

Policies

1. Continue to develop buffers of native and naturally existing shoreline vegetation on city property.
2. Encourage and support the development of buffers of native and naturally existing shoreline vegetation on non-city property.
3. Continue to implement the City's tree preservation ordinance (City Code Section 4.3.2).
4. Consider the development of aesthetically pleasing new ponds in locations where feasible and appropriate.

Wetlands and Natural Resources

Goals

- A. Protect and restore wetlands to improve or maintain their functions and values in accordance with the Minnesota Wetland Conservation Act.
- B. Protect and restore natural areas.

Policies

1. Continue the City's role as the local governmental unit (LGU) for the Minnesota Wetland Conservation Act (WCA).
2. Continue to require wetland delineation with development proposals, as needed, and maximize buffer zones around wetlands where possible.
3. Continue to develop wetland banking credits within its wetland bank as opportunities arise.
4. Use all developed wetland credits for City of Golden Valley projects.
5. Continue to coordinate with other agencies that are also involved in the protection of wetlands.



photo by City staff

General Mills Nature Preserve

6. Continue to use the City's Natural Resource Inventory as a planning resource and update it on a regular basis.

Recreation, Habitat, and Shoreland Management

Goal

- A. Improve the quality of Bassett Creek and city lakes to enhance the aesthetics and recreation opportunities in Golden Valley.

Policies

1. Support opportunities to enhance recreational opportunities on Bassett Creek.
2. Develop objectives and guidelines to evaluate and protect the natural aesthetics and attractiveness of lakes, ponds and adjacent uplands.
3. Maintain control and responsibility for shoreland regulation by continuing to implement the City's shoreland ordinance (City Zoning Code Section 11.65).
4. Promote and encourage protection of non-disturbed shoreland areas and restoration of disturbed shorelines and stream banks to their natural state where feasible.
5. Encourage preservation of stream bank and lakeshore vegetation during and after construction projects.

Groundwater

Goal

- A. Protect the quantity and quality of groundwater resources.

Policies

1. Cooperate with St Louis Park, Robbinsdale, Plymouth, and Minnetonka regarding wellhead protection activities and these adjacent cities' wellhead protection programs.
2. Coordinate with the Minnesota Department of Health to determine if the City has areas within a source water protection area for surface water intakes and assist in addressing impacts if needed.
3. Encourage groundwater recharge and protect recharge areas from potential sources of contamination. The City will promote groundwater recharge by encouraging infiltration of storm water runoff. The City will use available information and guidance (eg, Minnesota Department of Health guidance) to evaluate the potential impacts of storm water infiltration BMPs on groundwater.
4. Cooperate with efforts to educate the general public concerning the importance of and the use of BMPs to prevent contamination of groundwater supplies.

Funding

Goal

- A. Provide sufficient funding to implement measures and policies contained in this plan.

Policies

1. Continue to use the City's Storm Water Utility Fee program to fund storm water-related activities. The Storm Water Utility Fee is the primary funding source for all storm water improvements related to the city's Surface Water Management Plan, Pavement Management Program and NPDES Phase II MS4 requirements.
2. Continue to seek funding for storm water related programs and projects from other sources including, but not limited to, the Bassett Creek Watershed Management Commission, the Minnesota Department of Natural Resources, the Minnesota Department of Transportation, and the Minnesota Board of Water and Soil Resources.
3. Consider dedicating funds to purchase homes, as they become available, that have one foot or less freeboard to their lowest opening above the 100-year flood level, or that have access that has a portion below the 100-year flood level, or other properties below the 100-year mapped or unmapped floodplain.

Education and Public Involvement

Goal

- A. Involve and educate Golden Valley residents in water resource related issues.

Policies

1. Maintain a public education program to distribute educational materials to the community or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in storm water runoff.
2. Maintain the Golden Valley Environmental Commission to educate residents, raise awareness about environmental responsibility, and create a sense of collaboration in the spirit of making and keeping Golden Valley an environmentally healthy city.



photo by City staff

Volunteers stencil messages near storm drains that lead to local waterways to increase awareness of protecting water resources.

3. Continue to conduct an annual public meeting (with notice) to discuss the City's Storm Water Pollution Prevention Plan (SWPPP) and inform the public about storm water impacts. City staff will analyze comments and written materials gathered at the public meeting and adjust the SWPPP where appropriate.
4. Continue to provide support, where appropriate, for the development and distribution of educational materials and assist other agencies' efforts.
5. Continue to use volunteer groups to the greatest extent possible for public service projects such as catch basin stenciling, debris clean-up, stream bank erosion protection, buckthorn removal, and vegetative buffer strips.
6. Continue to inform public employees, businesses, and the general public of the water quality hazards associated with illicit discharges and improper disposal of waste.
7. Continue using demonstration projects to educate the public on issues such as stream bank stabilization and aesthetically pleasing storm water ponds.
8. Continue to work with other agencies to develop an education program for schools in the city.
9. Continue to provide educational and informational materials regarding storm water issues on the City web site (www.ci.golden-valley.mn.us) and cable TV channel.
10. Continue to include storm water-related information in packets to new residents.
11. Continue to dedicate at least one page to water or environmental issues in Golden Valley's bi-monthly City newsletter to residents.
12. Establish programs to monitor storm drains for illicit discharge and stencil markings on storm inlets with assistance from public interest groups. 🌊



photo by Michael Linehan, 2005 Views of the Valley

Section 3: Implementation

IMPLEMENTING the Golden Valley's SWMP involves several significant components, including the City's NPDES Phase II MS4 permit, specific tasks required by the MCWD, operation and maintenance of the City's storm water system, capital improvement projects, studies, education and public involvement, funding, ordinance implementation and official controls, priorities, and SWMP update and amendment procedures.

Golden Valley's current ordinances, official controls, and future needs are described in Section 4.6.1 of the SWMP (see Appendix A). Some of the City's ordinances and official controls are tied with the implementation of its NPDES Phase II MS4 permit. The City's ordinance implementation is incorporated into Part C of Tables 10.4 and 10.5 below.

To improve the City's efficacy regarding storm water management, the City will develop a new storm water management ordinance. The new ordinance will deal with design requirements relating to the water quality aspects of ponding and other treatment devices and methods, along with water quantity requirements such as rate and volume controls and obstructions in the floodplain and floodways (docks, bridges, etc). It will codify the storm water design requirements of the BCWMC, Met Council, the City's NPDES permit, and City policies. It will also address illicit discharges and new connections, as well as outline the process and roles of other agencies.

The implementation program is summarized in Tables 10.4 and 10.5 and at the end of Section 5 of the SWMP (see Appendix A).

Each table is divided into five parts:

- ♦ Part A—Capital Improvement Projects
- ♦ Part B—Studies

- ♦ Part C— Official Controls
- ♦ Part D— Operation and Maintenance Programs
- ♦ Part E—Public Education, Outreach, Participation, and Involvement

Table 10.4 presents the details of the implementation program, including a

project description, cost estimate, potential funding sources, and proposed years of implementation. Table 10.5 summarizes the implementation program year-by-year, listing the project number and estimated costs for every year from 2008-2017. 

Table 10.4: City of Golden Valley Water Resources Implementation Program

Project Number	Project Description	Cost Estimate (\$)*	Potential Funding Sources	Contract or City Staff	Proposed Year(s) of Implementation
Part A. Capital Improvement Projects					
SS-1	Residential Storm Sewer Improvements	5,500,000	Storm Sewer Utility Fund	Contract	2009-2013
SS-10	Lakeview Park Wetland Restoration	150,000	Storm Sewer Utility Fund	Contract	2012
SS-11	Storm Water Improvements and Wetland Restoration (with Pavement Management Program)	280,000	Storm Sewer Utility Fund	Contract	2012
SS-13	Western Avenue Marsh Restoration	55,000	Storm Sewer Utility Fund	Contract	2012
SS-16	Purchase Vacuum Street Sweeper	230,000	Storm Sewer Utility Fund	Contract	2012
SS-18	Construct Storm Water Ponds	500,000	Storm Sewer Utility Fund	Contract	2009
SS-20	Stream Bank Stabilization	1,595,000	Storm Sewer Utility Fund (95,000) BCWMC (1,500,000)	Contract	2008-2012
SS-22	Purchase Pickup Truck	26,000	Storm Sewer Utility Fund	Contract	2012
SS-23	Storm Water Pond Dredging	350,000	Storm Sewer Utility Fund	Contract	2009-2013
SS-24	Construct Twin Lake Regional Storm Water Pond	270,000	Storm Sewer Utility Fund	Contract	2009
Part B. Studies					
SS-11	General Mills JFB Storm/Wetland Feasibility	20,000	Storm Sewer Utility Fund	Contract	2012
SS-A	Prepare Citywide Hydrologic Model (including Decola Ponds analyses)	245,000	Storm Sewer Utility Fund	Contract	2009-2017
SS-B	Hydraulic analysis for Wisconsin Ave control structure in concert with SS-A	5,000	Storm Sewer Utility Fund	Contract	2009
SS-12	Brookview Buffer study	30,000	Storm Sewer Utility Fund	Contract	2012
SS-C	Loading reduction review for MCWD portion of city	2,000	Storm Sewer Utility Fund	Contract	2013
SS-D	City-wide Water Quality BMP Implementation Study	10,000	Storm Sewer Utility Fund	Contract	2010
*Cost estimates are based on 2007 dollars, do not account for inflation, and are for planning purposes only.					

Project Number	Project Description	Cost Estimate (\$)*	Potential Funding Sources	Contract or City Staff	Proposed Year(s) of Implementation
Part C. Official Controls					
SS-E	Develop and adopt storm water management ordinance	15,000	General Fund	City Staff	2009
SP 4.A.B	Review/revise existing grading drainage and erosion control ordinance	5,000	General Fund	City Staff	2009
SP 4.F	Continue to inspect and enforce grading and erosion control requirements	15,000/yr	Storm Sewer Utility Fund	City Staff	2009-2017
SP 3.B	Develop regulatory mechanism prohibiting non-storm water discharges	5,000	Storm Sewer Utility Fund	City Staff	2009
SP 3.C.2	Develop and implement program to detect and address illegal dumping	5,000/yr	Storm Sewer Utility Fund	City Staff	2009-2017
SP 4.E	Establish and implement procedures for the receipt and consideration of reports of storm water noncompliance	2,500/yr	Storm Sewer Utility Fund	City Staff	2009-2017
SP 6.B.4	Develop and implement program to deal with stockpile, storage, and material handling areas	1,500/yr	Storm Sewer Utility Fund	City Staff	2009-2017
SP 4.C	Develop and implement program do deal with construction site waste disposal and debris storage	2,000/yr	Storm Sewer Utility Fund	City Staff	2009-2017
TOTAL ANNUAL:		26,000/yr			
Part D. Operation and Maintenance Controls					
SP 3.A.1	Maintain storm sewer system map.	5,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 3.C.1	Identification of illicit non storm water discharge.	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 5.A	Enforce/implement WMO BMP requirements.	1,500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 5.C	Private BMP maintenance agreements tracking.	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.A	Training for city staff regarding storm water issues.	10,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1B	Street and parking lot sweeping program.	125,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.2	Annual inspection of structural pollution control devices.	5,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.3	Inspect at least 20% of the ms4 outfalls, sediment basins and ponds each year on a rotating basis.	6,500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.5	Inspection follow up, determination of necessary action and implementation of corrective measures.	20,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6b-6	Inspection annual report.	2,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.7	Establish activity tracking.	2,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1A	Automotive spill and leak program.	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1C	Storm drain system cleaning.	50,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1D	Hazardous material management.	1,500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1E	Road salt storage and handling review.	2,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
*Cost estimates are based on 2007 dollars, do not account for inflation, and are for planning purposes only.					

Project Number	Project Description	Cost Estimate (\$)*	Potential Funding Sources	Contract or City Staff	Proposed Year(s) of Implementation
<i>continued</i> Part D. Operation and Maintenance Controls					
SP 6.B.1F	Used oil recycling.	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 6.B.1G	Develop/maintain spill response plan.	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.A,B,C	Annual MS4-SWPPP activities	3,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SS-F	Annual report to the MCWD on task implementation	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 3.A.2	Bassett Creek Inventory	9,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SS-G	Develop system inspection protocol & program	9,000	Storm Sewer Utility Fund	City Staff	2014
SS-H	Maintain 17 pond buffer areas	22,000/yr	Storm Sewer Utility Fund	Contract	2008-2017
TOTAL ANNUAL:		270,500/yr			
Part E. Public Education, Outreach, Participation, and Involvement					
SP 1.A.1	Implement storm water communications plan	2,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 1.A.2	Develop internet site information	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 1.A.3	Develop and distribute storm water educational materials	3,500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 1.A.4	Develop and distribute new resident packet	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 1.A.5	Local cable TV scroll	500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 1.A.6	City newsletter	500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.B	Conduct annual meeting	500/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.D.1	Volunteer storm drain stenciling program	1,300/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.D.2	Adopt-a-storm-drain program	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.D.3	BCWMC public meetings	1,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 2.D.4	Environmental Commission meetings	2,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
SP 3.D	Public and employee illicit discharge information program.	5,000/yr	Storm Sewer Utility Fund	City Staff	2008-2017
TOTAL ANNUAL:		19,300/yr			
*Cost estimates are based on 2007 dollars, do not account for inflation, and are for planning purposes only.					

Table 10.5: City of Golden Valley Water Resources Implementation Program Summarized by Year

Project number	Estimated Costs by Year (\$)*									
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Part A. Capital Improvement Projects										
SS-1	900,000	900,000	1,100,000	1,100,000	1,200,000	1,200,000				
SS-10					150,000					
SS-11					280,000					
SS-13					55,000					
SS-16				230,000						
SS-18		500,000								
SS-20	535,000		471,500		588,500					
SS-22					26,000					
SS-23		75,000		105,000		170,000				
SS-24		270,000								
Total CIP	1,435,000	1,745,000	1,571,500	1,435,000	2,299,500	1,370,000				
Part B. Studies										
SS-11					20,000					
SS-A		27,000	27,000	27,000	27,000	27,000	27,000	27,000	28,000	28,000
SS-B		5,000								
SS-12					30,000					
SS-C		15,000				2,000				
SS-D			35,000							
Total	0	47,000	62,000	27,000	77,000	29,000	27,000	27,000	28,000	28,000
Part C. Official Controls										
SS-E	7,500	7,500								
SP 4.A.B	2,500	2,500								
SP 4.F		15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
SP 3.B		5,000								
SP 3.C.2		5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
SP 4.E		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
SP 6.B.4		1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
SP 4.C		2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Total	10,000	41,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000	26,000
Part D. Operation and Maintenance Programs										
SP 3.A.1	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
SP 3.C.1	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 5.A	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
SP 5.C	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 6.A	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
SP 6.B.1B	125,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
SP 6.B.2	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
SP 6.B.3	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
SP 6.B.5	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
SP 6.B.6	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000

*Cost estimates are based on 2007 dollars, do not account for inflation, and are for planning purposes only.

Project number	Estimated Costs by Year (\$)*										
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	
<i>continued</i> Part D. Operation and Maintenance Programs											
SP 6.B.7	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
SP 6.B.1A	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 6.B.1C	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
SP 6.B.1D	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
SP 6.B.1E	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
SP 6.B.1F	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 6.B.1G	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 2.A,B & C	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
SS-F	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 3.A.2	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
SS-G							9,000				
SS-H	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000	22,000
Total O&M	270,500	270,500	270,500	270,500	270,500	270,500	279,500	270,500	270,500	270,500	270,500
Part E. Public Education, Outreach, Participation, and Involvement											
SP 1.A.1	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
SP 1.A.2	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 1.A.3	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
SP 1.A.4	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 1.A.5	500	500	500	500	500	500	500	500	500	500	500
SP 1.A.6	500	500	500	500	500	500	500	500	500	500	500
SP 2.B	500	500	500	500	500	500	500	500	500	500	500
SP 2.D.1	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
SP 2.D.2	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 2.D.3	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SP 2.D.4	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
SP 3.D	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
TOTAL	19,300	19,300	19,300	19,300	19,300	19,300	19,300	19,300	19,300	19,300	19,300
*Cost estimates are based on 2007 dollars, do not account for inflation, and are for planning purposes only.											