

City of Bainbridge Island
Surface and Stormwater
Management Program Analysis

Submitted to:
City of Bainbridge Island
Public Works Department

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Acknowledgements

City of Bainbridge Island
Surface and Stormwater Management Program

Submitted to:
City of Bainbridge Island
Public Works Department

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Section I—Project Overview

Introduction

The City of Bainbridge Island (City) is located in central Puget Sound, just west of Seattle, Washington. The City has a population of over 21,000 and covers just less than 28 square miles of both urbanized and rural areas. As an island community, the City of Bainbridge Island faces unique challenges related to natural resource protection. The citizens of Bainbridge Island value their connection to the natural environment. To that end, the City's Water Resources program has a mission to "...to preserve, protect and enhance the City's water resources to ensure that future generations will have a sufficient quantity of high quality water to support life and natural habitat on the island." The Water Resource Program priorities include Surface and Stormwater Management (SSWM), Groundwater Management, and Education & Outreach. Since incorporation of the island in 1991, the City has worked to develop a stormwater program that will meet the demands of this growing community.

The City will soon be faced with a requirement to comply with the conditions of the National Pollution Discharge Elimination System (NPDES) Western Washington Phase II Permit (Phase II Permit), issued by the Washington State Department of Ecology (DOE) in accordance with the federal Clean Water Act. The Phase II Permit outlines stormwater program activities and implementation milestones that the City must follow in order to be in compliance with federal law. At the time of this project, the Phase II Permit is in draft form. The final permit is expected to be issued by DOE in the winter of 2006 and will cover Phase II communities for 5 years following final issuance.

Project Background

In March 2006, the City hired Otak, Inc. (Otak) to "...review the existing stormwater program activities and determine if additional elements are needed both now, and in the future, for compliance with the Phase II permit." The project is funded through the Public Works budget and managed through the Engineering group. However, input to the project was provided by many groups within the City including Engineering, Operations & Maintenance (O&M), Public Works Administration, Long-Range Planning, Current Planning, and Finance.

The intent of the project is to identify deficiencies in the City's existing SSWM Program and estimate what will be needed to meet regulatory compliance requirements. The City will use this analysis to identify new SSWM Program activities, plan for future staffing needs, and evaluate the current stormwater utility rates. This project also provides the City with a framework for tracking and reporting on program activities, which is a requirement of the NPDES permit. The project schedule was planned such that the program analysis data would be available in the fall of 2006 to coordinate with the City's benchmarking

Section I—Project Overview

Continued

performance study, storm & surface water rate study, and the annual budget process.

Project Execution

The SSWM Program analysis was conducted in four steps:

- Step 1 – Document the City’s existing SSWM Program, including capital facilities and current projects;
- Step 2 – Outline regulatory requirements, milestone dates, and consequences for non-compliance;
- Step 3 – Identify gaps in the City’s existing program compared to regulatory requirements and calculate staff levels and costs for full compliance; and
- Step 4 – Review funding options to finance needed enhancements to the City’s stormwater program.

Each step in the process was documented in a separate technical memorandum. Each step builds upon the previous steps to develop a comprehensive analysis of the City’s SSWM Program. For example, the spreadsheet developed in Step 1 to document the existing program became the format and technical backbone for the gap analysis in Step 3. The flow chart in Figure 1 shows the overall project process.

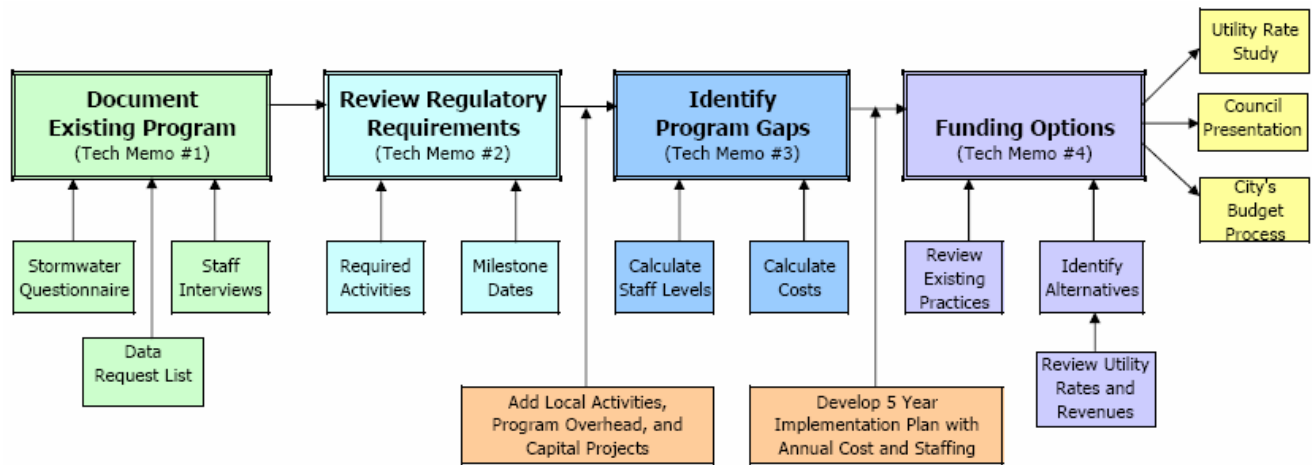


Figure 1 – Stormwater Program Analysis Process

The four technical memorandums are included as attachments to this report and should be reviewed prior to making any policy or funding decisions. A short summary of each step in the analysis follows, along with overall conclusions and recommendations.

Section 2—Technical Summary

City's Existing SSWM Program

The first step in the SSWM Program Analysis was to document all the existing activities the City is currently conducting related to surface water or stormwater. Initial information was collected through a kick-off meeting, site visit, and Stormwater Questionnaire that was filled out by several City staff. The City also supplied Otak with a substantial amount of information in response to Otak's initial data request list. This included a staffing analysis provided by Ross Hathaway and Melva Hill that estimated the labor hours spent by each member of the Engineering Department on stormwater related activities. John Inch provided a similar analysis for the maintenance (O&M) crews. Follow-up phone interviews were conducted with key staff members in the Engineering, O&M, Current Planning, and Long-range Planning departments.

The information collected, documenting the City's existing activities, was formatted and summarized according to the minimum requirements of the Phase II Permit. The Existing Program Spreadsheet was developed along with Technical Memorandum #1 to record and present the results to the City. Both Technical Memorandum #1 and the Existing Program Spreadsheet are attached to this document.

The Step 1 analysis showed that the City's major program strengths are in the areas of Public Education and Outreach, design and maintenance standards, and O&M activities. Areas that need enhancement include illicit discharge detection and elimination (IDDE), facility inspection, construction site inspection, and program tracking and record keeping. The City also needs to begin mapping its stormwater system and developing a detailed inventory of facilities.

NPDES Permit Requirements

The second step in the SSWM Program Analysis was to review the draft NPDES Phase II Permit and identify the detailed program activities and implementation milestones that the City must meet in order to be in compliance with federal law. Once DOE issues the final permit, the City will be covered for five years, through December 31, 2011. During that time, the City must meet various milestones and submit annual reports to DOE showing compliance and documenting progress toward full implementation of the permit conditions.

When issued, the City's Phase II Permit will be divided into 9 major surface water management program (SWMP) elements with a total of 39 sub-elements. Each sub-element has its own requirements and milestones that are documented in the Regulatory Requirements Spreadsheet included with Technical Memorandum #2. In some cases, a single activity may cover requirements in multiple categories. Those overlaps are noted in the

Section 2—Technical Summary

Continued

analysis. Both Technical Memorandum #2 and the Regulatory Requirements Spreadsheet are attached to this document.

In addition to the milestones required by the Phase II Permit, this analysis also recommends interim deadlines that will help the City meet the NPDES requirements. For example, the permit requires that the City develop a GIS map of the whole stormwater system by the end of Year 4 (2010). To meet these requirements, this analysis recommends that the City set an interim goal of mapping one third of the system each year, beginning in Year 1 (2007) so that the mapping is complete by the permit deadline. These recommended milestones are also documented in Technical Memorandum #2 and have been used to plan staffing needs in the next step of the analysis.

It should be noted that other regulatory documents beyond the NPDES Phase II Permit may affect the City's SSWM Program. These include, but are not limited to, the Underground Injection Control Rule, the Puget Sound Water Quality Conservation and Recovery Plan, the Endangered Species Act, DOE's total maximum daily load allocations, and the state Water Resource Inventory Area activities. City staff have reviewed these and other regulations and have determined that the NPDES permit will play the largest role in shaping the City's future SSWM program. However, the City should continue to track changes and modifications to these regulations to determine if and how they may affect the City's future stormwater program.

Program Gap Analysis

The third and most substantial step in the SSWM Program analysis is to compare the City's existing stormwater activities to those required by the Phase II Permit, identify gaps in the existing program, and estimate additional resources required for full compliance. In addition to the Phase II Permit requirements, documented in Technical Memorandum #2, this program gap analysis also accounts for local, non-regulatory activities that are required for a successful implementation program. This includes Capital Improvement Projects (CIP) and Equipment, Program Overhead, and the City's new Water Quality and Groundwater Monitoring Programs.

For this Analysis, the City's SSWM Program was divided into 13 major elements:

- Elements 1 – 9 are based on the Phase II requirements. The requirements were outlined in detail in Technical Memorandum #2.
- Element 10 relates to other regulations, such as the Underground Injection Control (UIC) Rule and the Puget Sound Water Quality Management Plan (PSWQMP), that may affect the SSWM Program. It should be noted that preliminary program estimates are

Section 2—Technical Summary

Continued

- included for achieving compliance with these additional regulations, but additional analysis is needed to identify the specific activities and actual costs.
- Element 11 covers additional activities that are not specifically required by the Phase II Permit, but are already in place or desired at the local level. This includes professional services related to SSWM, the water quality and groundwater monitoring programs that the City is choosing to implement, and the City's Natural Resources Team.
 - Element 12 covers activities that are needed at the local level to implement a successful SSWM Program. This element is titled Program Overhead and includes Executive and Finance support, Operating Leases, Insurance, Intergovernmental Transfers, Utility Overhead, and Debt Service Cost.
 - Element 13 documents the City's Capital Improvement Projects (CIP) and equipment purchases related to the SSWM Program.

In some program areas, such as Public Involvement and Education, the City is very close to full compliance. Other areas, such as Illicit Discharge Detection and Elimination (IDDE), additional resources are needed to implement the activities and achieve the milestones in the Phase II Permit. For each program element, the required staff time was converted to full time equivalents (FTE), and the total labor cost was estimated based on average staff salary and benefit ranges provided by the City¹. Any equipment or material costs were added to the labor cost to estimate the total program cost over the five years of the permit (2007 through 2011).

Overall, the gap analysis recommends the addition of two FTE in Year 1 (2007) and one more FTE in Year 2 (2008) to bring the long-term SSWM Program staffing to 12.5 FTE. Staff added in Year 1 will be focused on the Water Quality and Groundwater Monitoring programs and stormwater system mapping. The SSWM Program would also benefit from a half-time administrative staff member to track program activities. Staff added in Year 2 are needed to increase activities in development review, facility inspection, construction site inspection, and catch basin and facility maintenance.

SSWM Program funding can be divided into four major categories: Regulatory Program Activities (Program Elements 1 – 10), Local Stormwater Activities (Element 11), Program Overhead (Element 12), and CIP and Equipment (Element 13). Technical Memorandum #3 summarizes the annual staffing and funding needs in each category and includes an extensive *Stormwater Management Program Gap Analysis and Costs* spreadsheet with detailed descriptions, milestones, staffing needs, and costs for each program element over the next five years. The total SSWM annual funding and staffing needs are summarized in Table 1.

Section 2—Technical Summary

Continued

Table I						
Total SSWM Program Costs						
	Existing 2006	Year 1 2007	Year 2 2008	Year 3 2009	Year 4 2010	Year 5 2011
Staffing Level	9.4 FTE	11.4 FTE	12.6 FTE	12.6 FTE	12.6 FTE	12.5 FTE
Regulatory Program Activities	\$558K	\$735K	\$913K	\$907K	\$896K	\$888K
Local Stormwater Activities	\$558K	\$179K	\$170K	\$178K	\$182K	\$192K
Program Overhead	\$588K	\$588K	\$588K	\$588K	\$588K	\$588K
CIP and Equipment	\$1,094K	\$708K	\$583K	\$713K	\$760K	\$925K
Total	\$2,798K	\$2,210K	\$2,254K	\$2,386K	\$2,426K	\$2,593K

Based on this analysis:

- The City needs to increase long term Regulatory Program funding by approximately \$350K over existing levels.
- The cost of Local Stormwater Activities can be greatly reduced because city staff will be taking over the Water Quality and Groundwater Monitoring programs (reducing the professional services fees), and only 1/3 of the future cost of the monitoring programs will be paid for by the SSWM program.
- Program Overhead should remain fairly consistent, though some changes may come from the Stormwater Utility Rate Study currently in progress.
- Capital Project costs range from \$583K to \$925K per year, depending on which projects are proposed for design and construction in each year².

It should be noted that the 2006 revenue from the Stormwater Utility is projected to be \$1,063K. This revenue funds only 38 percent of the 2006 program and only 40-50 percent of the future program. The majority of the existing SSWM Program funding comes from other sources, primarily the City's General Fund.

¹ Note: 1 FTE = 1710 working hours and costs \$78,660 per year or \$46 per hour with benefits.

² Note: 2006 included a major expenditure of \$440K to construct the City's decant facility.

Financial Options

The final step in the SSWM Program analysis is to review the existing revenue sources for the SSWM Program and identify ways that the City may generate the needed revenue to fill the funding gaps identified in the gap analysis. This analysis reviewed potential funding mechanisms that municipalities have traditionally used to fund their stormwater management programs, including maintenance, capital improvements, and regulatory compliance. Most agencies find that it takes more than one funding mechanism to adequately fund their stormwater needs.

The financial options reviewed in Technical Memorandum #4 include:

- Stormwater Utilities,
- Development Review Fees,
- Grants,
- Loans,
- Revenue Bonds,
- Fee in Lieu of Onsite Detention,
- Special Purpose Districts,
- System Development Charges, and
- Future Coordination with Other Agencies.

The City has already developed a Stormwater Utility. However, the current rates fund less than half of the existing SSWM Program needs. This rate should be reviewed and likely increased to provide a better base of funding for the SSWM Program. The City may also consider increasing development review fees and transferring the increased revenue to the SSWM Program to pay for the increased design review and construction site inspection required by the Phase II Permit. Adopting system development charges may be another way to increase revenue and to fund new capital infrastructure improvements.

This overview in Technical Memorandum #4 provides only a basic summary of financial options. A more detailed financial analysis is being prepared as part of the City's Utility Rate Study, which is being conducted concurrently with this study.

Section 3—Conclusions and Recommendations

The conclusions and recommendations identified in this SSWM Program Analysis are broken into four major categories: Regulatory Requirements, Local (Non-Regulatory) Activities, Staffing Requirements, and Funding Recommendations. Additional details and background information is provided are the attached technical memorandums. The memorandums and analysis spreadsheets should be reviewed in detail before making any staffing, policy, or funding decisions.

Regulatory Requirements

The City should:

- Continue the current Public Education and Outreach program through an outside consultant. The current program utilizes numerous volunteer hours to meet the outreach goals and already exceeds the requirements of the Phase II Permit. Conducting such a program utilizing City staff would require a significant increase in funds.
- Develop a schedule to create a detailed GIS map (using a field GPS unit) of the City's stormwater infrastructure. We suggest using summer interns to collect data on at least one third of the system each summer and using the winter months to process and verify the data. Processing will require staff to have GIS capabilities or the use of an outside consultant. The full system map must be completed by the end of Year 4 (2010).
- Set-up a hotline phone number where the public can report spills, illegal dumping, and drainage problems. Publicize the number with a link on the City's website and consider a billing insert.
- Prepare a written Illegal Detection Discharge Elimination (IDDE) plan that documents the City's procedures, including an emergency call list, and outlines response and enforcement deadlines consistent with the Phase II Permit.
- Focus on implementing the development standards outlined in the new stormwater ordinance. This may require some in-house training to ensure that all development review staff understand the design guidelines. The Engineering staff should also seek to meet the construction site inspection schedule outlined in the Phase II Permit; additional staff time will likely be needed to accomplish this goal.
- Continue O&M activities to sweep streets, clear ditches, inspect culverts, and maintain facilities. Develop a schedule to increase maintenance frequency for catch basins, especially those outside the downtown core. Maintain records to document completed work and define needed frequencies for the various O/M activities in order to optimize annual O/M expenditures.
- Implement a program to track stormwater activities on a monthly basis. At a minimum, collect records of site inspections, plan reviews, O&M activities, public responses, and staff training in one central location, so that it can be readily compiled for reporting to Ecology at the end of the year. A more advanced system could be developed to involve

Section 3—Conclusions and Recommendations

Continued

the use of a software program to track activity completeness and staff time utilized in completing the various activities.

- Review the requirements of the Underground Injection Control (UIC) rule to determine what additional programs and/or funding may be needed to be in compliance with that state law. Activities required for compliance will depend on the extent at which UICs are used for stormwater disposal throughout the City. The City's UIC Program should be coordinated with the Groundwater Monitoring Program and wellhead protection guidelines.
- Consider starting a long term program to develop basin plans for each of the City's watersheds that would identify current and future problems and identify long term development guidelines, water quality targets, and CIP projects. Basin planning is a requirement of the Puget Sound Water Quality Conservation and Recovery Plan.

Local (Non-Regulatory) Activities

The City should:

- Maintain funding for program overhead and Executive and Finance Support, as these are necessary activities and expenses to run the program.
- Review actual costs to operate the decant facility, including hauling and disposing of waste at the end of the year, and adjust the long term program expenditure projections accordingly.
- Evaluate the grant agreement with DOE that is funding the development of the Water Quality Monitoring program for potential cost savings and efficiencies. The current study has outlined a monitoring plan that requires an additional 1.0 FTE and approximately \$90K per year in lab fees. While the DOE grant paid for the development of the program, the long term implementation will be the City's responsibility³.
- Continue to work with USGS to develop an island-wide groundwater modeling and monitoring program.
- Continue gathering the City's Natural Resources Team on a regular basis to discuss environmental issues. Many issues discussed with this group relate to the SSWM Program. These meetings are a good venue to share information, build understanding between City departments, and explore program efficiencies and potential cost savings
- Review the Kato & Warren *City of Bainbridge Island Surface Water Management Plan* and determine if additional CIPs should be added to the five year plan to solve existing critical problems within the stormwater system. The future projects identified in the plan

³ Note: Only 1/3 of the monitoring cost (staffing and lab fees) will be funded through the SSWM Program. The remaining 2/3 of the cost will be paid for by the General Fund, as the monitoring program has island-wide benefits that extend beyond surface water quality.

Section 3—Conclusions and Recommendations

Continued

should be evaluated to determine the timeline in which they may become a priority. The basin planning recommended for compliance with the Puget Sound Water Quality Management Plan will help in this effort.

Staffing Requirements

The City should:

- Add 2.0 FTE in 2007 to bring the total SSWM Program staffing to 11.4 FTE.⁴ Additional staff time is needed immediately to implement the Water Quality and Groundwater Monitoring Programs (0.5 FTE) and increase O&M activities (0.5 FTE). An additional half time (0.5 FTE) administrative assistant is needed to help track SSWM Program activities. The remaining time (0.5 FTE) should be split between development review, public involvement, and program implementation.
- Add 1.0 FTE in 2008 to bring the total SSWM Program staffing to 12.4 FTE. Additional staff time is needed in the Engineering Department (0.8 FTE) to address increased development review, site inspection, and facility inspection requirements. Staff time is also needed to continue ramping up the O&M staffing to reach 4.75 FTE by 2008.
- Utilize summer interns to collect field data for developing the stormwater system inventory and associated GIS database.

Funding Recommendations

The City should:

- Consider increasing the Stormwater Utility rate incrementally over several years to reach the needed funding level. By forecasting future needs, the City may be able to adopt a single ordinance that would govern the fee increases over the next three to five years.
- Adopt a pay as you go capital plan that allows CIP projects to be designed and constructed as annually accumulated SWM Funds allow.
- Continue paying for development review out of the Building & Development Services (B&DS) fund. This is an appropriate distribution of collected funds as the B&DS funds come from development review fees. If the cost of development review is transferred

⁴ The City staff have decided to request 1.0 FTE in 2007 and use existing staff to address other NPDES regulatory activities in 2007. This will leave the 2007 staffing level (10.4 FTE) total recommended in the gap analysis (11.4 FTE). The deficit would affect the development review and O&M activities. However, these programs are functioning and meeting many program requirements at the current staff levels. The City will be able to show progress toward permit requirements at the first annual report to DOE (March 2008). The staffing deficit can be corrected in 2008 to ensure that the City's long term SSWM Program meets permit deadlines, if the anticipated program efficiencies are not realized.

Section 3—Conclusions and Recommendations

Continued

- into the SSWM Program, then an equal portion of development review fees should be transferred as well.
- Consider an increase in the development review fees paid by developers. Any increase in collected fees could be utilized to pay for the increased development review time and construction site inspection required by the Phase II Permit.
 - Consider whether system development charges (SDCs) could be used to create an added revenue source for the SSWM Program. Adding stormwater connections to the existing system will eventually require upgrades and enhancements to the downstream system. The City already has SDCs for water and sewer connections.
 - Look for opportunities to partner with Kitsap County or other local government agencies to share the cost of the SSWM Program. Partnering may be useful in purchasing maintenance equipment, providing needed staff training, or conducting public outreach activities, as will be required by the City's new NPDES II Permit.

Technical Memorandum #1:
City's Existing
Surface and Stormwater Program

Technical Memorandum



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To: Melva Hill, City of Bainbridge Island

From: Joe Simmler, PhD
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Copies:

Date: May 25, 2006
Final Revisions October 20, 2006

Subject: Technical Memorandum #1
City's Existing Surface and Stormwater Program

Project No.: 30794

Introduction

The City of Bainbridge Island (City) is located in central Puget Sound, just west of the Seattle. The City has a population of over 21,000 and covers just less than 28 square miles of both urbanized and rural areas. A map of the City, including watershed boundaries and primary water resource features is included as Appendix A.

Background

As an island community, the City of Bainbridge Island faces unique challenges related to natural resource protection. The citizens of Bainbridge Island value their connection to the natural environment. To that end, the City's Water Resources program has a mission to "...to preserve, protect and enhance the City's water resources to ensure that future generations will have a sufficient quantity of high quality water to support life and natural habitat on the island." The Water Resource Program priorities include Surface and Stormwater Management, Groundwater Management, and Education & Outreach. Since incorporation of the island in 1991, the City has worked to develop a stormwater program that will meet the demands of this growing community.

The City will soon be faced with a requirement to comply with the conditions of the National Pollution Discharge Elimination System (NPDES) Municipal Stormwater General Permit for Western Washington (Phase II Permit), to be issued this fall by the Washington State Department of Ecology (DOE). The Phase II Permit outlines stormwater program activities and implementation milestones that the City must follow in order to be in compliance with federal law. At this time, the Phase II Permit is in draft form. The final permit is expected to be issued by DOE in the winter of 2006/2007 and will cover Phase II communities for 5 years following final issuance.

Project Overview

This technical memorandum is the first in a series of memorandums that Otak is developing to analyze the City's stormwater program with respect to upcoming NPDES guidelines. The analysis includes the following steps, each documented in a separate technical memorandum:

- Step 1 – Document the City's existing Surface and Stormwater Management (SSWM) Program;
- Step 2 – Outline regulatory requirements, milestone dates, and consequences for non-compliance;
- Step 3 – Identify gaps in the City's existing program compared to regulatory requirements and calculate staff levels and costs for full compliance; and
- Step 4 – Review funding options to finance needed enhancements to the City's stormwater program.

This series of memorandums will be integrated into a final report documenting all steps and recommendations from this program analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City's budget process.

Methods of Analysis

The objective of this review is to document existing activities, services, staffing, and levels of funding in light of the upcoming regulatory requirements. This analysis will allow the City to take credit for existing activities that meet Phase II Permit objectives and identify areas where new or enhanced activities are needed. This analysis is based on data and documents received from the City, the results of a Stormwater Questionnaire, site visits, and a number of interviews with City Staff.

Data and Documents

Based on the data request (Appendix B) made at the project kick-off meeting on March 23, 2006, a substantial amount of information on the City's existing SSWM Program has been provided by the City. This included City organizational charts, responsibility matrices, staff salaries and benefits, operations and maintenance manuals, and scopes of work for stormwater related projects being performed by consultants. This information was supplemented by data downloaded from the City's website, including maps, stormwater related ordinances and design standards, annual budgets, permit review fee structure, stormwater utilities, and policies.

Stormwater Questionnaire

During the project kick-off meeting, Otak distributed a stormwater questionnaire to City Staff that are involved with activities related to stormwater management. The questionnaire aims at identifying current City activities and developing a baseline for understanding the existing SSWM Program procedures and policies. A copy of the stormwater questionnaire with responses provided by City Staff is attached to this memorandum (Appendix C).

Staff Interviews and Site Visit

Based on information obtained through the Stormwater Questionnaire, Otak staff conducted a number of interviews with City Staff members to gain further clarification on the City's existing activities. Weekly phone calls were held with Melva Hill and additional conversations took place with Jalyn Cummings, John Inch, Lance Newkirk, Marja Preston, Josh Machen, Deanna Jacobsen, and Kathy Cook to understand existing program activities and staff levels in various City departments.

Otak staff also conducted a site visit with Melva Hill on March 23, 2006 to gain an overall understanding of watershed characteristics, which included visits to the maintenance yard and new decant facility.

Hours and FTE

Through phone and email conversations, Ross Hathaway and Melva Hill provided an estimate of labor hours spent by each staff member on various program activities. They were then able to estimate the percentage of hours that related to SSWM Program activities. John Inch also used time cards from the O&M crews to determine the hours spent annually on storm drainage, ditch clearing, culvert maintenance, and street sweeping. Information on shoulder work and vegetation management was also provided, though those activities could not be credited toward NPDES regulatory requirements. Otak was able to cross reference this information with staff salary and benefits data to determine the annual labor costs to conduct the City's stormwater activities. Elray Konkel also provided information documenting what percentage of each city staff member's salary is paid for by the SSWM Program.

In determining the number of full time equivalents (FTE) that the City uses for SSWM Program activities, the hours spent on each activity were divided by 1,710 hours. This is the amount of hours that staff members typically have annually available for productive work once vacations, holidays, sick leave, and other benefits are taken into account.

City's Existing SSWM Program

This summary of the City's Existing SSWM Program focuses on what is needed for compliance with the upcoming Phase II Permit. A detailed breakdown of the City's existing activities in relation to the various permit requirements is attached to this memorandum (Appendix D) in the *Summary of Existing Surface and Stormwater Management Program Spreadsheet*. The spreadsheet includes an estimate of existing staff time, expenditures, and funding sources currently used for the SSWM Program. An overview of the existing program is included below. Please refer to the attached spreadsheet for a more detailed analysis.

History and Background

The City incorporated the entire island in 1991, changing the name from the City of Winslow to the City of Bainbridge Island. Since that time, great strides have been made in improving the public infrastructure, including the development of a SSWM Program. The SSWM Program is now partially funded by a stormwater utility. The utility fees are used to offset the cost of program activities, including public education, design review, and operations and maintenance of the stormwater infrastructure.

Existing System

The City's existing stormwater infrastructure consists of 130 miles of open ditches, 20 miles of closed storm sewer pipes, and approximately 500 catch basins. The City maintains over 60 detention/retention facilities and several other water quality treatment systems. One challenge to this island community is the large number of stormwater outfalls that must be inventoried and inspected as part of the Phase II requirements. The City estimates approximately 175 outfalls discharge from public and private systems to the shoreline and into the Puget Sound. Other outfalls discharge stormwater from public and private systems to local creeks, but those have yet to be inventoried.

Ordinances and Legal Authorities

The City's SSWM Program operates primarily through chapters 15.20 – *Surface and Stormwater Management* and 15.21 – *Storm Water Facilities Maintenance Program* of the Bainbridge Island Municipal Code (BIMC). Ordinance 2005-10, passed in December 2005 amended BIMC 15.20, primarily to adopt the guidelines from the Department of Ecology's *Stormwater Management Manual for Western Washington*, dated February 2005. The development of the stormwater utility is outlined in BIMC 13.24 – *Storm and Surface Waters*, and utility fees were updated by the City Council at the end of 2005. Additional chapters relevant to the SSWM Program include:

BIMC 1.26 – *Code Enforcement*

BIMC 13.14 – *Side Sewer Storm and Surface Water Infiltration and Inflow Reduction Program*

BIMC 15.18 – *Land Clearing*

BIMC 16.20 – *Critical Areas*

BIMC 16.22 – *Vegetation Management*

BIMC 18.105 – *Site Plan and Design Review*

Organization

The City's SSWM Program activities are shared between several departments. Primary responsibility falls within the Public Works Department through either Engineering or Operations and Maintenance (O&M) Divisions. Additional services are provided by the Executive Department, Finance and Administrative Services, Planning and Community Development (PCD), and the Information Technology Department. Appendix E shows the organizational structure of the

departments involved with SSWM Program activities along with an estimate of the current staffing levels. Staff full time equivalents (FTE) is based on 1,710 productive work hours in a given year.

Within Public Works, the Engineering Department is responsible for most of the activities related to NPDES compliance. Stormwater related activities currently involve a total of 5.0 FTE. The Engineering Capital Projects group focuses primarily on planning and implementing the City's Capital Facilities plan, approximately 25 percent of which relates to stormwater projects. The capital group's annual contribution to stormwater related activities totals 1.6 FTE. The Engineering Development Review group uses approximately 2.0 FTE annually to review development plans, inspect construction sites, and respond to development related questions and requests. Another 1.0 FTE is spread throughout the City to cover stormwater facility inspection, public outreach and education, and other miscellaneous drainage activities. The survey group within the Engineering department uses approximately 0.4 FTE to support stormwater projects.

The O&M department also plays a large role in maintaining the City's stormwater infrastructure. Approximately 3.8 FTE are used annually for ditch clearing, stormwater facility maintenance, and street sweeping. The O&M department also has the task of keeping records of inspections and maintenance activities, as well as monitor material and effluent related to the City's new decant facility.

SSWM Program activities conducted by other city departments are minor. The Executive Department (0.3 FTE) provides overall management. The Finance & Administrative Services and Department (0.2 FTE) administers the stormwater utility. The Current Planning Department (0.1 FTE) coordinates the development review with the engineering department, ensuring that stormwater conditions are applied to development applications. Long Range Planning and GIS also support the SSWM Program as needed, though their activities are not significant enough to show up in an FTE analysis.

In 2002, the City of Bainbridge Island formed a Natural Resources Team (NRT), consisting of members from all departments listed above, as well as representatives from the Police, Fire, and Parks departments. The group meets monthly to discuss a wide range of issues relating to the protection and management of the natural environment. While not dedicated solely to SSWM Program issues, many of the topics discussed by the NRT have a surface or stormwater component or impact SSWM Program activities.

Activities and Services

The majority of SSWM Program activities relate to the design, installation, and maintenance of the stormwater infrastructure. As mentioned above, the Public Works Department oversees the design and installation of new stormwater facilities for development projects, manages the construction of public stormwater projects and infrastructure upgrades, and maintains the existing infrastructure. In

April 2006, a new decant facility was opened to treat waste collected during street sweeping, catch basin and ditch cleaning, and stormwater facility maintenance.

The City's SSWM Program also includes a large public education and outreach component. The City has hired an outside consultant to conduct public outreach activities. To date, the outreach has targeted the residential public with information on natural yard care, reducing pesticide use, and limited pollutants discharged to the stormwater system. This year, the public education will place a larger focus on the business community to educate restaurant owners about illicit discharge of grease and other waste to the storm drain system.

The City is also trying to stay up to date with the latest statewide stormwater guidelines. Though time is limited, two staff members were able to attend training on the 2005 DOE Manual, and maintenance staff attended a course from the University of Washington's Regional Road Maintenance ESA program. The City has also recently (December, 2005) adopted updated standards for the design and maintenance of stormwater facilities.

Finally, the City of Bainbridge Island has received a grant from the Washington State Department of Ecology to conduct a water quality monitoring study. The study will determine baseline conditions, identify water quality and water flow problems, and define thresholds for initiation of management responses. The project also includes a one-year pilot program that will be reviewed by the City, Ecology, and other interested parties. At the same time, the City is developing a groundwater monitoring program that may be coordinated with a USGS project to model the groundwater elevations throughout the area.

Capital Improvements

The City's capital facilities plan was recently updated in December, 2005 and is currently going through another review. The plan identifies projects and budgets over the next six years. Drainage projects account for between \$450,000 and \$792,000 of the capital project budget, depending on the year, with \$790,033 allotted for 2006. Much of the recent spending has been for the construction of the new decant facility (\$440,859 in 2006). Major capital projects to be completed over the next six years include:

- Eagle Harbor Drive,
- Springbrook Creek (Fletcher Bay/High School) Phases 1 and 2,
- Fairview/Madrona Area Improvements,
- Taylor Pine, Phases 1 and 2,
- Halls Hill Area Drainage Improvements (3-T's),
- Lynwood Center/Pt. White CB to Outfall, and
- Hidden Cove at Coho Creek.

A number of other projects are identified as part of the long term (2012 to 2026) plan.

The City also runs an annual Drainage/Fish Passage Upgrade Program. Within the capital facilities budget, approximately \$110,000 per year is allocated for upgrades to culverts and other portions of the existing drainage system. These small projects are identified by Melva Hill and John Inch and constructed by the City's O&M crews. This small project fund provides a way for City staff to address pressing problems as they arise and to slowly upgrade portions of the existing culvert infrastructure. Another \$55,000 per year is allocated for fish passage improvements.

Equipment and Materials

All City vehicles are tracked and maintained by the O&M department. The Master Fleet List currently contains 79 vehicles. Vehicles are assigned to various departments for the purpose of allocating funding for replacement costs. The City's storm drainage program is currently responsible for the following vehicles:

- A ditchmaster used for clearing roadside ditches throughout the more rural areas of the City,
- A backhoe used for various maintenance activities, including stormwater facility repair,
- A trailer for hauling materials and equipment,
- A new vector truck for cleaning catch basins and storm drain lines, and
- Rental of mowers, excavators, and other equipment as needed to conduct maintenance activities.

Maintenance activities related to SSWM also often utilize vehicles assigned to other departments. In particular, Street sweeping vehicles and vehicles used for stormwater capital project construction are assigned to the Roads department, though they are an integral part of the SSWM Program. In addition, nine passenger vehicles are assigned to engineering department staff, some of whom spend nearly all their time on SSWM Program activities.

Materials needed for culvert replacements and small capital projects are purchased through the capital projects fund, which is part of the Engineering Department budget.

Professional Services

The City has hired professional consulting services to conduct a number of activities related to the SSWM Program. Of most significance, the public education and involvement program is run almost entirely by a consultant. Consultants are also developing a groundwater monitoring study, water quality and flow monitoring study, and evaluating the City's SSWM Program and stormwater utility policies. The City also retains outside engineering firms to design larger capital projects, such as the Fort Ward Storm Sewer project, and has on-call contracts with firms for small tasks relating to engineering, surveying, geotechnical investigation, and material testing. Professional consulting services play a major part in the City's 2006 SSWM Program expenditures, as the consulting fees for the Water Quality and Groundwater Monitoring studies totaled approximately \$380,000.

Annual Budget

The majority of the funding for the SSWM Program comes from the stormwater utility charged to all residents. In 2006, the stormwater utility rate was raised to \$7 per month for single family residences and \$7 per 3,000 square feet of impervious surface for other land uses. Discounts are given to low income seniors and disabled citizens, consistent with the policies for the water and sewer utilities. Fee reductions are also given for non-single family land uses that have non-paved compacted land (i.e. gravel or dirt) or private stormwater retention systems.

The City's 2006 SSWM Program activities total \$2,797,800¹. Of that amount, \$1,063,000 will be collected from stormwater utility fees, \$1,835,000 will be transferred from the general fund, and \$198,640 is from the Department of Ecology grant to fund the Water Quality Monitoring study. All money allotted to the SSWM Program is used to fund the activities mentioned previously, including development review, infrastructure maintenance, public outreach, and capital projects. Funds are not separated to note which activities are funded by stormwater utility fees and which are funded by the general fund transfer.

Some activities related to stormwater are not directly funded by the SSWM Program budget. O&M activities, such as street sweeping, are funded by the Roads Fund, and much of the development review funded by the Building and Development Services Fund relates to stormwater compliance issues. These funding differences will be addressed in Technical Memorandums #3 and #4.

Summary of Existing Program and Opportunities for Enhancement

In reviewing the City's existing SSWM Program, it is clear that the City has made great strides to come into compliance with many of the aspects of the Phase II Permit. Other areas provide opportunities for enhancement. Initial observations are discussed below. Technical Memorandums #2 and #3 will conduct a detailed comparison of the City's existing SSWM Program with each of the requirements of the Phase II Permit.

Major Program Strengths

The City's Public Education and Outreach program is a clear strength. The outreach targets specific audiences with appropriate messages and provides a wide range of opportunities for the public to hear about how their actions affect surface water quality. The consultant has also been tasked with measuring the results of their outreach activities, and their annual report provides the record keeping that will be required under the Phase II Permit.

¹ The total 2006 SSWM Program budget is \$2,697,300 which is slightly lower than the actual program expenditure. This reflects the fact that some SSWM Program activities are paid for by other departments. For example, development plan review and construction site inspection are important elements of the SSWM Program that are funded by the Building and Development Services Fund. The gap analysis in Technical Memorandum #3 will more closely quantify the difference between the budgeted and actual programs.

Another program element that correlates well with the Phase II Permit requirements is the adoption of design and maintenance standards that are consistent with the 2005 DOE Manual. Development Engineering staff thoroughly reviewed the manual, wrote an ordinance to adopt updated standards, made council presentations, and adopted the new standards in December 2005. The City is now applying the 2005 DOE Manual guidelines to new development projects and has identified areas where more education, review, or inspection is needed to ensure the standards are met.

While the City has not dedicated specific O&M staff for stormwater management, many of the ongoing road maintenance activities, such as street sweeping, ditch clearing, and culvert repair, also involve upkeep of the stormwater infrastructure. The City has also worked to educate O&M crews about proper stormwater management techniques through the development of the Road Maintenance Manual and training for all O&M staff in methods and protocols that protect natural resources. In addition, the construction of the City's new decant facility provides a way for the City to collect, treat, and properly dispose of sediment laden stormwater collected during maintenance activities.

Opportunities for Enhancement

The City of Bainbridge Island has made great strides in developing a SSWM Program that best meets the needs of this island community. However, there are many opportunities to improve or enhance the existing system. In addition, the Phase II Permit identifies specific elements required for the City to have a successful SSWM Program that may require new activities or modifications to existing activities. City staff have also identified local activities that are currently not a part of the program that would help them increase their efficiency or enhance coordination between departments.

Several City staff identified the need for a detailed inventory of stormwater facilities. This would include both public and private detention and treatment facilities, as well as catch basins. The Phase II Permit will require annual inspections of both stormwater facilities and catch basins, but the City does not currently have a way to track which facilities are inspected. In addition, the City does not have records of many of the private facilities, so they cannot provide inspection or enforcement of maintenance standards. The City does have a culvert inventory which is used to track inspections and needed repairs. As such, all culverts are inspected every year and the City has a source of information to identify needed replacements. A similar system for tracking stormwater facilities and catch basins would greatly enhance the program.

Another area of concern expressed by City staff is the lack of an illicit discharge detection and elimination (IDDE) program. The 2005-10 Ordinance includes a short IDDE section, but the City does not have a map of the stormwater system and outfalls to aid in tracking problems. As an island community, Bainbridge Island has a significant number of outfalls, so developing a map could be a

major program task. Once mapped, the City will also need a system in place to identify, track, and enforce corrective actions against those violating the IDDE ordinance.

A final area for improvement is in program tracking and record keeping. The City's O&M department has developed forms to document culvert and stormwater facility inspection, but there is no system for recording the information collected in the field. Field crews do not always have the time to log the information, and office staff are facing increasing requirements to collect and process field data. This requires additional staff time to collect and log the testing results and document other O&M related information.

Next Steps

This technical memorandum is the first in a series of memorandums to analyze the City's stormwater program with respect to upcoming NPDES guidelines. Technical Memorandum #2 outlines the regulatory requirements of the Phase II Permit, including required activities and milestone dates. That memorandum also discusses consequences for non-compliance. Technical Memorandum #3 identifies gaps in the City's existing program compared to regulatory requirements, calculates staff levels and costs for full compliance, and identifies an annual implementation schedule for the next five years. Technical Memorandum #4 reviews funding options to finance needed enhancements.

The series of memorandums will be integrated into a final document report documenting all steps and recommendations from this program analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City's budget process.

Appendices

Appendix A—Bainbridge Island Watersheds Map

Appendix B—Data Request List

Appendix C—Stormwater Questionnaire

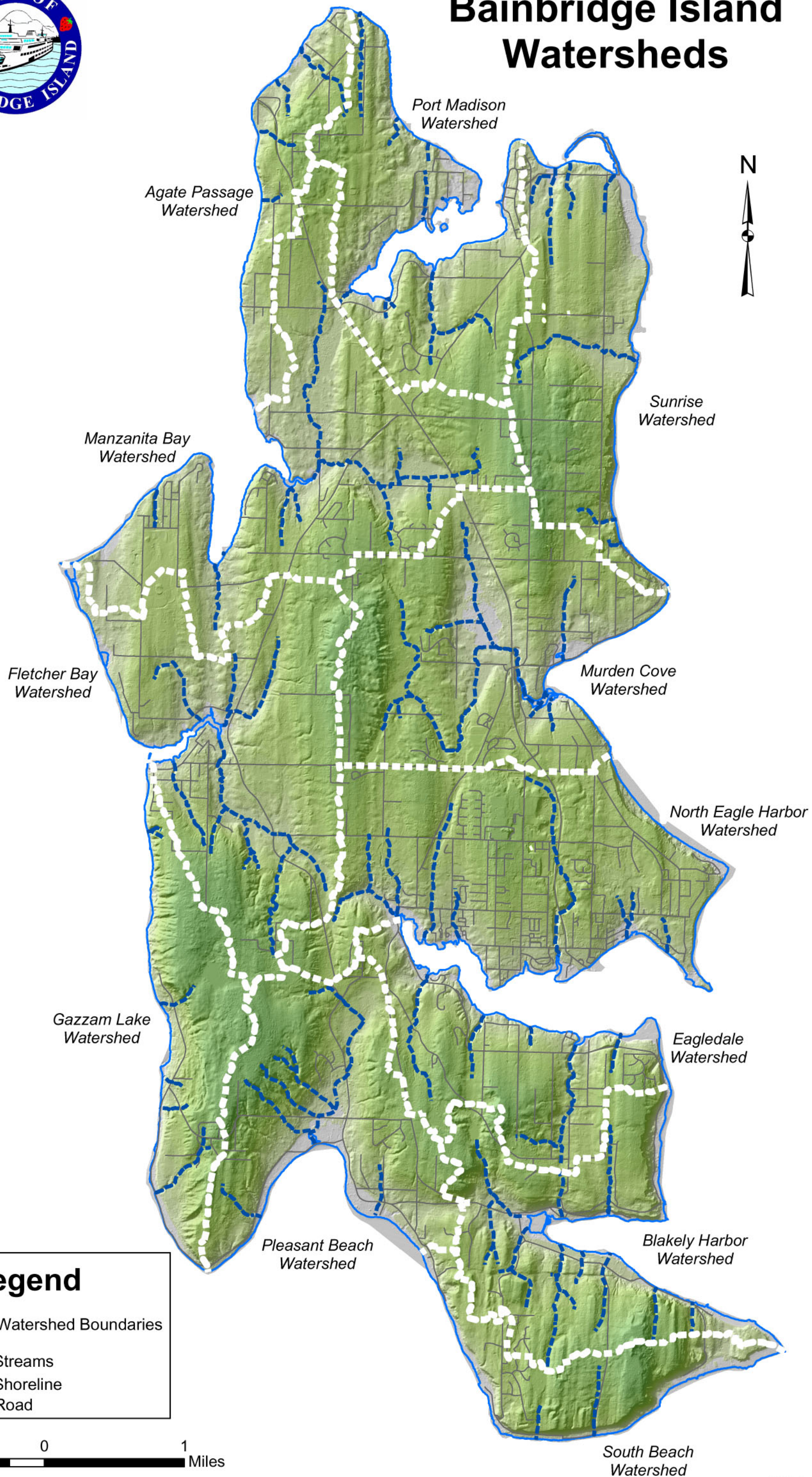
Appendix D—*Summary of Existing Surface and Stormwater Management Program Spreadsheet*

Appendix E—Staffing Summary Organizational Chart

Appendix A—Bainbridge Island
Watersheds Map



Bainbridge Island Watersheds



Appendix B—Data Request List

Memorandum



10230 NE Points Drive
Suite 400
Kirkland, WA 98033
Phone (425) 822-4446
Fax (425) 827-9577

To: Melva Hill, City of Bainbridge Island
From: Joe Simmler and Alissa Maxwell
Copies:
Date: March 23, 2006
Subject: Initial Data Request
Project No.: 30794

The following is a list of initial data requested to assist in performing a regulatory gap analysis and estimation of future utility rates for the City of Bainbridge Island. Data that is available in electronic format is preferable, though hard copies are still very useful, where electronic format is not available.

Stormwater Program Management and Financing Information

- Last 2 to 3 years stormwater budget: (revenues and expenditures by activity)
- Copy of O&M Plan/standards
- Annual O&M staffing levels, equipment rentals/purchases and costs
- Organization chart for departments involved in stormwater
- Salary ranges for stormwater related staff including benefit costs
- List of any current or requested grants or loans
- Copies of stormwater-related ordinances
- Any existing local agreements regarding drainage (i.e., flood control zone districts, etc.)
- Annual City Budgets for 2005 and 2006
- Existing SWM utility rates, revenues, polices, and ordinances
- Permit review fee structure
- Impact fees and/or system development charges

Stormwater Technical Information

- Stormwater Plan (if available) or any Drainage Studies
- Capital Improvement Plan with prioritized list of project and costs, if applicable
- Copy of stormwater design standards
- Summary of public education activities (bulletins, brochures, booths, etc)
- Copies of any state violations, including compliance orders, NPDES permits, etc.
- Groundwater and/or Aquifer Protection Plan
- A map of jurisdictional and watershed boundaries
- Existing and proposed land use and zoning, including GMA areas within the City

Regional Planning (if applicable)

- City's ESA Plan
- WRIA Plan
- Overview of City's involvement in Kitsap Master Builders ESA Design Manual study
- Other local or regional planning documents that outline City commitments related to stormwater management or water quality control

Appendix C—Stormwater Questionnaire

Memorandum



10230 NE Points Drive
Suite 400
Kirkland, WA 98033
Phone (425) 822-4446
Fax (425) 827-9577

To: Melva Hill, City of Bainbridge Island
From: Joe Simmler and Alissa Maxwell
Copies: TBD
Date: March 23, 2006
Subject: Stormwater Questionnaire
Project No.: 30794

Abbreviations

City	City of Bainbridge Island
SWM	Surface and Stormwater Management
BMPs	Best Management Practices
DOE Manual	Ecology's Stormwater Management Manual for Western Washington (2005)
O&M	Operation and Maintenance
UIC	Underground Injection Control

Program Analysis

1. Does the City of perform a self-analysis of their existing SWM Program?
No, not at this point in time
2. Has the City identified any local compliance needs? ***No***
3. Has the City identified any associated costs, space equipment, and funding needs? ***No with the exception of fleet requirements and that does not include additional equipment***
4. Has the City developed a SWM Action Plan/Schedule? ***No with the exception of CIP***
5. Does the City feel any interlocal agreements are needed? ***Unknown, we currently have a couple (school district and Kitsap County)***
6. Has the City identified any local sources of funding? ***Current Stormwater Utility BIMC 13.24 and occasional grants***
7. What elements of the stormwater program seem to be working well? ***All existing program elements have voids in them. I wouldn't say any are "working well".*** What elements have been successfully integrated into the City's "normal" operating procedures?
Development review and inspection, road and facilities maintenance, capital improvements, public education and outreach, public involvement
8. Identify any existing stormwater program problems areas and/or needs (i.e. what is not getting done, what needs to be done better) ***Items not getting done: IDDE, Mapping,***

post construction inspection and monitoring (occasional only), reporting and tracking of spills and dumping, private facility maintenance

9. What elements of the stormwater program pose the most challenge to City Staff? What elements are most disruptive to daily activities? ***Enforcement, spills and illegal dumping and prioritization (too much to do with limited resources)***

Public Education and Involvement

10. Does the City have a stormwater education and outreach strategy? ***Yes***
11. Does the City...
- a. Develop and/or distributed any PIE brochures? ***Yes***
 - b. Do storm drain stenciling? ***Yes***
 - c. Contact the school districts to discuss opportunities to provide water quality educational materials? ***Yes***
 - d. Provide water quality educational materials when requested? ***Occasionally***
 - e. Contact volunteer organizations to discuss opportunities to integrate stormwater into existing education projects? ***Maybe like LID, Islandwood and the schools?***
 - f. Have a stormwater speakers' bureau? ***No***
 - g. Broadcast stormwater public service announcements in the media or distribute news releases? ***Yes, minimal***
 - h. Display stormwater exhibits at community locations? ***Yes***
 - i. Have a stormwater web site? ***Yes, sort of (natural resources homepage and NLP)***
12. Does the City hold public meetings to solicit input on stormwater related issues? ***No***
13. Is there a stakeholder advisory panel related to stormwater? How does the advisory panel provide input to the City? ***No but we do have a watershed council and Natural Resources Team***
14. Does the City have a system (phone number, website, etc) for the public to log stormwater related complaints, including problems with construction site runoff? ***No*** How is the system advertised? ***NA*** How does the City respond to calls from the public? ***Website can take general concerns. By caller requests thru the PW number then to field staff***
15. Does the City pass public complaints related to construction site runoff to field inspectors? ***Yes, mostly me***

Illicit Discharge

15. Does the City have a storm sewer outfall map? ***Just dots on the map but not attached to anything; ie. Not surveyed or GPS***
16. Is there a City ordinance prohibiting illicit discharge on private property or discharge of waste to the public stormwater system? ***Yes in BIMC 15.20 (includes enforcement provisions)*** How is the ordinance enforced? ***Sporadically at best. There is the ability to fine.***

17. Does the City inspect known outfalls or have an alternate method for identifying unauthorized discharges to the public system? **No but the new WQ Monitoring program will provide some.**
18. Does the City have a spill response plan? **I have a draft I've been working on but it's not in place yet**
19. Does the City provide training to educate staff about spills and illicit discharges? **No**

Construction Site Runoff Control

20. Does the City have an ordinance outlining...
 - a. erosion and sediment control requirements for construction sites? **Yes**
 - b. post-construction stormwater runoff (water quality and detention)? **Yes**
21. When were the ordinances last updated? **Effective date 12.5.05**
22. Does the City have a design manual outlining BMPs for stormwater quantity control and water quality treatment? **Yes adopted 2005 DOE manual** When was it adopted/last updated? **12.5.05**
23. Are the design standards for erosion control and post-construction runoff equivalent to the DOE Manual? **same**
24. Does the City review site plans prior to construction to ensure compliance with...
 - a. the erosion control ordinance? **Yes**
 - b. the post-construction runoff ordinance and design manual? **Yes**
25. Does the City inspect all construction sites that are regulated by the erosion control ordinance? **Yes for large projects but lack inspection for SFR practices**
26. Does the City inspect BMPs during construction to ensure compliance? **Yes**
27. How do private developers respond to the City's erosion control and stormwater runoff control guidelines? **Compliant but don't like the new standard** Are BMPs typically designed to meet the standards? **Yes**
28. Does the City provide construction operators and City staff with information on local erosion control and BMP training opportunities? **Occasionally for staff. I did one educational session for builder and real estate in December 1999 "Keep it on site"**
29. Does the City provide or sponsor any such training? **Occasionally**

Operation and Maintenance

30. Does the City have a Municipal Operation and Maintenance (O&M) Plan? **Yes for road work but not one for PW yard** When was it last updated? **Yes created in March 2003**
31. Does the O&M Plan cover...
 - a. equipment washing practices? **Yes**
 - b. dust control? **Yes**
 - c. catch basin cleaning? **Yes**
 - d. street sweeping? **Yes**

- e. deicing and snow removal? **Yes**
- f. waste disposal? **Yes**
- 32. Are O&M practices implemented per the O&M Plan? **As close as we can get with current manpower**
- 33. Which areas of O&M Plan are the hardest to follow? **Permitting requirements, paper tracking, compliance monitoring and training**
- 34. Which areas of the O&M Plan need further definition and/or guidelines to be effective? **Coordination meeting and inspection/ direction assistance**
- 35. Are park and open space O&M practices implemented per the O&M Plan? **No staff to support this item. However Parks is a separate entity**
- 36. What is the City's O&M waste disposal procedure? **As laid out in the decant facilities procedures and Road Maintenance Manual**
- 37. What is the City's street sweeping procedure? **Sweeping is year round, scheduled sweeping is "intercore" (downtown) every Saturday and sporadic for sectors. Try to keep bike paths swept but no actual scheduling due to staffing**
- 38. Does the City anticipate any major upcoming O&M equipment purchases? **Fleet equipment list forwarded**
- 39. Does the City provide O&M training for City employees? **Regional Road Maintenance Training for O&M staff and Erosion Control Training for various staff**

Tracking and Reporting

- 40. Is there a pollution management plan for all municipal facilities? **There isn't an existing document for any of the municipal facilities.**
- 41. Are industrial (stormwater) permit applications submitted as needed? **I believe this is a true statement**
- 42. Who in the City is responsible for NPDES permitting? **Phase II, Melva Hill: WWTP discharge, Lance Newkirk & Bob Earl**
- 43. How does the City track, document, and report regulatory activities to the Department of Ecology? **Haphazardly with various staff responsible. WWTP activities are tracked, documented, and reported as per the NPDES Permit No. WA-002090-7.**

Underground Injection Control Rule

- 44. How many infiltration facilities are publicly owned? **Three known** How many privately owned? **unknown**
- 45. Are publicly owned infiltration facilities located, mapped, and registered? **Located but not mapped or registered**
- 46. Is the area draining to drywells documented by land use? **No**
- 47. Does the City have a risk based strategy for permitting/approving future stormwater infiltration systems (based on soils, groundwater, drinking water wells, etc)? **No however we**

- do have a well head protection plan* Are there design standards for locating and constructing infiltration facilities? *As part of DOE manual*
48. Does the City have an ordinance relating to UIC? When was it last updated? **No** How does the City enforce construction standards for infiltration facilities? *By inspection*
49. Do public systems receive annual maintenance after construction is complete? *We attempt to maintain annually but all work is based on available manpower.*
50. What is the City's pollution prevention plan for public infiltration systems? **None**
51. Has the City identified existing publicly owned infiltration systems in areas of high risk for groundwater degradation? **No**
52. Does the City have a written plan for the management and/or replacement strategy that will reduce pollutant loading to groundwater in high-risk areas? (If so, please provide a copy of the management plan.) **No**
53. If applicable, which of the following elements are included in the replacement strategy: monitoring, effectiveness assessment, report preparation, enhanced O&M, source control, spill control/response, opportunistic retrofits? **NA**
54. Does the City provide UIC training for staff? **No**
55. Does the City participate in any regional interlocal agreements relating to UIC? **No**
56. Does the City report to the Department of Ecology regularly concerning UIC? **No**

Environmental Species Act

57. Does the City assess stormwater impacts when making land use decisions? **Yes**
58. What (if any) policies are in place to reduce stormwater runoff, reduce impervious surfaces, and retain native vegetation? *Vegetation Management and LID*
59. Does the City participate in interagency surface water quality strategy coordination? **Yes, SSWM advisory with KC and other local cities.**

Other Water Quality/TMDL Issues

60. Have any TMDLs been identified for receiving waters in the City? If so, are stormwater outfalls allocated a load in the TMDL? **No, NA**
61. Does the City actively participate in the development of TMDLs for receiving waters? *We tried to with the Invest program but withdrew due to lack of staff/time.*
62. Does the City monitor the outfall quality of discharges to impaired waters? **NA**
63. Is there a local or regional program to monitor baseline conditions and evaluate surface water program effectiveness? *Starting a new program*

Please identify any other stormwater programs, issues, needs, or concerns that you feel should be considered in developing a SWM Plan for the City.

Appendix D—Summary of Existing
Stormwater Management Program

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
SWMP Element #1 - Public Education and Outreach										
1.1 Outreach to Two Target Audiences	The City has hired a consultant to implement the public education and outreach activities required by the Phase II permit. The 2005 program focused on educating the public about pollution sources, low-impact development (LID), and daily behaviors that influence water quality. Example activities in recent years have included: An educational brochure mailed to every City resident, Two demonstration rain gardens, Workshops on LID and septic system maintenance, Booths at community events, Presentations to schools, Storm drain stenciling, and Homeowners packets distributed through a local real estate office. The 2005 program reached over 2,000 people with face-to-face contact and thousands more through mailers, advertisements, and brochures. The City funded 650 billable consultant hours, over 200 volunteer hours, and outreach materials. The 2006 program will continue to conduct public education and outreach activities. An additional focus will be placed on educating restaurants and local business owners on ways their daily behaviors impact to water quality and natural resources.		Public Works - Engineering Outside Consultant	Jalyn Cummings Melva Hill	0.06	100	\$4,300	\$35,000		The existing public outreach program targets more than the required two audiences. There may be opportunities over the course of the permit cycle to spread the public outreach budget to address some of the required training for City staff (Elements 3.6 and 4.6) or to set up a meeting to obtain input on the City's stormwater program (Element 2.1)
1.2 Measure Results of the Educational Activities	With additional funding from the DOE, the public outreach consultant has conducted surveys to evaluate behavior changes resulting from outreach activities. They are exploring methods for measuring behavior change among restaurants and businesses contacted during 2006.		PW - Engineering Outside Consultant	Jalyn Cummings	See 1.1	See 1.1	See 1.1	See 1.1		The previous use of surveys is a good method to measure changes in targeted behaviors.
1.3 Maintain Records	The public outreach consultant submits quarterly and annual reports of public education activities.		PW - Engineering Outside Consultant	Jalyn Cummings	See 1.1	See 1.1	See 1.1	See 1.1		The current annual reports provided detailed documentation of the public education and outreach activities. These reports should be used as supporting documents in future reporting to DOE.
Public Education and Outreach TOTAL					0.06	100	\$4,300	\$35,000		
SWMP Element #2 - Public Involvement and Participation										
2.1 Input to SWMP	No public input mechanism on stormwater management program; The City works with the Watershed Council and has formed an internal Natural Resources Team that brings together members of various City departments to discuss and plan for protection of existing natural resources; Public meetings related to other topics are published on the City's website.		PW - Engineering	None assigned	0.00	0	\$0	\$0		The City will need to create a formal way to obtain citizen input on the SWMP.
2.2 Availability of Stormwater Program Documents	The city has information on the website relating to water resources: http://www.ci.bainbridge-isl.wa.us/default.asp?ID=912 Citizens may request access to stormwater related documents at City Hall.		PW - Administration	David McCoy	0.00	0	\$0	\$0		Once formally documented (Element 6.2), the City will need to post the SWMP on the City website.
Public Involvement TOTAL					0.00	0	\$0	\$0		

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
SWMP Element #3 - Illicit Discharge Detection and Elimination										
3.1 Storm Sewer System Map	Some outfalls have been mapped, but not tied electronically to GIS system. City has collected air photo data to assist in establishing topography and drainage basins.		PW - Engineering, Survey IT - GIS	Jalyn Cummings Mike Sprouffske Summer Intern	0.12	200	\$2,400	\$0		Stormwater system mapping is an area that needs attention during the next permit cycle.
3.2 Illicit Discharge Ordinance	The city has an ordinance prohibiting illicit discharge including "concrete, concrete by-products, vehicle fluids, paint, chemicals, or other polluting matter...." Enforcement actions are detailed in BIMC 1.26.	BIMC 15.20 BIMC 1.26	PW - Engineering PCD - Long-range Planning	Melva Hill Kathy Cook	0.00	Included with 4.1	Included with 4.1	\$0		The IDDE ordinance is fairly brief and should be reviewed during the next permit cycle to ensure compliance with all conditions in the Phase II permit. More detail may be needed regarding enforcement actions. Perhaps modeling after section 13.14 of the BIMC.
3.3 Detection and Elimination Program	No formal program is in place; City staff, including the Harbor Master, respond to illegal dumping complaints and spills identified by the public or field crews. However, there is not currently a method or procedure to locate problem areas, trace sources of discharge, or track corrective actions.		PW - Engineering	Melva Hill Jalyn Cummings Tami Allen	0.17	286	\$13,618	\$0		This is an area where City staff would like to see great improvement in the current program. Developing and implementing an IDDE program will be an important focus for the next permit cycle. The WQ monitoring program (Element 11.4) is expected to help identify some illicit discharge locations.
3.4 Public Education and Spill Reporting	This is an area of focus for the 2006 public outreach and education program. No hotline phone number has been established, but City staff use Green Sheets to track citizen requests and City response actions.		Public Works - Engineering Outside Consultant	Melva Hill	0.17	286	\$13,618	\$0		Outreach to businesses and restaurants is the focus of the 2006 public education campaign.
3.5 Program Evaluation and Tracking	No program in place. Program evaluation and tracking will be requirements in the Phase II permit.		PW - Engineering, Administration	No program in place	0.00	0	\$0	\$0		Tracking and reporting IDDE incidents and follow-up actions will be required with the Phase II permit. The City's Green Sheets may provide some or most of the needed data.
3.6 Staff Training	No program in place.		PW - Engineering	No program in place	0.00	0	\$0	\$0		IDDE training has been identified as a program need. Focused training will be needed for staff responsible for addressing IDDE issues and complaints. More general training will be needed for all O&M staff, as they are typically the first to notice an illicit discharge or spill.
Illicit Discharge TOTAL					0.45	772	\$29,636	\$0		

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites										
4.1 Stormwater Runoff Control Ordinance	The City's ordinance was updated effective December 5, 2005. The ordinance covers both erosion and sediment control as well as post-construction runoff control and BMPs. The ordinance adopted the 2005 DOE manual as the standard for stormwater control and BMP selection and design.	BIMC 15.20	PW - Engineering PCD - Long-range Planning	Melva Hill Jalyn Cummings Kathy Cook City Attorney	0.04	68	\$3,421	\$0		The current ordinance likely meets Phase II permit conditions. However, the City design standards need to be modified to reflect the change.
4.2 Site Plan Review and Permitting	The Current Planning department reviews planning applications and includes conditions of approval relating to stormwater compliance as supplied by the Engineering department. The Engineering department reviews all construction plans for compliance with design standards. Development applications typically include BMPs designed to meet the 2005 Manual. Historically, City staff were assigned to development projects to ensure compliance with design standards. Now, the design consultant is responsible for construction inspection. While BMPs are generally installed per plan, erosion control remains an area of concern and City Staff have found that violations are occasionally not corrected in a timely manner. The new ordinance includes stronger language (particularly concerning wet weather plans), which should help with enforcement when problems occur. Individual (single home) construction sites are required to submit a drainage plan, but guidance is lacking concerning erosion control measures.	BIMC 15.20 BIMC 18.105	PW - Engineering PCD - Current Planning	Ross Hathaway Development Engineering Staff Current Planning Staff	1.91	3,272	\$142,521	\$0		The City's plan review procedures are adequate to address stormwater needs. Most developers are familiar with the requirements and accept the stormwater conditions. Applications are occasionally appealed for stormwater issues, but generally because neighbors request more stringent requirements on a particular site. A more formalized system is needed to endure proper inspection of sites during construction. Individual lot developments need more guidance concerning erosion control practices.
4.3 Long Term Operation and Maintenance	The stormwater control ordinance adopted the 2005 DOE manual, including maintenance standards. Inspection of facilities is sporadic, without a set schedule. Approximately 10-15% of all facilities are inspected in a given year, typically by summer interns. Facilities are maintained under element 5.2.	BIMC 15.21	PW - Engineering, O&M	Melva Hill Summer Intern	0.16	270	\$8,919	\$0		Scheduled inspections often get set aside, so that crews can attend to more urgent needs. Long term maintenance of approximately 10 older facilities is hindered by access or easement issues. As-built plans are not readily available to direct crews in repairing damaged structures.
4.4 Maintenance Inspection Records	The O&M department has inspection sheets that are filled out when facilities and/or culverts are inspected. All stormwater facilities are numbered.		PW - O&M	John Inch	0.05	90	\$4,658	\$0		This is an area of need identified by City Staff. The City currently documents inspection activities, but needs a way to process/file/track the information.
4.5 NOI for Construction Activity	The Current Planning department includes conditions requiring developers to obtain the necessary permits from DOE. However, the condition may not be reaching all projects that meet the one acre or more threshold.		PCD - Current Planning	Current Planning Staff	0.02	30	\$1,200	\$0		Planning staff need additional training to raise awareness and ensure that the proper condition is applied to all projects that disturb one acre or more. City may also need to provide web or counter access to the NOI application.
4.6 Staff Training	Two engineering staff members attended 2005 Manual training offered by the DOE. Additional staff training on the 2005 DOE manual requirements is through informal information sessions. Three City Staff members have been certified in erosion and sediment control. In 1999, the City sponsored a training session for builders focused on retaining stormwater on-site. The Engineering department has provided regulatory information at Planning Department staff meetings, but no formal training has been conducted.		PW - Engineering PCD - Current Planning	Ross Hathaway Melva Hill	0.00	No dedicated hours	No dedicated hours	\$3,200		The Engineering department needs training on the requirements of the 2005 manual, which has been adopted as the City's new standards. Planning staff would like training on the overall Phase II requirements and the NOI for construction activity.

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
Controlling Site Runoff TOTAL										
					2.18	3,730	\$160,719	\$3,200		
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations										
5.1 Adopt Maintenance Standards	The City's existing road maintenance manual was adopted in 2003. It identifies over 30 BMPs for routine road maintenance practices and over 20 additional BMPs for maintenance in critical or sensitive areas. The manual also outlines eight outcome categories focused on reducing erosion and sediment transport, protecting habitat, and limiting contaminants introduced into the system. The 2005 DOE manual (Element 4.1) also outlines maintenance standards for stormwater facilities.	BIMC 15.21	PW - Engineering, O&M	Melva Hill John Inch	0.00	Included in 4.1	Included in 4.1	\$0		The City's current standards are in line with the NPDES guidelines.
5.2 Annual Inspections of Water Quality and Flow Control Facilities	Stormwater facilities are inspected by the summer intern as time permits. Typically 10-15% of facilities get inspected in a given year, though there is not a formal program in place to track inspection progress. Roads crews schedule or perform facility maintenance as time allows or when problems are reported.	BIMC 15.21	PW - Engineering, O&M	Melva Hill John Inch O&M Crews Survey Support Summer Intern	1.38	2,355	\$100,041	\$0		This is an area of need identified by City Staff. Additional staff and coordination are needed to inventory public and private facilities and develop an annual inspection cycle and tracking program.
5.3 Spot Checks after Storm Events	Historically, city staff have inspected chronic problem areas after large storm events. However, those problem areas have been corrected through CIP projects. Currently, O&M Crews conduct a sweep of major roads after storm events. Any stormwater problems are identified at that time.		PW - Engineering, O&M	Melva Hill John Inch O&M Crews	0.00	No dedicated hours	No dedicated hours	\$0		The current system identifies pressing problems and helps avoid major system failures. However, a more focused program may be needed to ensure that stormwater facilities are checked after major events.
5.4 Catch Basin Inspection	Catch basins are inspected occasionally along with the stormwater facilities and O&M crews have time set aside to inspect and vector catch basins. Culverts are inspected annually and progress is tracked by the O&M department. Miscellaneous culvert repairs are funded through the capital projects budget and installed by O&M Crews. The City's new decant facility will allow for proper disposal of decant water and other waste associated with stormwater maintenance practices.	BIMC 15.21	PW - Engineering, O&M	John Inch O&M Crews	0.85	1,460	\$66,105	\$0		Catch basin inspection cycles for the downtown area seem adequate. However, the inspections need to extend to the outlying areas. This is a challenge for O&M crews, as they are not always kept up to speed as new systems are installed.
5.5 Road Maintenance	Road maintenance activities follow the City's Road Maintenance manual, (Element 5.1). The city's current stormwater-related road maintenance activities include ditch cleaning, vegetation control, and extensive street sweeping. O&M crews also conduct maintenance of the storm drainage infrastructure (Element 4.3 and 5.4). Additional crew hours are spent on street repair, sign installation, and small capital projects. However, those hours are not included in the stormwater FTE shown here.		PW - O&M	John Inch O&M Crews	1.71	2,930	\$132,052	\$0		Road maintenance poses an interesting challenge because the program must cover both the urbanized downtown core as well as the rural areas of the island that previously were under County jurisdiction. This requires O&M crews to cover widespread areas with diverse facilities and different maintenance protocols.
5.6 Non-Roadway Property Maintenance	Some non-roadway properties are maintained by the public works operations and maintenance staff. In those operations, BMPs and the maintenance standards are used as applicable. Building exteriors are generally maintained by the facilities department, which does not have a maintenance manual to outline activities.		PW - O&M Facilities	John Inch O&M Crews Facilities Crews	0.00	No dedicated hours for stormwater	No dedicated hours for stormwater	\$0		

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
5.7 Staff Training	Nearly all of the O&M staff attended a maintenance workshop in 2005 offered by the University of Washington - <i>Classroom Instruction to E.S.A and Outcome-Based Road Maintenance for Field Crews</i> . The course is part of the Regional Road Maintenance ESA program which covers processes for erosion and sediment control; protection of disturbed areas from storm water runoff; stabilization of disturbed areas; methods for minimizing runoff velocities; retention of sediment on the site, and inspection and maintenance of BMPs. Training is still needed for the new decant facility.		PW - O&M	John Inch O&M Crews Hours shown assume 8 people attended a 1 day training in 2005	0.04	64	\$3,328	\$1,400		The program attended in 2005 covered major stormwater maintenance practices to meet regulatory guidelines. While the City recognizes the need for ongoing training, it is often challenging to find appropriate programs that have space available. Preference would be to have training for O&M Supervisor, Crew Chief and 2 rotating crew members each year.
5.8 SWPPP for Maintenance Yards	An O&M manual has been developed for the decant facility to outline proper procedures for disposal of waste and proper cleaning of the site. It is the responsibility of all site users to follow the O&M guidelines for the decant facility. The City does not have a SWPPP for the maintenance storage yard.		PW - Engineering, O&M	John Inch Melva Hill	0.00	No dedicated hours	No dedicated hours	\$0		The City may need to develop a SWPPP for the maintenance yard.
5.9 Record Keeping	Work orders are currently used to track maintenance actions - ditch clearing, stormwater facility maintenance, etc. The City roads crews perform work under work orders, which can be used to track maintenance actions like ditch clearing, facility cleaning, etc. However, there is not a program in place to track inspection frequency or a plan future work.	BIMC 15.21	PW - Engineering, O&M	John Inch	0.05	90	\$4,658	\$0		Record keeping and tracking of activities were identified by City staff as areas that need further attention. The required data collection (soil sampling, waste profiling, volumes of material in and out of the decant facility, waste disposal and tracking, etc) is overwhelming for existing staff.
Operation and Maintenance TOTAL					4.03	6,899	\$306,184	\$1,400		
SWMP Element #6 - Program Implementation (Annual Program/Plan)										
6.1 SWMP Implementation	The City's SWMP activities are documented above. In some areas, great progress has been made toward meeting the terms of the NPDES Phase II permit.		All Listed Lead by PW - Engineering		Compliance is achieved by conducting the activities outlined in Tasks 1 through 5 above. No hours or FTE counted here.		\$0	\$0		Over the 5-year permit cycle, the City will need to show steady progress toward full implementation of the program elements listed above.
6.2 SWMP Documentation	The City has not outlined all SWMP activities in one formal document. However many of the activities are documented in scopes of work, Green Sheets, work orders, the BIMC, the Road Maintenance Manual, and other documents.		PW - Engineering, Administration		Compliance is achieved through timely submittals of annual reports (Task 9.1). No hours or FTE counted here.		\$0	\$0		The City will need to formally document the SWMP plan in annual reports to DOE.
6.3 Program Tracking	This project is the initial step in program tracking. Current SWMP activities are conducted by a number of different departments, making it difficult to identify the actual cost to implement each program element.		All Listed Lead by PW - Administration		Compliance is achieved through timely submittals of annual reports (Task 9.1). No hours or FTE counted here.		\$0	\$0		Program tracking is an ongoing activity that will need to continue throughout the 5-year cycle of the permit.
6.4 MEP and AKART	The existing elements of the SWMP have been developed to reduce pollutants in the City's stormwater system to the Maximum Extent Practicable. Future program elements will continue to take this approach.		PW - Engineering		No additional FTE needed.	No additional hours needed.	\$0	\$0		By implementing the activities outlined in Elements 1 through 5, it is assumed that the City is meeting the MEP and AKART standards.
SWMP Implementation TOTAL					0.00	0	\$0	\$0		

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
SWMP Element #7 - Total Maximum Daily Load Allocations										
7.1 Applicable TMDLs in Appendix 2	Not applicable		N/A		0.00	0	\$0	\$0		Not applicable.
7.2 TMDLs not listed in Appendix 2	Not applicable		N/A		0.00	0	\$0	\$0		Not applicable.
7.3 TMDLs Approved during the Permit Cycle	Not applicable		N/A		0.00	0	\$0	\$0		Not applicable.
TMDL TOTAL					0.00	0	\$0	\$0		
SWMP Element #8 - Monitoring										
8.1 Existing Monitoring	The City has not previously conducted any water quality monitoring. DOE recently provided the City with a grant to fund the development of a water quality monitoring program. The program is listed as Element 11.4.		PW - Engineering	Jalyn Cummings	See 11.4	See 11.4	See 11.4	See 11.4		The City's proposed water quality monitoring program exceeds the requirements of the Phase II permit.
8.2 Stormwater Monitoring	Identifying sites for permanent flow-weighted composite sampling is a requirement of the next permit cycle.		PW - Engineering	Melva Hill	0.00	0	\$0	\$0		New activity required by the Phase II permit.
8.3 SWMP Effectiveness Monitoring	The City has not conducted any formal studies to evaluate the effectiveness of the SWMP. This is a requirement in the next permit cycle.		PW - Engineering	Melva Hill	0.00	0	\$0	\$0		New activity required by the Phase II permit.
8.4 Runoff BMP Monitoring	BMP effectiveness monitoring does not apply to cities with a population less than 25,000.		PW - Engineering	N/A	0.00	0	\$0	\$0		This item is not applicable.
8.5 Annual Reporting	Annual reporting of monitoring progress will be a requirement of the Phase II permit.		PW - Engineering, Administration	Melva Hill, David McCoy	0.00	0	\$0	\$0		New activity required by the Phase II permit.
Monitoring TOTAL					0.00	0	\$0	\$0		
SWMP Element #9 - Reporting										
9.1 Annual Reports	No current activities. Submitting annual reports to DOE will be a requirement of the Phase II permit.		PW - Engineering, Administration	Melva Hill, David McCoy	0.00	0	\$0	\$0		New activity required by the Phase II permit.
9.2 Ongoing Tracking	City currently uses Green Sheets to track citizen requests and City response actions. The City is looking at methods to improve the data collection data for program tracking and annual reports. One mechanism may be the use of MS Project or another software program to track the progress of program elements against a target schedule.		PW - Engineering, O&M, Administration	Ross Hathaway Lance Newkirk All PW Staff with stormwater related responsibilities	0.21	358	\$17,912	\$0		New activity required by the Phase II permit.
9.3 Maintaining Records	No current activities. Maintaining records for five years will be a requirement in the Phase II permit.		PW - Administration	Administration	0.00	No dedicated hours	No dedicated hours	\$0		New activity required by the Phase II permit.
9.4 Public Access	No formal program is in place. Currently, citizens may request access to stormwater related documents at City Hall. The Phase II permit will require information be posted on the City's website.		PW - Administration	David McCoy	0.00	No dedicated hours	No dedicated hours	\$0		New activity required by the Phase II permit.
Reporting TOTAL					0.21	358	\$17,912	\$0		

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
SWMP Element #10 - Additional Regulations										
10.1 Underground Injection Control Rule	The City has only identified 4-6 facilities that would be regulated by new UIC guidelines. As such, the UIC rule is unlikely to play a major role in shaping the City's stormwater program. However, compliance is still required.		PW - Engineering	Melva Hill	0.00	0	\$0	\$0		City likely has too few facilities to require dedicated UIC program at this point in time. Compliance activities will need to be incorporated into overall surface water program.
10.2 Puget Sound Water Quality Management	The city would like to comply with the 13 program elements of the Puget Sound Water Quality Conservation and Recovery Plan, though no formal plan has been put in place. Many elements overlap with the NPDES Phase II requirements including: Stormwater Controls for New Development and Redevelopment, Stormwater Site Plan Review, Inspection of Construction Sites, Maintenance of Permanent Facilities, Source Control, Illicit Discharges and Water Quality, Public Education and Involvement, Low Impact Development Practices, Monitoring, and Schedule for Implementation	2005-2007 Puget Sound Water Quality Conservation and Recovery Plan	PW - Engineering	Melva Hill Jalyn Cummings	0.00	0	\$0	\$0		Many of the 13 elements of the PSWQ plan are covered by the NPDES Phase II activities. Additional activities may be needed for: Identifying and Ranking Problems, Watershed or Basin Planning, and Adequate Local Funding.
10.3 Environmental Species Act	The City does not have a formal plan to address ESA issues. However, the City's Critical Areas ordinance does address the need to retain native vegetation around waterways. In addition, stormwater impacts are considered when making land use decisions and other City policies encourage the use of low impact development and native vegetation retention.	BIMC 16.20	PCD - Long-range Planning		0.00	0	\$0	\$0		Critical areas ordinance was updated in 2005.
10.34 WRIA	The City is no longer involved in WRIA activities.		N/A		0.00	0	\$0	\$0		
Additional Regulations TOTAL					0.00	0	\$0	\$0		
SWMP Element #11 - Local Stormwater Activities										
11.1 Professional Services	Engineering department uses on-call contracts to hire outside consultants as the needs arise throughout the year. Typical services include engineering, geotechnical, survey, and material testing. The 2006 stormwater budget also includes \$380K to hire outside consultants to conduct the water quality monitoring and groundwater studies. City's Professional Services budget for 2006 totals \$470,802. Of that, \$35,000 are included in Element 1.1. The remainder is shown here.		PW - Engineering	Ross Hathaway Engineering Staff	0.00	0	\$0	\$435,802		The expense dollars shown are a line item in the City's 2006 Storm Water Management Fund budget (\$470, 802) minus the \$35K for public outreach already accounted for in Element 1.1.
11.2 Street and Stormwater Maintenance (Decant) Facility	The new decant facility opened on April 19, 2006. The facility accepts and treats waste collected during street sweeping, catch basin, ditch and detention pond cleaning.	BIMC 15.21	PW - O&M	John Inch Laychin Foo	0.00	0	\$0	\$0		The cost of operating the decant facility (including hauling waste material) should be tracked over time to understand the impact on the maintenance budget.

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
11.3 Water Quality Monitoring Study	The City has hired a consultant to design a water quality and flow monitoring program. The study aims to determine baseline conditions, identify water quality and water flow problems, and define thresholds for initiation of management responses. The project includes a 1-year pilot program that will test the long term monitoring plan. The project will be reviewed by the City, Ecology, a technical advisory committee, and other interested parties before a long term monitoring plan is developed.		PW - Engineering	Jalyn Cummings Tami Allen Peter Best	0.09	150	\$6,450	\$98,295	Department of Ecology Grant (75%) and City Match (25%) Dollars shown are for City Contribution	Consultant fees are included in Element 11.1. Dollars shown here reflect the City's funding match for the project. The City's match purchased water quality monitoring equipment, including a GPS unit, lab equipment, and flow monitoring equipment. This equipment can be utilized for future stormwater related activities.
11.4 Groundwater Monitoring Study	The City is developing a groundwater monitoring program that includes well monitoring, public outreach (including volunteer training) and database management. USGS may also contribute funds to develop a computer model of the City's groundwater resources.		PW - Engineering	Jalyn Cummings	0.09	150	\$6,450	\$0	Most work performed by outside consultant under Element 11.1	Consultant fees are included in Element 11.1. Equipment and database management tools developed with the Water Quality Monitoring program (see above) will also be of use to the groundwater monitoring program.
11.5 Natural Resources Team	The City's Natural Resources Team meets monthly to discuss a wide variety of issues related to protection and enhancement of natural systems. The team consists of 10 people representing a wide range of City departments. Hours listed assume 10 people meeting 2 hours per month.		PW - Engineering	Staff representatives from a number of departments.	0.14	240	\$11,040	\$0		The NRT discusses a wide range of topics, though many of them relate back to stormwater issues.
Local Stormwater Activities TOTAL					0.32	540	\$23,940	\$534,097		
SWMP Element #12 - Program Overhead										
12.1A Program Overhead	The stormwater budget pays for a portion of the City's overhead costs, including operating leases, insurance, utilities, and repair and maintenance.		Finance	N/A	0.00	0	\$0	\$329,676		These costs are listed under "Supplies" and "Other Services and Charges" in the City's 2006 Storm Water Management Fund budget.
12.1B Executive and Finance Support	The stormwater budget pays for 0.5 FTE in support from the Executive and Finance departments. This FTE is divided among 12 city staff members to cover payroll, billing, management of the stormwater utility, and other operational needs that do not relate specifically to NPDES Program Activities.		Executive and Finance	N/A	0.50	855	\$39,330	\$0		0.5 FTE is divided among 12 staff members, rather than a single administrative support person for the SSWM program.
12.1C Miscellaneous Public Works Transfers	The 2006 Storm Water Management Fund budget identifies \$114,017 for intergovernmental expenditures. Of that, \$52,017 miscellaneous intergovernmental transfers from the public works budget.		Finance	N/A	0.00	0	\$0	\$52,017		
12.2 Utility Overhead	The 2006 Storm Water Management Fund budget identifies \$114,017 for intergovernmental expenditures. Of that, \$62,000 is stormwater utility overhead.		Finance	N/A	0.00	0	\$0	\$62,000		The future utility rate structure and policies will affect this overhead cost in future years.
12.3 Debt Service Cost	The 2006 Storm Water Management Fund budget estimated \$64,000 in debt service cost. Actual 2006 debt service cost (as estimated by FCSG) is \$104,575.		Finance	N/A	0.00	0	\$0	\$104,575		Debt service cost was greatly underestimated in the City's 2006 budget.
Program Overhead TOTAL					0.50	855	\$39,330	\$548,268		
SWMP Element #13 - Capital Projects and Equipment										

CITY OF BAINBRIDGE ISLAND
SUMMARY OF EXISTING SURFACE AND STORMWATER MANAGEMENT PROGRAM

Stormwater Program Element	Current Stormwater Activities	Legal Authority/ Ordinances	Responsibility		Annual Level of Effort		Annual Level of Funding			Comments/Need for Enhancement
			Lead Department	Manager and Assigned Staff	FTE	Hours	Labor (w/benefits)	Expense	Source(s) of Revenue	
13.1 Capital Projects	The City's Capital Facilities Plan is updated on an annual basis. The current plan identifies 13 drainage projects with a total budget of \$2.7M to be constructed over the next 6 years (2006-2011). The budget includes funding for the Annual Drainage (\$110K) and Fish Passage (\$55K) programs to allow City Staff to upgrade existing facilities.	2006 Capital Facilities Plan Update December 14, 2005	PW - Engineering, O&M	Laychin Foo Engineering Staff in Development and Capital Projects Survey Support	0.00	0	\$0	\$790,033		Project dollars shown are from the City's 2006 Storm Water Management Fund budget. 2006 projects include: Decant Facility Construction, Rose Loop Ravine Crossing, the Annual Fish Passage and Drainage programs, and Vincit Road Slope Stabilization. (Note: The Rockaway Beach Culvert was not paid for by SSWM Program.)
13.2 CIP Engineering	Staff time spent on Capital Projects: Small projects are implemented in the field by O&M staff with engineering staff guidance; mid-sized projects are surveyed and designed by City staff and constructed by City O&M crews; larger projects are designed by consultants and put out to bid by private contractors. Each type of project takes a different amount of engineering staff time to either design the project, manage the consultant, or direct O&M crews during construction.		PW - Engineering, O&M	Laychin Foo Engineering Staff in Development and Capital Projects Survey Support	1.69	2,884	\$135,384	\$0		By using a variety of methods to implement capital projects (small projects by City staff, large projects by outside consultants), the City is able to efficiently use capital project funding.
13.3 Long Term System Replacement	The City currently does not plan for long term replacement of the stormwater infrastructure. Culverts and storm drainage systems are upgraded as problems occur (See 11.1), but the life cycle of the infrastructure elements have not been assessed.		PW - Engineering, O&M	None	See 11.1	See 11.1	See 11.1	See 11.1		The current system addresses problems as they arise, but does not plan for future needs. Existing underground tanks, for example, will need to be replaced as they reach the end of their life cycle.
13.4 Equipment, Materials, and Supplies	The City has a master fleet list, identifying replacement years and costs for all vehicles. A new vector truck was purchased in 2005. The next storm drainage related replacement purchase is a new ditchmaster scheduled in 2010. The storm drain budget incurs \$3,970 monthly in rental rates for mowers, excavators, etc. and pays for fuel and other miscellaneous tools.		PW - O&M	Lance Newkirk John Inch	0.00	0	\$0	\$168,500		Long term replacement costs should be accounted for in the overall program funding. Dollars listed are from the City's 2006 Storm Water Management Fund budget.
Capital Projects and Equipment TOTAL					1.69	2,884	\$135,384	\$958,533		
TOTAL Existing Program Activities (All Elements)					9.44	16,138	\$717,400	\$2,080,500		
									Grand Total:	9.4 FTE and \$2,797,900

Notes:

Activities are based on the NPDES State Waste Discharge General Permit for Discharges from Small MS4s in Western Washington, Draft Permit issued in February 2006. Actual activities may vary based on the final permit, expected to be issued in December 2006.

Activities in Program Elements 11 and 12 are non-regulatory SWM management, planning, administration, budgeting/funding, and staffing activities and costs currently included in the City's SWM program. These activities are not required by the

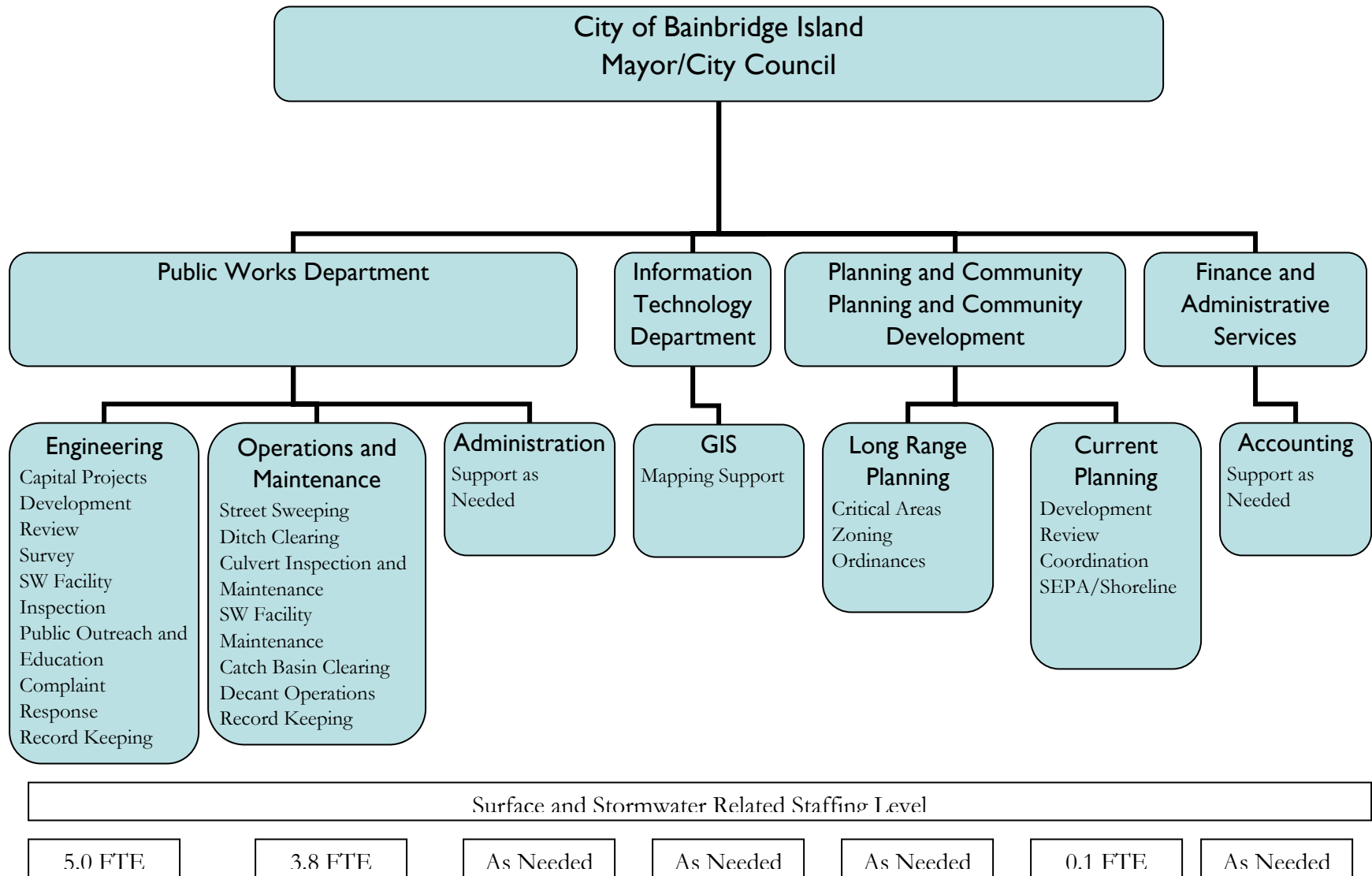
NPDES Phase II permit, though they are needed for a fully functional SSWM Program. Examples of City-specific activities include program overhead, decant facility operation, water quality and groundwater monitoring, etc

City departments involved with surface and stormwater management include Public Works (PW), Planning and Community Development (PCD), Information Technology (IT), Executive, and Finance.

Total cost of existing activities (\$1.9M) is slightly above existing City Surface and Stormwater budget because some program activities (CIP engineering, Natural Resource Team, etc) may not be fully paid for by the stormwater fund.

Appendix E—Staffing Summary
Organizational Chart

Figure 2 – City of Bainbridge Island Surface and Stormwater Program Staffing Analysis



Technical Memorandum #2:
NPDES Permit Requirements

Technical Memorandum



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To: Melva Hill, City of Bainbridge Island
From: Joe Simmler, PhD and Alissa Maxwell, PE
Copies:
Date: June 15, 2006
Final Revisions October 10, 2006
Subject: Technical Memorandum #2
NPDES Permit Requirements
Project No.: 30794

Introduction

The City of Bainbridge Island (City) has been identified by the Washington State Department of Ecology (DOE) as a NPDES Phase II community. As such, the City will need to comply with the requirements of the *National Pollutant Discharge Elimination System General Permit for Discharges from Small Municipal Separate Storm Sewers in Western Washington*, hereafter referred to as the Phase II Permit. This technical memorandum outlines the requirements of the Phase II Permit along with milestone dates and consequences for non-compliance. The information in this memorandum will be used as the basis to conduct a regulatory gap analysis, comparing the City's existing stormwater activities with the activities required by the Phase II Permit.

Note: It should be noted that other regulatory documents not included in this analysis may affect the City's stormwater program. These include, but are not limited to, the Underground Injection Control (UIC) Rule, the Puget Sound Water Quality Management Plan (PSWQMP), the Endangered Species Act, DOE's total maximum daily load allocations (TMDLs), and the state Water Resource Inventory Area (WRIA) activities. City staff have reviewed these and other regulations and have determined that the NPDES permit will play the largest role in shaping the City's future stormwater program. Other regulations have relatively minor impacts to the City's program at this time. However, the City will continue to track changes and modifications to these regulations to determine if and how they may affect the City's future stormwater program.

This technical memorandum is the second in a series of memorandums that Otak is developing to analyze the City's stormwater program with respect to upcoming NDPDES guidelines. The analysis includes the following steps, each documented in a separate technical memorandum:

- Step 1—Document the City's existing stormwater program (Technical Memorandum #1);
- Step 2—Outline regulatory requirements, milestone dates, and consequences for non-compliance (Technical Memorandum #2);

- Step 3—Identify gaps in the City’s existing program compared to regulatory requirements and calculate staff levels and costs for full compliance (Technical Memorandum #3); and
- Step 4—Review funding options to finance needed enhancements to the City’s stormwater program (Technical Memorandum #4).

This series of memorandums will be integrated into a final report documenting all steps and recommendations from this programmatic analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City’s budget process.

NPDES Permit Overview

The Phase II Permit outlines stormwater program activities and implementation milestones that the City must complete in order to be in compliance with federal law. All Phase II communities are expected to develop a stormwater program that includes all the required activities, implements activities within the required timeframes, and submits annual reports to DOE to document progress toward program implementation.

Permit Coverage

The Phase II Permit applies to cities with populations of 10,000 to 100,000, located within, or partially within an urbanized area that are operating municipal separate storm sewer systems (MS4s) that discharge to a water of Washington State. The City of Bainbridge Island has a population of approximately 21,000 and has been identified as part of the Bremerton Urban Area, as shown in Figure 1. Due to its population and urban density, the City is required to have a Phase II NPDES Permit. As an island community, the City faces some unique challenges related to surface water protection. During the last inventory, over 175 outfalls were identified discharging from the City’s MS4 to Puget Sound. As a Phase II community, the requirements of the Phase II Permit apply throughout the entire incorporated area of the City.

Permit Timeline

At this time, the General Phase II Permit for Western Washington is in draft form. DOE is reviewing comments submitted on the draft permit and expects to issue the final permit to the City in the winter of 2006/2007. Once issued, the permit will cover Phase II communities for five years. The first year of the permit will run from the issue date until December 31, 2007. Subsequent permit years will coincide with the annual calendar, extending coverage until December 31, 2011.

Phase II Permit Requirements

This analysis of the City’s upcoming stormwater regulatory requirements focuses only on activities needed for compliance with the upcoming Phase II Permit. A detailed breakdown of the Phase II Permit required activities and implementation dates is attached to this memorandum in a

spreadsheet titled *Stormwater Management Program Regulatory Requirements and Milestone Dates*. Summaries of the major program elements, key milestones, reporting requirements, and consequences for non-compliance are included below. Please refer to the attached spreadsheet for a more detailed analysis.

Major Program Elements

To aid in tracking permit requirements, activities have been grouped into nine major surface water management program (SWMP) elements. The elements coincide with Special Conditions outlined in the DOE Draft Phase II Permit (February 15, 2006) as follows:

- SWMP Element #1 – Public Education and Outreach, Special Condition S5.C.1, three sub-elements
- SWMP Element #2 – Public Involvement and Participation, Special Condition S5.C.2, two sub-elements
- SWMP Element #3 – Illicit Discharge Detection and Elimination (IDDE), Special Condition S5.C.3, six sub-elements
- SWMP Element #4 – Controlling Runoff from New Development, Redevelopment, and Construction Sites, Special Condition S5.C.4, six sub-elements
- SWMP Element #5 – Pollution Prevention and Operation and Maintenance for Municipal Operations, Special Condition S5.C.5, nine sub-elements
- SWMP Element #6 – Program Implementation, Special Conditions S5.A and S5.B, four sub-elements
- SWMP Element #7 – Total Maximum Daily Load Allocations, Special Condition S7, three sub-elements
- SWMP Element #8 – Monitoring – Special Condition S8, five sub-elements
- SWMP Element #9 – Reporting – Special Condition S9, four sub-elements

It should be noted that some of the program elements cover a significant number of activities required for compliance. For example, SWMP Element 4.2 – *Site Plan Review and Permitting* covers development plan review, permitting of private and public projects, site inspection during and after construction, and enforcement for projects not following established design standards. Other elements are fairly straight forward, such as SWMP Element 4.5 – *NOI for Construction Activity*, which simply requires that the City make copies of the DOE's General Construction Permit application (also known as the Notice of Intent or NOI) available to developers.

Some SWMP Elements may include activities that can be covered by an activity in another category. For example, the public education aspect of SWMP Element 3.4 – *Public Education and Spill Reporting* can be covered by focusing the public outreach in SWMP Element 1.1 – *Outreach to Two Target Audiences* on reducing illegal discharges to the stormwater system. In the same way, many of the major program elements include program tracking, documentation, and reporting activities that are covered by maintaining records and submitting the annual reports as outlined in SWMP #9 – *Reporting*.

Key Milestones

As listed in the attached *Stormwater Management Program Regulatory Requirements and Milestone Dates Spreadsheet*, the Phase II Permit includes implementation deadlines for many of the program elements. The overall milestone is to have the SWMP fully developed and implemented no later than 180 days prior to the expiration date of the permit (approximately July of 2011). The Phase II Permit also includes interim milestones to ensure that communities are working toward full implementation throughout the permit cycle. Interim milestones, as shown in the attached implementation/compliance plan, are typically based on the end of permit years as follows:

- Year 1 = December 31, 2007
- Year 2 = December 31, 2008
- Year 3 = December 31, 2009
- Year 4 = December 31, 2010
- Year 5 = December 31, 2011

For example, the permit requires that the runoff control ordinance and site plan review, permitting, and inspection activities be in place by the end of Year 2, but communities have until the end of Year 3 to implement operations and maintenance activities consistent with DOE's 2005 *Stormwater Management Manual for Western Washington*.

Some program milestones have dates set several years into the future. However, the activities required to achieve the milestone will likely take multiple years to complete, so communities will need to start planning soon to be in compliance by the actual milestone date. For example, the deadline to develop a GIS map of the whole MS4 system is the end of Year 4. In order to reach that milestone, the City should plan on beginning field data collection in Year 1 with a goal of collecting at least 30% of the required data each year. Data processing and GIS mapping could then begin in Year 2 and continue through the end of Year 4 to reach the implementation deadline.

The Phase II Permit also leaves some activities somewhat ambiguous. In particular, staff training in SWMP Elements 3.6 and 5.7 require "ongoing training" programs be implemented by the end of Year 3, but the permit does not specify the frequency or extent of the ongoing training. It is recommended that communities develop a training program with sessions offered once or twice each year, covering several topics in each session. Training sessions should start in Year 2 with a goal of addressing all the required topics several times in the permit cycle. In this way, staff that cannot attend the first offering of a training topic have other chances to be trained before the end of the permit cycle. Additional recommendations for implementing SWMP elements will be addressed in the gap analysis in Technical Memorandum #3.

Reporting Requirements

The Phase II Permit will require all permittees to submit annual reports to DOE. The reports should document the SWMP activities completed in the previous calendar year, the cost to implement the stormwater program, the status of activities in development, and any changes proposed to the existing program. The first annual report (due March 31, 2008) will cover Year 1 of the permit through December 31, 2007. Following reports documenting activities for the previous calendar year are due to DOE by March 31 of 2008 through 2012.

The draft permit summarizes the reporting submittals and compliance dates (Table 1 of the Phase II Permit) for all aspects of the permit. Those requirements that apply to the City of Bainbridge Island are listed in Table 1 below.

Table I Report Submittals & Compliance Dates*			
Permit Section	Submittal Required	Frequency	First Submittal Date
S5.A	Status report on development and implementation of SWMP	On-going per Appendix 3 of the Phase II Permit	March 31, 2008
S8	Monitoring site identification	Once	180 days prior to Permit expiration
S9.A	SWMP Annual Report forms per Appendix 3 of the Phase II Permit	Annually	March 31, 2008
G3	Notification of Spill	As Needed	Immediately when a spill is identified
G18	Permit Coverage reapplication	Once	180 days prior to Permit expiration
G20	Non-compliance notification	As needed	Within 30 days of non-compliance

* Information from Table 1 of the draft Phase II Permit has been reduced to list only those requirements that apply to the City of Bainbridge Island. Requirements are subject to change with the final issuance of the permit.

Consequences for Non-compliance

Non-compliance with the Phase II Permit puts the City in violation of the Federal Clean Water Act. Based on the type of violation (administrative, criminal or civil) the City could be subject to up to fines ranging from \$2,500 to \$27,000 per day. Criminal penalties can also include jail time. In addition, not meeting the requirements of the Phase II Permit puts the City at risk for a third party lawsuit challenging the City's role in protecting and maintaining clean water.

In addition, general condition G12 of the Phase II Permit allows DOE to terminate coverage under the permit if the City is in violation of the terms and conditions. DOE does require that permittees

notify the agency within 30 days if they become aware that they are not in compliance with the permit terms and conditions. Such notification does not immediately result in revocation of the permit, but it does allow DOE to make a decision as to whether the permit should be modified, revoked, or reissued. Notification must occur immediately if "...the Permittee becomes aware of a discharge from the MS4 which may cause or contribute to an eminent threat to human health or the environment" (Condition G20.C).

Conclusions

As a Phase II community, the City of Bainbridge Island will be covered under DOE's NPDES permit for small MS4s. The permit outlines stormwater program activities that must be implemented based on scheduled milestone dates over the next five years. The program activities can be grouped into nine major program elements, as listed above and shown in the attached Implementation/Compliance Plan

Based on the existing program analysis previously completed, the City of Bainbridge Island has already made great strides in implementing some of the major elements. These elements include SWMP #1 – *Public Education and Outreach*, SWMP #4 – *Controlling Runoff from New Development, Redevelopment, and Construction Sites*, and SWMP #8 – *Monitoring*. Other program elements will require a more concerted effort to complete all of the required activities by the implementation deadlines. This is particularly true for the storm sewer system mapping, required under SWMP #3 – *IDDE*.

The milestone dates outlined in the Phase II Permit create a strong framework for developing a SWMP that will meet all the program requirements during the permit cycle. The City will need to pay close attention to those milestone dates that are several years down the road, and especially to these milestones that will require significant effort over a number of years to complete all of the required activities.

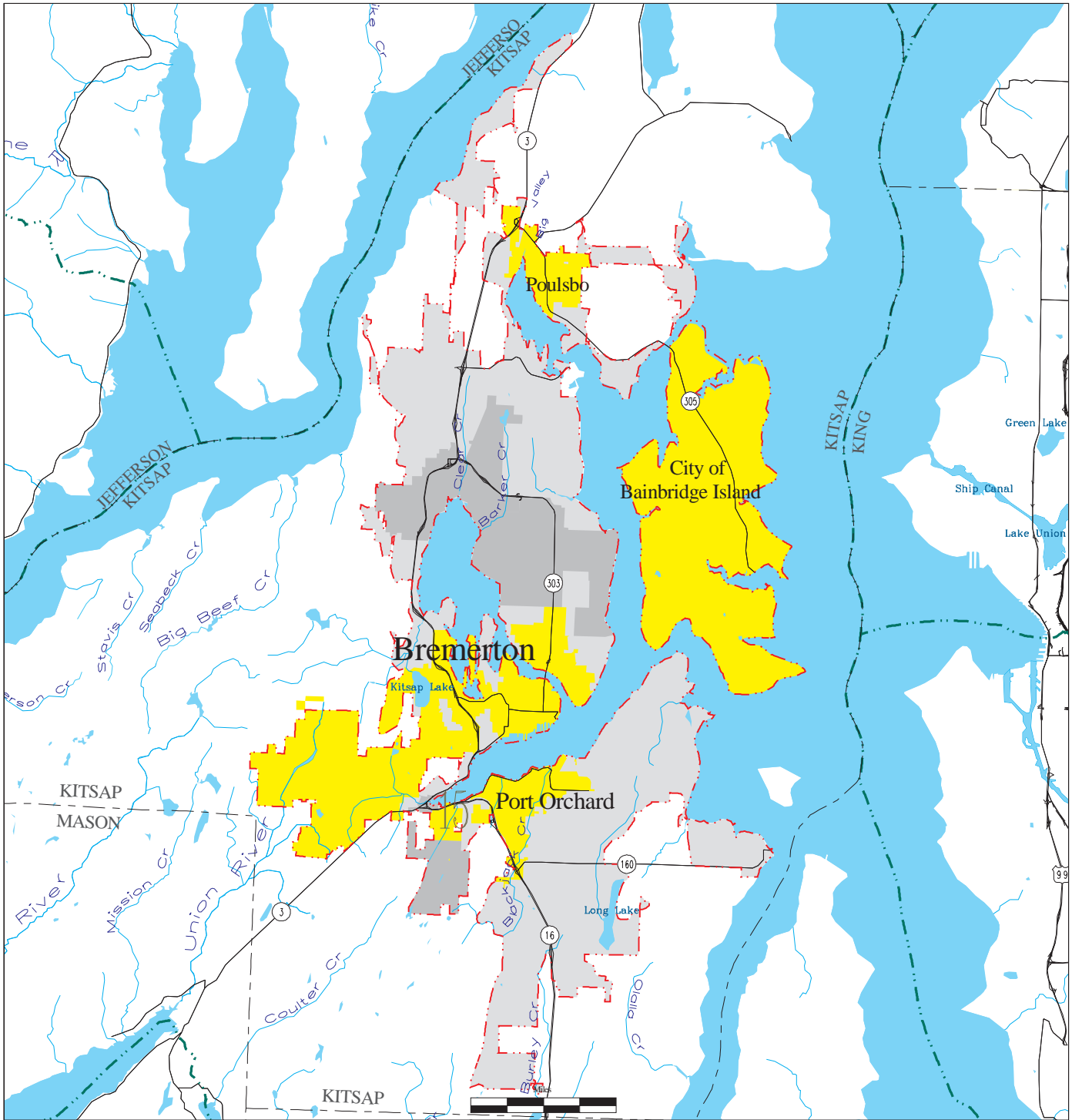
Next Steps

This technical memorandum is the second in a series of memorandums to analyze the City's stormwater program with respect to upcoming NPDES guidelines. Technical Memorandum #3 compares the City's existing stormwater activities to the required program elements outlined in the Phase II Permit. That analysis identifies gaps in the existing program, calculates staff levels and activities needed to reach full compliance, and identifies an annual implementation schedule and costs over the five years of the permit cycle. Technical Memorandum #4 reviews funding options to finance the needed program enhancements.

The series of memorandums will be integrated into a final report documenting all steps and recommendations from this program analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City's budget process.

Attachments

- Figure 1 – Bremerton Urban Area (from DOE)
- *Stormwater Management Program Regulatory Requirements and Milestone Dates* spreadsheet












Bremerton Urban Area

Water Quality Program



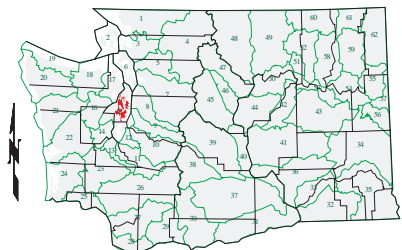
WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

GIS Technical Services
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|----------|---|---|--|
| Phase II |  Municipal Stormwater Permit Areas |  Incorporated City |  County |
| |  Urban Growth Area (UGA) |  Urban Area (UA) |  WRIA Boundary |
| |  Urban Area (UA) |  US/State Highways |  Rivers/Streams |

Representational Feature Source:

- Urban Areas - USDOC/Census, 2000, 1:500,000
- Urban Growth Areas - WOFM/Ecology 2005, 1:24,000
- Cities - WDOT, 2003, 1:24,000
- Counties - Ecology/WDNR, 2002, 1:24,000
- WRIA - Ecology, 2002, 1:24,000
- Highways - WDOT, 2001, 1:24,000
- Hydrography - Ecology/WDFW, 1998, 1:100,000



Maps are only accurate to the scales listed above. They do not represent exact boundaries. Please consult higher resolution city, county or census maps to determine the exact boundaries.

CITY OF BAINBRIDGE ISLAND				
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES				
Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
SWMP Element #1 - Public Education and Outreach				
1.1 Outreach to Two Target Audiences	S5.C.1.a	Implement or participate in an education and outreach program targeting a minimum of two of the following audiences: - general public concerning impervious surfaces and minimizing runoff; - homeowners concerning natural yard care; - homeowners concerning pesticides and fertilizers; - general public concerning automotive chemicals and hazardous cleaning supplies; - development community concerning stormwater technical standards; - development community concerning LID techniques; - small businesses concerning illicit discharge; - general public concerning environmental stewardship.	Year 2	
1.2 Measure Results of the Educational Activities	S5.C.1.b	Participate in an effort to measure understanding and adoption of the targeted behaviors among the target audiences.	Year 4	
1.3 Maintain Records	S5.C.1.c	Track and maintain records of public education and outreach activities.	With Annual Report	Included with Element 9.2.
SWMP Element #2 - Public Involvement and Participation				
2.1 Input to SWMP	S5.C.2.a	Create opportunities for public to participate and comment on the development of the SWMP.	Year 1	
2.2 Availability of Program Documents	S5.C.2.b	Post the SWMP and the Annual Report on the City Website; Make all final stormwater program documentation available to the public.	March 31 Each Year	
SWMP Element #3 - Illicit Discharge Detection and Elimination				
3.1 Storm Sewer System Map	S5.C.3.a	Develop a municipal storm sewer system map of all storm sewer outfalls, receiving waters, and structural stormwater facilities; Mapping should include: -Tributary drainage areas and land use; -Authorized connection points; -Closed depressions; Map should be in GIS format with fully described mapping standards	Year 4	Recommend collecting field data on at least 30% of the system each year, starting in Year 1 of the permit. This gives communities time to develop GIS maps of the field data prior to the implementation deadline.

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES

Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
3.2 Illicit Discharge Ordinance	S5.C.3.b	Develop and implement an ordinance prohibiting non-stormwater discharge to the MS4. The ordinance should cover: -Potable water flushing; -Lawn and landscape irrigation runoff; -Swimming pool discharges; -Street and sidewalk wash water; The ordinance must include escalating enforcement procedures and actions and an enforcement strategy.	Year 2	
3.3 Detection and Elimination Program	S5.C.3.c	Develop and implement program to detect and address non-stormwater discharges, spills, illicit connections and illegal dumping. Include procedures for: -Locating priority areas based on land use, previous complaints, and storage practices; -Identifying 3 priority receiving waters; -Field assessment during dry weather of outfalls in 3 priority receiving waters; -Characterizing nature and potential threat of illicit discharges; -Tracing the source of discharge/Notifying property owners; -Removing the source and conducting follow-up inspections	Permit End Year 3 Year 4 See right	Deadlines for addressing reported problems include: Initial investigation w/in 7 days of a report; Initiate a source investigation w/in 21 days of a report; and terminate the connection w/in 180 days of confirming an illicit connection.
3.4 Public Education and Spill Reporting	S5.C.3.d	Inform public employees, businesses, and general public of hazards associated with illegal discharges; Publicly list and publicize a hotline for public reporting of spills and illicit discharges; Keep records of calls and follow-up actions taken.	Permit End Year 2	Activities could be covered by Element 1.1
3.5 Program Evaluation and Tracking	S5.C.3.e	Track number and type of spills identified, inspections made, and feedback from public education efforts.	With Annual Report	Included with Element 9.2.
3.6 Staff Training	S5.C.3.f	Train responsible staff on illicit discharge identification, investigation, clean-up, and reporting; Ongoing training for all municipal field staff on identification and reporting.	Year 2.5 Year 3	

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES

Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites				
4.1 Stormwater Runoff Control Ordinance	S5.C.4.a	Adopt an ordinance to address runoff from new development, redevelopment, and construction site projects disturbing 1 or more acre. The ordinance should include: -Minimum requirements and thresholds equivalent to the 2005 Ecology Manual; -BMP selection and design criteria equivalent to the 2005 Ecology Manual; -Legal authority for inspection of private facilities discharging to the MS4; -Provisions to allow LID techniques to reduce impervious surfaces; -Guidelines and for applying Ecology's "erosivity waiver" (if applicable)	Year 2	
4.2 Site Plan Review and Permitting	S5.C.4.b	Develop a permitting process with plan review, inspection, and enforcement to ensure that the ordinance guidelines (Element 4.1) are applied to all sites disturbing 1 acre of land or greater. Inspection should apply to high risk sites prior to construction and all sites during and after construction.	Year 2	Compliance is defined as achieving 95% of scheduled inspections.
4.3 Long Term Operation and Maintenance	S5.C.4.c	Adopt an ordinance identifying parties responsible for maintenance and inspection of stormwater facilities; Adopt maintenance standards for facilities permitted under Element 4.2 consistent with the 2005 Ecology Manual; Inspect established facilities annually; Inspect new water quality and flow control facilities every 6 months during building construction.	Year 2	Compliance is defined as scheduling inspection of all sites and achieving inspection of 95% of the sites.
4.4 Maintenance Inspection Records	S5.C.4.d	Keep records of all inspections, enforcement actions, maintenance activities, and construction sites.		
4.5 NOI for Construction Activity	S5.C.4.e	Make copies of the "Notice of Intent for Construction Activity" and/or "Notice of Intent for Industrial Activity" available to developers.	January 1, 2007	
4.6 Staff Training	S5.C.4.f	Conduct training for staff in permitting, plan review, construction site inspection, and enforcement concerning the Stormwater Runoff Control program (Element 4.1); Maintain records of training.	Year 1	Frequency and content of training is not specified in the permit.

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES

Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations				
5.1 Adopt Maintenance Standards	S5.C.5.a	Adopt maintenance standards consistent with the 2005 Ecology Manual;	Year 3	
5.2 Annual Inspections of Water Quality and Flow Control Facilities	S5.C.5.b	Conduct annual inspections of stormwater treatment and flow control facilities; Perform necessary maintenance actions.	Years 3, 4 and 5	Compliance is defined as scheduling inspection of all sites and achieving inspection of 95% of the sites.
5.3 Spot Checks after Storm Events	S5.C.5.c	Spot check stormwater treatment and flow control facilities after major storm events (>10-year recurrence interval); Conduct repairs as necessary.	After major storm events	Compliance is defined as scheduling inspection of all sites and achieving inspection of 95% of the sites.
5.4 Catch Basin Inspection	S5.C.5.d	Inspect all catch basins and inlets at least once during the permit term; Clean catch basins as necessary; Dispose of decant water appropriately.	Permit End SMMP Element 4.2 requires annual inspection	Compliance is defined as scheduling inspection of all sites and achieving inspection of 95% of the sites.
5.5 Road Maintenance	S5.C.5.f	Implement practices to reduce stormwater impacts from street, parking lot, and highway runoff. Address the following activities: -Pipe and culvert cleaning; -Ditch and roadside vegetation management; -Street cleaning; -Street repair, resurfacing, and striping; -Snow and ice control; -Utility installation; -Dust control.	Year 3	
5.6 Non-Roadway Property Maintenance	S5.C.5.g	Implement practices to reduce stormwater impacts from non-roadway property runoff (parks, open space, right-of-way, and maintenance yards). Address the following: -Application of fertilizer, pesticides, and herbicides; -Sediment and Erosion control; -Landscape maintenance and vegetation disposal; -Trash management; -Building exterior cleaning and maintenance.	Year 3	

CITY OF BAINBRIDGE ISLAND				
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES				
Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
5.7 Staff Training	S5.C.5.h	Implement ongoing training activities for construction, maintenance, and operations personnel. Include training on: -O&M standards; -inspection procedures; -selecting appropriate BMPs; -Reducing water quality impact in daily activities; -Reporting of water quality concerns and illicit discharges. Maintain records of training.	Year 3	The frequency and content of training activities are not specified in the draft permit. Training sessions could cover multiple topics to meet multiple requirements (Elements 1.1, 3.6, and 4.6)
5.8 SWPPP for Maintenance Yards	S5.C.5.i	Develop and implement Stormwater Pollution Prevention Plans for all equipment maintenance and storage yards not covered under the Industrial Stormwater General Permit. Include an implementation schedule for structural BMPs and conduct occasional visual inspection of discharge from the site.	Year 3	
5.9 Record Keeping	S5.C.5.j	Maintain records of inspection and/or repair activities.	Ongoing	Recordkeeping for stormwater facilities noted separately in Element 4.4
SWMP Element #6 - Program Implementation				
6.1 SWMP Implementation	S5.A.1	Develop and implement a SWMP that covers the geographic area subject to the permit.	Permit End	Compliance is achieved by conducting the activities outlined in Elements 1 through 5 above.
6.2 SWMP Documentation	S5.A.2	Prepare written documentation of the SWMP and maintain annual updates in accordance with Element 9.	March 31 Each Year	Compliance is achieved through timely submittals of annual reports (Element 9.1).
6.3 Program Tracking	S5.A.3	Track the cost of development and implementation of the SWMP, including the number of inspections, enforcement actions, and public education activities. Include this information in the Annual Report.	March 31 Each Year	Compliance is achieved through timely submittals of annual reports (Element 9.1) and ongoing tracking (Element 9.2).
6.4 MEP and AKART	S5.B	Design the SWMP to reduce discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP), meet State AKART requirements, and protect water quality. Continue to implement existing SWMP activities, even if they are ahead of the schedule of this permit.	N/A	Compliance is achieved through implementation of existing SWMP activities and the activities outlined in Elements 1 through 5.
SWMP Element #7 - Total Maximum Daily Load Allocations				
7.1 Applicable TMDLs in Appendix 2	S7.A	Comply with requirements of Appendix 2 of the Phase II permit (document here); When monitoring is required, submit a Quality Assurance Project Plan (QAPP) to Ecology.	N/A	No TMDLs apply.

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES

Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
7.2 TMDLs not listed in Appendix 2	S7.B	Comply with requirements of the NPDES Phase II permit; Keep records and report activities relevant to applicable TMDLs.	N/A	Compliance is achieved through implementation of activities outlined in Elements 1 through 5 and submittal of annual reports (Element 9.1).
7.3 TMDLs Approved during the Permit Cycle	S7.C	Comply with future permit modifications (if applicable); Permittees are encouraged to participate in developing TMDLs and begin implementation.	N/A	No TMDLs apply.
SWMP Element #8 - Monitoring				
8.1 Existing Monitoring	S8.B	Describe any stormwater monitoring or studies and type of information gathered; Assess the appropriateness of the BMPs in Element 4.1 and note any proposed changes.	March 31 Each Year	Compliance is achieved through timely submittals of annual reports (Element 9.1).
8.2 Stormwater Monitoring	S8.C.1.a	Prepare for future monitoring by identifying 1 commercial or high density residential outfall or conveyance suitable for permanent flow-weighted composite sampling equipment.	Permit End	
8.3 SWMP Effectiveness Monitoring	S8.C.1.b	Prepare for future monitoring by identifying 2 suitable questions that could be studied through future monitoring; Select sites for future monitoring to explore the answers to the selected questions; Develop a monitoring plan for each question including: -Statement of the problem and why it is significant; -Specific hypothesis about the problem; -Specific parameters of attributes to be measured; -Expected modifications based on outcome of the monitoring.	Permit End	
8.4 Runoff BMP Monitoring	S8.C.1.c	Not Applicable	N/A	BMP effectiveness monitoring does not apply to cities with a population less than 25,000.
8.5 Annual Reporting	S8.C.2.a	Describe the status of identifying sites, questions, and BMP(s) outlined in Elements 8.2 through 8.4.	Years 3, 4, and 5	Compliance is achieved through timely submittals of annual reports (Element 9.1).

CITY OF BAINBRIDGE ISLAND				
STORMWATER MANAGEMENT PROGRAM REGULATORY REQUIREMENTS AND MILESTONE DATES				
Stormwater Program Element	Permit Reference	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Notes/Comments/Overlaps
SWMP Element #9 - Reporting				
9.1 Annual Reports	S9.A&B	Submit annual reports each year on the previous year's NPDES Phase II activities. Use reporting forms supplied in Appendix 3 of the Phase II permit and submit applicable supporting documentation.	March 31 Each Year	
9.2 Ongoing Tracking	S9.C.2	To support annual report submittal, maintain records of: -Implementation status of each activity in Elements 1 through 5; -Assessment of progress toward meeting minimum performance measures; -Activities implemented to comply with program requirement (Elements 1 through 5); -SWMP implementation schedule and plans for meeting future permit deadlines	Ongoing	Maintaining good records throughout the year will aid in assembling each year's annual report (Element 9.1).
9.3 Maintaining Records	S9.C	Maintain records of final SWMP documentation and permit activities for five years.	Ongoing	
9.4 Public Access	S9.D	Make all records of final SWMP and permit activities available to the public at reasonable times during business hours.	Ongoing	Included with Element 2.2.

Notes:

- Activities are based on the *NPDES State Waste Discharge General Permit for Discharges from Small MS4s in Western Washington*, Draft Permit issued in February 2006. Actual activities may vary based on the final permit, expected to be issued in December 2006.
- Year 1 ends December 31, 2007. Year 2 ends December 31, 2008; Year 3 ends December 31, 2009; Year 4 ends December 31, 2010; Year 5 ends December 31, 2011
- Due Dates in Bold are required by the NPDES Phase II for Western Washington. Other due dates are recommended by Otak for successful program implementation.
- "Permit End" means 180 days prior to the expiration date of the permit (July 2011).
- "2005 Ecology Manual" refers to the Washington State Department of Ecology's 2005 *Stormwater Management Manual for Western Washington*.
- TMDL guidelines only apply to permittees whose MS4s discharge to a waterbody with a TMDL for stormwater approved by EPA prior to the issuance of this permit. (See Appendix 2 of the Permit for a list of applicable waterbodies.)
- Monitoring requirements vary based on City or County population. Guidelines listed here are for small cities (population between 10,000 and 25,000).

Technical Memorandum #3:
Stormwater Management Program
Gap Analysis

Technical Memorandum



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From: Joe Simmler, PhD
Alissa Maxwell, PE

Copies:

Date: September 6, 2006
Final Revisions October 10, 2006

Subject: Technical Memorandum #3
Stormwater Management Program Gap Analysis

Project No.: 30794

Introduction

The City of Bainbridge Island (City) has been identified by the Washington State Department of Ecology (DOE) as a NPDES Phase II community. As such, the City will need to comply with the requirements of the *National Pollutant Discharge Elimination System and State Waste Discharge General Permit for Discharges from Small Municipal Separate Storm Sewers in Western Washington*, hereafter referred to as the Phase II Permit. The City's existing Surface and Stormwater Management (SSWM) Program already performs many of the activities required by the Phase II Permit. Other activities will require additional resources to bring the SSWM Program into compliance with regulatory guidelines. This technical memorandum documents the SSWM Program gap analysis performed to compare the City's existing stormwater activities with the activities required by the Phase II Permit, identify gaps in the existing program, and estimate additional resources required for full compliance.

This technical memorandum is the third in a series of memorandums that Otak is developing to analyze the City's SSWM Program with respect to upcoming NDPDES guidelines. The analysis includes the following steps, each documented in a separate technical memorandum:

- Step 1—Document the City's existing SSWM Program.
- Step 2—Outline regulatory requirements, milestone dates, and consequences for non-compliance.
- Step 3—Identify gaps in the City's existing program compared to regulatory requirements and calculate staff levels and costs for full compliance.
- Step 4—Review funding options to finance needed enhancements to the City's SSWM Program.

The series of memorandums will be integrated into a final report documenting all steps and recommendations from this SSWM Program analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City's budget process.

Methods of Analysis

Program Requirements

The City's SSWM Program is divided into 13 major elements, corresponding to activities outlined in Technical Memorandum #1—*City's Existing Surface and Stormwater Program*.

- Elements one through nine are based on the Phase II requirements. The requirements were outlined in detail in Technical Memorandum #2—*NPDES Permit Requirements*.
- Element 10 relates to other regulations, such as the Underground Injection Control (UIC) Rule and the Puget Sound Water Quality Management Plan (PSWQMP), that may affect the SSWM Program. It should be noted that preliminary program estimates are included for achieving compliance with these additional regulations, but additional analysis is needed to identify the specific activities and actual costs.
- Element 11 covers additional activities that are not specifically required by the Phase II Permit, but are already in place or desired at the local level. This includes professional services related to SSWM, the water quality and groundwater monitoring programs that the City is choosing to implement, and the City's Natural Resources Team.
- Element 12 covers activities that are needed at the local level to implement a successful SSWM Program. This element is titled Program Overhead and includes Executive and Finance support, Operating Leases, Insurance, Intergovernmental Transfers, Utility Overhead, and Debt Service Cost.
- Element 13 documents the City's Capital Improvement Projects (CIP) and equipment purchases related to the SSWM Program.

Program Gaps and Future Needs

This program gap analysis was conducted by first comparing the City's existing SSWM Program activities to the Phase II permit requirements (program elements 1 – 9) and the additional activities outlined in program elements 10 through 13, where applicable. The City was given credit for current levels of staffing, funding, equipment, ordinances, and technical expertise to estimate the percent complete for each of the program elements.

For each activity where a gap exists between the existing activities and the Phase II permit requirements (i.e. percent complete is less than 100 percent), the activities needed to meet full compliance were documented. In most cases the gap can be correlated to an increase in staff time. Some limited areas also require the purchase of new equipment, additional staff training, or the tracking and documentation of information into annual reports. Additional staff time was estimated based on knowledge of activities in other local jurisdictions and references to the *Model Municipal Stormwater Program for Eastern Washington*, which lists recommended resource levels for both small and large cities for each of the various NPDES activities. All staff estimates were confirmed through conversations with City staff.

The required staff time was then converted into the required Full Time Equivalents (FTE) and labor costs. Based on conversations with City Staff, one FTE is equivalent to 1,710 working hours per year, once holidays, vacation, sick leave, and other work outages are accounted for. Labor costs are estimated based on an average salary and benefit cost of \$46 per hour (calculated as the average for all staff members identified as contributing to SSWM activities) based upon personal communication with the City. Throughout this analysis, program requirements were analyzed to identify potential overlaps and identify areas where a single activity, policy, or resource could meet multiple requirements. These overlaps are noted in the attached spreadsheets.

Equipment and material costs for each program element are added to the labor cost to estimate the total program cost over each of the five years of the permit (2007 through 2011). The costs in each year account for ramping up certain program elements, so that they are fully implemented by the required deadlines set forth in the permit. Finally, the total required expenditure for each of the 13 major elements is compared to the existing expenditure (2006), as outlined in Technical Memorandum #1. This comparison results in an overall gap in the City's existing SSWM Program.

All dollars shown in this analysis are in 2006 dollars and are based on 2006 salary and benefit ranges. No adjustments have been made to account for inflation or project the costs into future years.

This SSWM program analysis is documented in detail in the attached spreadsheet report titled *City of Bainbridge Island Surface and Stormwater System Plan, Stormwater Management Program Gap Analysis and Costs*. The report includes the detailed analysis as well as the following summaries:

- Comparison to Existing City Budget
- Overall Program Requirements—Funding (program cost per element per year)
- Overall Program Requirements—Staffing (staff levels per element per year)

A short discussion of the information in the attached report is provided below.

Stormwater Program Gap Analysis

Details of the analysis included in the attached spreadsheet include all sub elements summarized below for each major program element. The analysis details should be reviewed prior to making any policy or funding decisions.

Element I: Public Education and Outreach

The Public Education and Outreach element includes conducting educational activities for specific target audiences, measuring the results of those activities, and maintaining records. The City currently hires a local consultant to conduct the public education. The consultant contract includes measuring the results of the outreach activities and writing an annual report. This method has allowed the City to reach full compliance with the Phase II Permit requirements well before the

deadlines set forth in the permit. Some additional staff time is needed to adequately oversee the program, but existing funding levels are near what is required.

Annual Staffing Needs and Funding—150 staff hours (0.09 FTE) and \$42K each year to manage the program and pay for consultant services. The funding level includes \$35K per year to hire an outside consultant. (Note: considerable volunteer time is also associated with this element.)

Element 2: Public Involvement and Participation

The Public Involvement and Participation element requires that the City provide opportunities for the public to participate in the development of the overall SSWM Program. The City must also post the annual NPDES report on the City's website and make the documentation available to the public. Both of these are new activities for the SSWM program. It is recommended that the City schedule and publicize several public meetings in Year 1 to receive SSWM program input. A small amount of staff time will also be needed beginning in Year 2 to manage the website and upload the annual report.

Annual Staffing Needs and Funding—200 staff hours (0.12 FTE) and \$14,000 in Year 1 to schedule and conduct public meetings (includes \$5,000 for presentation materials). 24 staff hours (0.01 FTE) and \$1,100 in Years 2 through 3 to post the annual report on the City's website and ensure document availability.

Element 3: Illicit Discharge Detection and Elimination

The Illicit Discharge Detection and Elimination (IDDE) requirements include developing a map of the municipal storm sewer system, developing an IDDE ordinance, and conducting a formal program to detect and eliminate illicit discharges and illegal spills. The program must have mechanisms for the public to report spills, methods to track activities, and a schedule for staff training on IDDE.

Mapping the stormwater system will be a major undertaking that must be complete by the end of Year 4. It is recommended that the City collect field data on 30 percent of the system in Years 1, 2, and 3 with office mapping (in GIS) in Years 2, 3, and 4. Staff time will be needed in future years to maintain the map, add new facilities, and replace structures.

The City's IDDE ordinance should be updated by the end of Year 2 to outline the formal IDDE program. Sample ordinances are available from several sources, including the Center for Watershed Protection. Once the ordinance is in place, the City will need to document the IDDE program, though the City's current procedures for addressing spills should be adequate for meeting the permit requirements. Beginning in Year 3, the City will need to begin focused field investigations of outfalls to locate any unknown illicit connections.

Finally, staff training should be conducted in Year 2 for engineering staff that respond to spill complaints and for all Operation & Maintenance (O&M) staff in Year 3. Refresher training should continue in Years 4 and 5. It is recommended that the initial trainings in Years 3 and 4 be conducted by an outside trainer (possibly in conjunction with Kitsap County or another local agency), while refresher training can likely be handled internally.

Annual Staffing Needs and Funding—Between 840 and 1150 hours (0.49 to 0.67 FTE) and \$58K to \$77K per year depending on the timing of various activities. The peak year is in Year 2 all elements should be active. The funding levels in Years 2 and 3 include \$5,000 each to hire an outside trainer.

Element 4: Controlling Runoff from New Development, Redevelopment, and Construction Sites

Element 4 covers the development review requirements. These requirements center on enforcing the standards of a stormwater management ordinance through plan review, construction site inspection, facility inspection, and staff training.

The City's existing stormwater ordinance likely meets the Phase II Permit requirements, but should be reviewed once the final permit is issued. Existing plan review procedures are also nearly adequate, though additional time (800 hours per year) is needed for staff to inspect project sites during construction to ensure that facilities are being constructed per the approved plans. Additional time is also needed to conduct annual inspections of every water quality and flow control facility, as the current program only inspects 10 – 15 percent of facilities each year. Each of these plan reviews, construction inspections, and facility inspections must be documented and a system maintained to establish a schedule for future activities.

Note that the requirements of Element 4.3—*Long Term Operation and Maintenance* have significant overlap with Element 4.3—*Long Term Operation and Maintenance*, Element 5.2—*Annual Inspection of Water Quality and Flow Control Facilities*, and Element 5.4—*Catch Basin Inspection*. All relate to the inspection and maintenance of the City's stormwater system. For the purpose of this analysis, staff time for annual inspections has been counted under Element 4.3, while staff time for maintenance and repairs is counted under Elements 5.2 and 5.4.

Like the IDDE program, staff training on development review will likely be conducted by an outside trainer in Year 1. Follow-up training in Years 2 through 5 can be conducted internally or through online webcasts or archived presentations.

Annual Staffing Needs and Funding—4,100 staff hours (2.4 FTE) and \$194K in Year 1 to maintain current staffing levels in plan review and add half of the needed facility inspections. This funding level includes \$5,000 to hire an outside trainer. The program should be ramped up to approximately 5,400 staff hours (3.15 FTE) and \$250K in Years 2 through 5 to add the necessary level of

construction site and facility inspections. This funding level includes \$3,500 per year to pay for ongoing training courses and materials.

Element 5: Pollution Prevention and Operation and Maintenance for Municipal Operations

Element 5 covers the Operation and Maintenance (O&M) activities related to the stormwater management. This includes annual inspection and maintenance of stormwater facilities, catch basins, and culverts. Road and City property maintenance activities must also implement practices to reduce stormwater impacts. As with Elements 3 and 4, Element 5 also includes requirements for staff training and record keeping.

In general, the City's existing O&M activities are close to meeting the requirements of the Phase II permit. O&M crews conduct maintenance and repair of facilities as the needs are identified, so only a small staff increase was identified in conjunction with the increased facility inspections required with Element 4.2. The City's catch basin inspection and maintenance program is adequate for the downtown area, but additional time is needed to extend the program to outlying areas. With this increased facility inspection and maintenance, the City needs to increase efforts to track and maintain records of O&M activities. While O&M crews work from work orders and fill out inspection forms after inspecting facilities, a system is needed to track maintenance frequency and schedule future work, including the preparation of annual O&M Programs to justify annual budget requests. Staff time must also be allocated to correlate work orders and activities to the Phase II requirements.

The City has adopted a road maintenance manual that outlines Best Management Practices (BMPs) for both routine road maintenance and work in critical or sensitive areas. The BMPs are similar to those found in the 2005 Ecology Manual. O&M crews conduct street sweeping of the downtown area and inspect (and clean as necessary) all roadside ditches and cross culverts on an annual basis. For non-roadway City property, a comprehensive maintenance manual needs to be compiled to document existing practices and ordinances.

The City will need to add a program to spot check facilities after storm events. While spot checks are only required after storm events with a 10-year or greater recurrence interval, it is recommended that crews spend half a day after any major storm inspecting known problem areas and ensuring that facilities are operating properly. The hours allotted (100 per year) assume that this type of "drive by" inspection will occur approximately twice per year.

The City also needs to set aside dedicated time for staff training. The O&M Supervisor, Crew Chief, and two rotating staff members should attend an annual training, while the remaining staff will receive bi-monthly refresher courses on limited topics (i.e. proper installation of silt fences, facility inspection, etc.) during staff meetings. It is assumed that this refresher training will be conducted by the engineering staff or O&M Supervisor.

Annual Staffing Needs and Funding—Approximately 7,700 staff hours (4.5 FTE) and \$358K is needed in Year 1 to maintain current staffing levels and add the needed catch basin inspection and record keeping. The program should be increased to 8,100 staff hours (4.7 FTE) and \$370K per year as soon as possible to fill the gaps in the existing maintenance program and ensure long term functioning of the stormwater infrastructure. The full program must be in place by Year 3. The funding level includes \$2,000 per year to pay for training classes.

Element 6: Program Implementation

Most elements required with Program Implementation overlap with other program activities. SWMP Documentation (6.2) and Program Tracking (6.3) are covered by the submittal of annual reports in Element 9.1. By implementing the SSWM activities outlined in Elements 1 through 5, the City will also meet the requirements to reduce pollutant discharge to the Maximum Extent Practicable (Element 6.4). Additional staff time has been allocated to manage the SSWM Program. This includes coordination between departments, long term planning, identifying staffing needs, and assigning responsibilities to the many City staff that contribute to the SSWM Program.

Annual Staffing Needs and Funding—380 staff hours (0.22 FTE) and \$17,500 per year for SSWM Program management.

Element 7: Total Maximum Daily Load Allocations

The City is not subject to any TMDL guidelines at this time. As such, no dollars or FTE have been allocated to this program element. However, compliance with TMDL guidelines is a major element of the Phase II Permit, and the City should be mindful of any future TMDLs that may affect their program.

Annual Staffing Needs and Funding—None at this time.

Element 8: Monitoring

As a jurisdiction with a population less than 25,000, the City's monitoring requirements are relatively minor for this permit cycle. The City is required to prepare for future monitoring by identifying suitable sites for future monitoring and developing a monitoring plan for each of those sites. The City is well ahead of most local jurisdictions and is already working with the Washington State Department of Ecology (DOE) to develop a comprehensive water quality monitoring program. Because the City's monitoring program is expected to be more extensive than the requirements of the Phase II Permit, only a small amount of staff time has been allocated to this element..

Annual Staffing Needs and Funding—48 staff hours (0.03 FTE) and \$2,200 in Years 4 and 5 to verify that the City's monitoring program meets the Phase II Permit requirements.

Element 9: Reporting

The reporting requirements include ongoing tracking of NPDES activities and the submittal of an annual report using forms and formats supplied by DOE. While the City's existing "green sheets" provide some of the necessary tracking information, additional time is needed on a monthly basis to review staff hours and correlate them to the various NPDES activities and track progress toward upcoming milestones and deadlines. The City has expressed an interest in developing an electronic tracking tool (using a software program like Microsoft Project or ASIST) that could aid in this effort.

Staff time is also needed on an annual basis to fill-out the necessary DOE reporting forms, compile the necessary supporting data, and submit the annual report. This effort will begin in Year 2 and should always be followed by appropriate archiving of all documents.

Annual Staffing Needs and Funding—600 staff hours (0.36 FTE) and \$28K in Year 1 to collect and track program activities. 700 staff hours (0.41 FTE) and \$37K in Years 2 through 5 to continue tracking activities and prepare the annual report for DOE submittal.

Element 10: Additional Regulations

The City is subject to a number of additional regulations affecting stormwater management including the Underground Injection Control (UIC) Rule and the Puget Sound Water Quality Management Plan (PSWQMP). Other regulations, like the Endangered Species Act and the State Water Resource Inventory Area (WRIA) regulations also apply, but do not result in specific SSWM program activities at this time.

The activities required for compliance with the UIC Rule will depend on the number and type of UIC facilities owned and operated by the City. It is recommended that the City conduct a thorough review of the State UIC Rule in Year 1 to identify the needed compliance activities. Staff and funding allocations for Years 2 through 5 assume that the City will need a relatively minor program based on the limited number of known UIC facilities.

Most of the 13 focus areas of the PSWQMP overlap with NPDES elements. However, three areas (Identification and Ranking of Problems, Watershed or Basin Planning, and Adequate Local Funding) will require additional City activities. It is recommended that the City begin the watershed/basin planning process by developing plans for the urbanizing watersheds first. It is assumed that these plans will be developed by professional consultants under the management of City staff. The hours and funding assigned to this task assume that two basin plans will be developed during this permit cycle. The requirement to develop adequate local funding is currently being addressed through this study and the review of the City's existing Stormwater Utility rate structure.

Annual Staffing Needs and Funding—40 hours (0.02 FTE) and \$12K in Year 1 to hire a consultant to review the UIC program. 4,000 hours (0.23 FTE) and \$108K in Years 2 through 5 to run the UIC program and conduct basin studies. The funding level in Years 2 through 5 includes \$75K per year to pay for the basin studies.

Element 11: Local Stormwater Activities

Element 11 covers the activities that are necessary for running a successful SSWM program, but are not specifically required by other regulations. The majority of the 2006 Local Activities expenditure went to Professional Services (\$420K). However, the \$380K of that expenditure covered the consultant fees to development of the Water Quality and Groundwater monitoring plans. As those plans should soon be completed, the professional service fees for future years have been reduced to approximately \$50K.

The costs to run the water quality and groundwater monitoring programs in future years have been included as separate line items, where only 1/3 of those program costs will be covered by the SSWM Program. The monitoring programs require a staffing increase to collect and process the necessary sampling data. The programs will also require significant funding to pay for lab fees.

Element 11 also includes the operation of the decant facility. Because the facility has only been operating for several months, the actual cost to haul waste from the facility and associated dumping fees will not be known for another year. This analysis assumes two haulings will be needed two days per month and annual dumping fees will be \$25K. The City's Natural Resource Team is also included as a Local Stormwater Activity, as many of the topics discussed at the team meetings pertain to surface or stormwater management.

Annual Staffing Needs and Funding—Approximately 1540 staff hours (0.6 FTE) and \$180K per year to run the Water Quality and Groundwater Monitoring programs, operate the decant facility, and continue the Natural Resources Team. Of that total, \$50K per year is allotted to professional services.

Element 12: Program Overhead

Nearly one quarter of the SSWM Program budget is allocated to Program Overhead. Most of the elements are fixed costs related to general city management and overhead costs. Element 12 includes the portions of the City's operating leases, insurance and utilities paid for by the SSWM fund. The SSWM fund also pays for portions of salaries for multiple staff in the Executive and Finance Departments. While the percentage of each salary paid by the SSWM fund is minor, the total cost adds up to 0.5 FTE and nearly \$40K. Element 12 also includes intergovernmental transfers and debt service cost. Both of which should remain constant in future years. There may be some adjustment to Utility Overhead (Element 12.2) based on how the City chooses to operate the stormwater utility. Recommended changes are being made in the City's Utility Rate Study being conducted concurrently with this analysis, though the adjustments are expected to be minor. For this analysis, the Program Overhead staffing and funding are expected to remain constant over the next five years.

Annual Staffing Needs and Funding—Approximately 850 staff hours (0.5 FTE) and \$588K per year to cover current Program Overhead expenses.

Element 13: Capital Projects and Equipment

The City is in the process of updating the SSWM Capital Improvement Project (CIP) list for 2007 through 2012. Stormwater projects fall into two categories—Drainage & Treatment and Habitat. Each year, approximately \$115K is budgeted for the Drainage/Culvert Upgrade program and \$60K is budgeted for Fish Passage Improvements. This funding allocation allows the engineering and O&M staff to identify problem areas that need immediate attention. The remaining stormwater projects have been identified through the City's planning process and are slated for construction over the next six years.

In addition to the projects listed in the 2007 CIP list, the City will need to drill a groundwater monitoring well to support the long term Groundwater Monitoring study. City staff have identified the cost of the well drilling at \$230K in Year 2, with 1/3 of that cost coming from the SSWM fund.

Staffing levels are projected to remain constant over the five years of the permit, though years with fewer projects may result in less required staff time.

In 2001, Kato & Warren prepared the *City of Bainbridge Island, Surface Water Management Plan*, which identified over 150 additional potential projects spread throughout the City's 12 drainage basins. Many of the projects were identified as future needs based on development progress throughout the City. However, 14 projects were identified as priority actions, some of which overlap with the existing CIP list. At this time, the projects identified in the Kato & Warren study have not been included in this program. The projects need to be re-evaluated and prioritized with a review and update of cost estimates, so that they can be added to the CIP list.

The estimated equipment costs are based on the City's Master Fleet List, which includes the entire City vehicle fleet and identifies cost and years for replacement. Each vehicle is assigned to a particular department, which is responsible for future replacement.

Annual Staffing Needs and Funding—2900 hours (1.7 FTE) in each year. Funding varies between \$586K and \$925K, depending on the projects identified for a given year.

Total Program Cost

The total SSWM Program descriptions, milestones, staffing needs, and costs are detailed in the attached spreadsheet report. SSWM Program funding can be divided into four major categories: Regulatory Program Activities (Program Elements 1-10), Local Stormwater Activities (Element 11), Program Overhead (Element 12), and CIP and Equipment (Element 13). The total SSWM annual funding and staffing needs are summarized in Table 1.

Table I Total SSWM Program Costs						
	Existing 2006	Year 1 2007	Year 2 2008	Year 3 2009	Year 4 2010	Year 5 2011
Staffing Level	9.4 FTE	11.4 FTE	12.6 FTE	12.6 FTE	12.6 FTE	12.5 FTE
Regulatory Program Activities	\$558K	\$735K	\$913K	\$907K	\$896K	\$888K
Local Stormwater Activities	\$558K	\$179K	\$170K	\$178K	\$182K	\$192K
Program Overhead	\$588K	\$588K	\$588K	\$588K	\$588K	\$588K
CIP and Equipment	\$1,094K	\$708K	\$583K	\$713K	\$760K	\$925K
Total	\$2,798K	\$2,210K	\$2,254K	\$2,386K	\$2,426K	\$2,593K

Comparison to City Budget

The City of Bainbridge Island—2006 Final Budget allots \$2,691K and 8.3 FTE to the SSWM Program. This program analysis identifies \$2,798K and 9.4 FTE in actual expenditure for the current year. Much of this discrepancy is the result of City staff whose activities contribute to NPDES compliance, but whose salaries are not actually paid for by the SSWM fund. One primary example is in development review. The development review engineers conduct plan review and construction inspection, which is a requirement of NPDES element 4.2—*Site Plan Review and Permitting*. David Nelson, Renzo Toggia, and Steve Kindred have each historically spent approximately 700-800 hours per year on SSWM related activities, but their salaries are fully paid for by Building & Development Services and the General Fund. In addition, Melva Hill spends the majority of her time (1,000 hours/year) on SSWM activities, but only 20 percent of her salary is paid for by the program. The same is true of the capital program, where the SSWM program is only paying 1.0 FTE in salaries, but is receiving 1.7 FTE worth of staff services. On the other hand, the SSWM program is overpaying for O&M activities. The SSWM program pays for 5.3 FTE in O&M activities, but is only receiving 4.0 FTE worth of staff services. These between budgeted and actual staffing and funding levels differences are documented in the attached spreadsheet report.

Observations

Some general observations stemming from this gap analysis are as follows:

- The City’s existing SSWM Program provides adequate staffing and funding to comply with many of the Phase II permit requirements for Public Education and Outreach. All other aspects of the program need a boost in funding and/or staff resources to complete all the required tasks.

- The largest staffing needs are in Development plan review, construction observation, and facility inspection (1.0 additional FTE by Year 2), O&M (0.7 FTE by Year 2), and the monitoring studies (0.6 FTE immediately).
- Additional staffing in smaller levels are needed for IDDS (including stormwater system mapping, program implementation, and tracking and reporting to bring the total staffing need from 9.4 to 12.6 FTE by Year 2.
- A significant task is the mapping of the storm sewer system using GIS software. While the hours required do not warrant a full time hire, the project will require significant field time and focused office attention. The City may benefit from hiring an intern specifically to work on system mapping.
- The SSWM program currently pays for a percentage of many administrative salaries within the Public Works Department. However, administrative staff are not assigned to a particular program. Some of the SSWM staffing needs could be achieved by dedicating a half time administrative staff member to the SSWM Program. A trained administrative professional could accomplish much of what is required by the following elements:
 - Element 2.2—Availability of Documents (24 hours/year)
 - Element 4.4—Maintenance and Inspection Records (200 hours/year)
 - Element 5.9—O&M Record Keeping (300 hours/year)
 - Element 9.3—Ongoing Tracking (600 hours/year)
- The City's current SSWM budget does not pay for staff salaries that are performing development plan review. Initially, this looks like a potential gap in the program. However, the development review salaries are being paid for primarily out of the Building & Development Services Fund (B&DS), which collects development review fees on every project. Development Plan Review (Element 4) is an area where the City can receive credit for meeting NPDES compliance goals that does not necessarily need to be funded through the SSWM fund. In fact, by paying for development plan review out the B&DS Fund, the City ensures that developers, not existing citizens, are paying for the needed review and inspection through their development review fees. Regardless of where the funding is coming from, this analysis does identify the need for an additional 1.0 FTE beginning in Year 2.
- The City's existing budget is paying for 5.3 FTE in the O&M department, but the analysis of the existing program shows that only 4.0 FTE worth of work can be credited to stormwater related activities (including all street sweeping, ditch clearing, catch basin cleaning, and facility maintenance). This means that the SSWM program is subsidizing another City program by paying for their O&M costs, amounting to 1.3 FTE of staff time annually.
- The proposed Groundwater Monitoring program is identified as a future funding need within the SSWM Program. However, initial funding for the Groundwater Study was provided from the Water Utility. Because the City's drinking water supply is directly influenced by groundwater quality, a policy decision should be made regarding the appropriate fund source for the ongoing monitoring program.

- Capital and Equipment funding shows a reduction in need because the comparison year (2006) was a year of unusually high capital project costs for the City. Capital project costs in 2006 total \$790K (independent of design labor costs), which includes \$440K for the Decant Facility. Future years' expenses are still significant, though lower than the 2006 total.
- The City's capital program should consider the need for long term system replacement. As the existing infrastructure ages, it will be easier to replace the degraded infrastructure in sections, rather than wait until a widespread system replacement is required. One strategy to aid in system replacement is to require new infrastructure projects to upsize (or at least evaluate the condition) of the downstream system. Infrastructure aging (i.e. depreciation) and replacement should be considered in the City's concurrent funding and rate study.
- In comparing the program needs to existing expenditures, it is important to note that existing program estimates are based on the 2006 budget year. That budget year includes \$820K in unusual expenses to pay for the construction of the Decant facility (\$440K) and the Water Quality and Groundwater studies (\$380K). Because the SSWM program is currently so heavily subsidized by the General Fund, it would be more appropriate to look at the overall funds required to operate the program over the next five years and develop a funding package that will meet that need.

Conclusions

The City's existing SSWM Program is slightly under funded and understaffed in several key areas including development plan review, O&M, and the monitoring program. Additional staff time will also be needed to meet the Phase II permit requirements for ongoing tracking, record keeping, and annual reporting.

The SSWM Program will likely need to add an additional 3.0 FTE by Year 2 to meet all of the regulatory deadlines. The implementation plan shows that the City should add 2.0 FTE in Year 1 and 1.0 FTE in Year 2. However, City staff would prefer to request just 1.0 additional FTE for Year 1 (2007) and look for ways to improve efficiency within the existing program activities. Staff added in Year 1 will need to be focused on the Water Quality and Groundwater Monitoring programs. It would also be advisable to dedicate a half time administrative staff member to the SSWM program to develop a method or system to track NPDES activities. Staff added in Year 2 (2008) can be dedicated to Development Review and Inspection and O&M.

The total future annual funding needed for the SSWM Program is less than the total existing (2006) expenditure. This is generally due to the large capital expenditure for the decant facility in 2006, which artificially inflates the existing SSWM budget. Funding for regulatory activities (Elements 1 through 10) to needs to increase by \$350K by Year 2 in order to meet the requirements of the Phase II Permit. Local Program Activities funding can be greatly reduced by transferring 2/3 of the Water

Quality and Groundwater monitoring costs to the City's general fund. Capital and Equipment costs range from \$583K to \$925K, depending on the projects slated for each year.

Another way to look at the program funding needs is to compare the funds required to run the SSWM program with the Stormwater Utility Revenue. The projected 2006 revenue from Stormwater Utility fees is \$1,063K. Over 60 percent of the 2006 SSWM Program is funded through other sources, primarily the General Fund. In future years, the stormwater utility will fund just 40 to 50 percent of the needed activities. This leaves a funding gap of over \$1,000K that must be filled from the General Fund unless other revenue sources are developed.

Next Steps

This technical memorandum is the third in a series of memorandums to analyze the City's SSWM Program with respect to upcoming NPDES guidelines. Technical Memorandum #4 reviews the funding options that the City may consider in finance the needed program enhancements. The final step is to incorporate all of the previous memorandums into a final report. The final report is expected to be complete in the fall of 2006 to correspond with the City's budget process.

Attachments

- Stormwater Management Program Gap Analysis and Costs spreadsheet

**CITY OF BAINBRIDGE ISLAND
SURFACE AND STORMWATER SYSTEM PLAN**

Stormwater Management Program Gap Analysis and Costs

September 25, 2006



CITY OF BAINBRIDGE ISLAND

Stormwater Management Program Gap Analysis and Costs

September 25, 2006

Comparison to Existing City Budget

<u>Program Elements/Regulatory Requirements</u>	<u>2006 Budget</u>		<u>Existing Activities</u>	
	Dollars	FTE	Dollars	FTE
SWMP Element #1 - Public Education and Outreach	\$38,600	0.05	\$39,300	0.06
SWMP Element #2 - Public Involvement and Participation	\$0	0.00	\$0	0.00
SWMP Element #3 - Illicit Discharge Detection and Elimination	\$25,400	0.40	\$29,600	0.45
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites	\$34,100	0.60	\$163,900	2.18
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations	\$402,800	5.30	\$307,600	4.03
SWMP Element #6 - Program Implementation	\$0	0.00	\$0	0.00
SWMP Element #7 - Total Maximum Daily Load Allocations (does not apply to Bainbridge Island)	\$0	0.00	\$0	0.00
SWMP Element #8 - Monitoring	\$0	0.00	\$0	0.00
SWMP Element #9 - Reporting	\$17,100	0.20	\$17,900	0.21
SWMP Element #10 - Additional Regulations	\$0	0.00	\$0	0.00
	\$518,000	6.55	\$558,300	6.94
<u>Local Stormwater Activities</u>				
SWMP Element #11 - Local Stormwater Activities	\$593,600	0.75	\$558,000	0.32
<u>Program Overhead</u>				
SWMP Element #12 - Program Overhead	\$547,000	0.50	\$587,600	0.50
<u>Capital Projects and Equipment</u>				
SWMP Element #13 - Capital Projects and Equipment	\$1,038,700	1.0	\$1,093,900	1.7
Total Program Cost for All Elements	\$2,697,300	8.8	\$2,797,800	9.4

*Staff levels shown are overview only. Review analysis assumptions, activities required under each element, and required FTE in detailed Gap Analysis spreadsheets.



CITY OF BAINBRIDGE ISLAND
Stormwater Management Program Gap Analysis and Costs

September 25, 2006

Overall Program Requirements - Funding

<u>Program Elements/Regulatory Requirements</u>	2006 Budget	Existing Activities	<u>Annual Required Program Funding*</u>				
			Year 1	Year 2	Year 3	Year 4	Year 5
SWMP Element #1 - Public Education and Outreach	\$38,600	\$39,300	\$41,900	\$41,900	\$41,900	\$41,900	\$41,900
SWMP Element #2 - Public Involvement and Participation	\$0	\$0	\$14,200	\$1,100	\$1,100	\$1,100	\$1,100
SWMP Element #3 - Illicit Discharge Detection and Elimination	\$25,400	\$29,600	\$69,400	\$77,400	\$73,000	\$65,600	\$58,300
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites	\$34,100	\$163,900	\$194,100	\$253,400	\$250,600	\$250,600	\$250,600
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations	\$402,800	\$307,600	\$357,900	\$375,900	\$377,800	\$371,200	\$371,200
SWMP Element #6 - Program Implementation	\$0	\$0	\$17,500	\$17,500	\$17,500	\$17,500	\$17,500
SWMP Element #7 - Total Maximum Daily Load Allocations (does not apply to Bainbridge Island)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
SWMP Element #8 - Monitoring	\$0	\$0	\$0	\$0	\$0	\$2,200	\$2,200
SWMP Element #9 - Reporting	\$17,100	\$17,900	\$28,100	\$37,100	\$37,100	\$37,100	\$37,100
SWMP Element #10 - Additional Regulations	\$0	\$0	\$11,800	\$108,400	\$108,400	\$108,400	\$108,400
	\$518,000	\$558,300	\$734,900	\$912,700	\$907,400	\$895,600	\$888,300
<u>Local Stormwater Activities</u>							
SWMP Element #11 - Local Stormwater Activities	\$593,600	\$558,000	\$179,100	\$170,400	\$177,900	\$182,000	\$192,100
<u>Program Overhead</u>							
SWMP Element #12 - Program Overhead (may change based on financial analysis)	\$547,000	\$587,600	\$587,600	\$587,600	\$587,600	\$587,600	\$587,600
<u>Capital Projects and Equipment</u>							
SWMP Element #13 - Capital Projects and Equipment	\$1,038,700	\$1,093,900	\$708,400	\$583,100	\$713,400	\$760,400	\$925,400
Total Program Cost for All Elements	\$2,697,300	\$2,797,800	\$2,210,000	\$2,253,800	\$2,386,300	\$2,425,600	\$2,593,400

*Dollars shown are overview only. Review analysis assumptions, activities required under each element, and required FTE in detailed Gap Analysis spreadsheets.



CITY OF BAINBRIDGE ISLAND

Stormwater Management Program Gap Analysis and Costs

September 25, 2006

Overall Program Requirements - Staffing

<u>Program Elements/Regulatory Requirements</u>	2006 Budget	Existing Activities	<u>Annual Staffing Levels (Full Time Equivalents)*</u>				
			Year 1	Year 2	Year 3	Year 4	Year 5
SWMP Element #1 - Public Education and Outreach	0.05	0.06	0.09	0.09	0.09	0.09	0.09
SWMP Element #2 - Public Involvement and Participation	0.00	0.00	0.12	0.01	0.01	0.01	0.01
SWMP Element #3 - Illicit Discharge Detection and Elimination	0.40	0.45	0.52	0.67	0.61	0.58	0.49
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites	0.60	2.18	2.41	3.18	3.14	3.14	3.14
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations	5.30	4.03	4.52	4.75	4.78	4.69	4.69
SWMP Element #6 - Program Implementation	0.00	0.00	0.22	0.22	0.22	0.22	0.22
SWMP Element #7 - Total Maximum Daily Load Allocations (does not apply to Bainbridge Island)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWMP Element #8 - Monitoring	0.00	0.00	0.00	0.00	0.00	0.03	0.03
SWMP Element #9 - Reporting	0.20	0.21	0.36	0.41	0.41	0.41	0.41
SWMP Element #10 - Additional Regulations	0.00	0.00	0.02	0.23	0.23	0.23	0.23
	6.55	6.94	8.26	9.57	9.50	9.41	9.32
<u>Local Stormwater Activities</u>							
SWMP Element #11 - Local Stormwater Activities	0.75	0.50	0.93	0.84	0.94	0.96	0.94
<u>Program Overhead</u>							
SWMP Element #12 - Program Overhead (may change based on financial analysis)	0.50	0.50	0.50	0.50	0.50	0.50	0.50
<u>Capital Projects and Equipment</u>							
SWMP Element #13 - Capital Projects and Equipment	1.00	1.69	1.70	1.70	1.70	1.70	1.70
Total Staffing for All Elements	8.8	9.6	11.4	12.6	12.6	12.6	12.5

*Staff levels shown are overview only. Review analysis assumptions, activities required under each element, and required FTE in detailed Gap Analysis spreadsheets.



**CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS**

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
SWMP Element #1 - Public Education and Outreach																
S5.C.1.a 1.1 Outreach to Two Target Audiences	Implement or participate in an education and outreach program targeting a minimum of two of the following audiences: - general public concerning impervious surfaces and minimizing runoff; - homeowners concerning natural yard care; - homeowners concerning pesticides and fertilizers; - general public concerning automotive chemicals and hazardous cleaning supplies; - development community concerning stormwater technical standards; - development community concerning LID techniques; - small businesses concerning illicit discharge; - general public concerning environmental stewardship.	Year 2	100	\$39,300	100%	City's consultant already reaches at least three of the target audiences: -homeowners concerning natural yard care; homeowners concerning pesticides and fertilizers; -small businesses concerning illicit discharge. Consultant contract is for \$35,000/year. No additional activities are required if the program continues in the same manor. Some additional staff time is allotted to oversee the program and track consultant activities.	150	\$41,900	150	\$41,900	150	\$41,900	150	\$41,900	150	\$41,900
S5.C.1.b 1.2 Measure Results of the Educational Activities	Participate in an effort to measure understanding and adoption of the targeted behaviors among the target audiences.	Year 4	See 1.1	See 1.1	100%	Current consultant contract includes activities to measure results of outreach activities. Dollars and FTE included in Element 1.1.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
S5.C.1.c 1.3 Maintain Records	Track and maintain records of public education and outreach activities.	With Annual Report	See 1.1	See 1.1	100%	Included with Element 9.2. No dollars or FTE counted here.										
Public Education and Outreach TOTAL FTE and FUNDING			100	\$39,300	0.06	FTE	0.09	\$41,900	0.09	\$41,900	0.09	\$41,900	0.09	\$41,900	0.09	\$41,900
GAP IN EXISTING PROGRAM							0.03	\$2,600	0.03	\$2,600	0.03	\$2,600	0.03	\$2,600	0.03	\$2,600
SWMP Element #2 - Public Involvement and Participation																
S5.C.2.a 2.1 Input to SWMP	Create opportunities for public to participate and comment on the development of the SWMP.	Year 1	0	\$0	0%	Recommended Strategy: Set-up public meetings and/or provide response locations on the website for public to comment on stormwater activities. If web-based comments are collected, publicize availability of documents.	200	\$14,200	0	\$0	0	\$0	0	\$0	0	\$0
S5.C.2.b 2.2 Availability of Stormwater Program Documents	Post the SWMP and the Annual Report on the City Website; Make all final program documentation available to the public.	March 31 Each Year	0	\$0	0%	Post the SWMP and Annual Report on the website. Maintain copies of final program documents at City Hall that can be reviewed or copied by the public.	0	\$0	24	\$1,104	24	\$1,104	24	\$1,104	24	\$1,104
Public Involvement TOTAL FTE and FUNDING			0	\$0	0.00	FTE	0.12	\$14,200	0.01	\$1,104	0.01	\$1,104	0.01	\$1,104	0.01	\$1,104
GAP IN EXISTING PROGRAM							0.12	\$14,200	0.01	\$1,104	0.01	\$1,104	0.01	\$1,104	0.01	\$1,104

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements			Existing Program			"Gap" Between Required Activities and Existing Program	Required Cost and Staff Levels									
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete		Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
SWMP Element #3 - Illicit Discharge Detection and Elimination																
S5.C.3.a 3.1 Storm Sewer System Map	Develop a municipal storm sewer system map of all storm sewer outfalls, receiving waters, and structural stormwater facilities; Include: -Tributary drainage areas and land use; -Authorized connection points; -Closed depressions; Map should be in GIS format with fully described mapping standards	Year 4	200	\$2,400	5%	City mapping only documents locations of some outfalls. By the end of Year 4, all outfalls, tributary areas, and stormwater facilities must be located and mapped in a GIS format. This is a major task requiring additional GPS equipment and extensive staff time. Staff must be proficient in GIS mapping software or contract the task to an outside consultant.	160	\$15,860	320	\$14,720	320	\$14,720	200	\$9,200	120	\$5,520
S5.C.3.b 3.2 Illicit Discharge Ordinance	Develop and implement an ordinance prohibiting non-stormwater discharge to the MS4. The ordinance should cover: -Potable water flushing; -Lawn and landscape irrigation runoff; -Swimming pool discharges; -Street and sidewalk wash water; The ordinance must include escalating enforcement procedures and actions and an enforcement strategy.	Year 2	See 4.1	See 4.1	10%	Existing ordinance needs to be reviewed and updated to include all elements outlined in the Phase II Permit. The ordinance must include enforcement procedures.	150	\$6,900	150	\$6,900	0	\$0	0	\$0	0	\$0
S5.C.3.c 3.3 Detection and Elimination Program	Develop and implement program to detect and address non-stormwater discharges, spills, illicit connections and illegal dumping. Include procedures for: -Locating priority areas based on land use, previous complaints, and storage practices; -Identifying 3 priority receiving waters; -Field assessment during dry weather of outfalls in 3 priority receiving waters; Once a problem is reported or identified: -Characterizing nature and potential threat of illicit discharges; -Tracing the source of illicit discharge; -Notifying property owners; -Removing the source and conducting follow-up inspections	Permit End Year 3 Year 4 7 days after complaint 21 days after 180 days after	286	\$13,618	75%	Based on ordinance developed in 3.2, document a program for detecting and eliminating illicit discharges as described at left. The Center for Watershed Protection (CWP) has a guidance manual for developing a successful IDDE program. Program should continue City's current practice of site specific investigations when problems are reported by the public or city staff. Add proactive investigations (field assessments) in Years 3, 4, and 5 for outfalls to priority receiving waters.	300	\$33,800	300	\$33,800	380	\$37,480	460	\$41,160	380	\$37,480
S5.C.3.d 3.4 Public Education and Spill Reporting	Inform public employees, businesses, and general public of hazards associated with illegal discharges; Can be incorporated with Element 1.1 Publicly list and publicize a hotline for public reporting of spills and illicit discharges; Keep records of calls and follow-up actions taken.	Permit End Year 2	286	\$13,618	90%	Public education is incorporated with Element 1.1. New activity includes identifying a phone number and advertising the hotline on the website where public can report spills and illicit discharges. Continue to track public input (green sheets), as well as phone calls and follow-up actions.	280	\$12,880	330	\$15,180	280	\$12,880	280	\$12,880	280	\$12,880

**CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS**

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
S5.C.3.e 3.5 Program Evaluation and Tracking	Track number and type of spills identified, inspections made, and feedback from public education efforts. Included with Element 9.2	With Annual Report	0	\$0	0%	Included with Element 9.2. No dollars or FTE included here.										
S5.C.3.f 3.6 Staff Training	Train responsible staff on illicit discharge identification, investigation, clean-up, and reporting; Ongoing training for all municipal field staff on identification and reporting.	Year 2.5 Year 3	0	\$0	0%	Conduct training in Year 2 for engineering department staff who would respond to IDDE complaints. Conduct training in Year 3 for all municipal operations staff on identifying illicit discharges and proper reporting procedures.	0	\$0	40	\$6,840	64	\$7,944	52	\$2,392	52	\$2,392
Illicit Discharge TOTAL FTE and FUNDING			772	\$29,636	0.45	FTE	0.52	\$69,440	0.67	\$77,440	0.61	\$73,024	0.58	\$65,632	0.49	\$58,272
GAP IN EXISTING PROGRAM							0.07	\$39,804	0.22	\$47,804	0.16	\$43,388	0.13	\$35,996	0.04	\$28,636
SWMP Element #4 - Controlling Runoff from New Development, Redevelopment, and Construction Sites																
S5.C.4.a 4.1 Stormwater Runoff Control Ordinance	Adopt an ordinance to address runoff from new development, redevelopment, and construction site projects disturbing 1 or more acre. The ordinance should include: -Minimum requirements and thresholds equivalent to the 2005 Ecology Manual; -BMP selection and design criteria equivalent to the 2005 Ecology Manual; -Legal authority for inspection of private facilities discharging to the MS4; -Provisions to allow LID techniques to reduce impervious surfaces; -Guidelines and for applying Ecology's "erosivity waiver" (if applicable)	Year 2	68	\$3,421	95%	City's existing ordinance adopts the 2005 Ecology Manual. Ordinance should be reviewed in Year 2 to ensure it meets all elements of the final Phase II Permit, including providing legal authority for inspections of private facilities and allowing LID techniques, where applicable.	24	\$1,104	60	\$2,760	0	\$0	0	\$0	0	\$0
S5.C.4.b 4.2 Site Plan Review and Permitting	Develop a permitting process with plan review, inspection, and enforcement to ensure that the ordinance guidelines (Element 4.1) are applied to all sites disturbing 1 acre of land or greater. Inspection should apply to high risk sites prior to construction and all sites during and after construction.	Year 2	3,272	\$142,521	85%	Current project permitting process includes stormwater review by the Engineering department. Additional staff time is needed to ensure inspection of high risk sites prior to construction and all sites during and after construction - must achieve 95% of required inspections for compliance starting in Year 2.	3300	\$151,800	4100	\$188,600	4100	\$188,600	4100	\$188,600	4100	\$188,600
S5.C.4.c 4.3 Long Term Operation and Maintenance	Adopt an ordinance identifying parties responsible for maintenance and inspection of facilities permitted under Element 4.2; Adopt maintenance standards for facilities permitted under Element 4.2 consistent with the 2005 Ecology Manual; Inspect established facilities (water quality, flow control, and catch basins) annually; Inspect new water quality and flow control facilities every 6 months during building construction.	Year 2	270	\$8,919	25%	City's existing ordinance adopts the 2005 Ecology Manual with maintenance and inspection standards. Need program and schedule to inspect all water quality and flow control facilities on an annual basis. Need to establish methods for inspecting facilities where access is hindered by private structures (fences, etc) or lack of easements. Hours to inspect facilities during construction included in Element 4.2. Hours for maintenance included in Elements 5.2 and 5.4.	500	\$23,000	1000	\$46,000	1000	\$46,000	1000	\$46,000	1000	\$46,000

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements			Existing Program			"Gap" Between Required Activities and Existing Program	Required Cost and Staff Levels									
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete		Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
S5.C.4.d 4.4 Maintenance Inspection Records	Keep records of all inspections, enforcement actions, maintenance activities, and construction sites.		90	\$4,658	50%	Need to develop a tracking system to document maintenance inspections and schedule future activities. Office staff must be allocated to maintain records and correlate work to NPDES requirements	200	\$9,200	200	\$9,200	200	\$9,200	200	\$9,200	200	\$9,200
S5.C.4.e 4.5 NOI for Construction Activity	Make copies of the "Notice of Intent for Construction Activity" and/or "Notice of Intent for Industrial Activity" available to developers.	January 1, 2007	30	\$1,200	100%	Current staff time is adequate - will be absorbed by existing staff. Copies of permit application need to be made available at City Hall and/or on the website.	30	\$1,200	30	\$1,200	30	\$1,200	30	\$1,200	30	\$1,200
S5.C.4.f 4.6 Staff Training	Conduct training for staff in permitting, plan review, construction site inspection, and enforcement concerning the Stormwater Runoff Control program (Element 4.1); Maintain records of training.	Year 1	0	\$3,200	20%	The Engineering department needs training on the requirements on the 2005 Ecology Manual as well as on construction inspection requirements related to NPDES compliance. Planning department staff would like overall NPDES training and needs a refresher session on the NOI for construction activity. Much of this training can be conducted in-house or through web-based seminars offered by EPA and other agencies. A goal would be to have a half day training in Year 1 followed by 2-hour refresher courses each year.	60	\$7,760	46	\$5,616	46	\$5,616	46	\$5,616	46	\$5,616
Controlling Site Runoff TOTAL FTE and FUNDING			3,730	\$163,919	2.18	FTE	2.41	\$194,064	3.18	\$253,376	3.14	\$250,616	3.14	\$250,616	3.14	\$250,616
GAP IN EXISTING PROGRAM							0.22	\$30,145	1.00	\$89,457	0.96	\$86,697	0.96	\$86,697	0.96	\$86,697
SWMP Element #5 - Pollution Prevention and Operation and Maintenance for Municipal Operations																
S5.C.5.a 5.1 Adopt Maintenance Standards	Adopt maintenance standards consistent with the 2005 Ecology Manual;	Year 3	See 4.1	See 4.1	100%	Included in element 4.1. No dollars or FTE counted here.										
S5.C.5.b 5.2 Annual Inspections of Water Quality and Flow Control Facilities	Conduct annual inspections of stormwater treatment and flow control facilities; Perform necessary maintenance actions.	Years 3, 4 and 5	2,355	\$100,041	90%	Compliance is defined as scheduling inspection of all sites and achieving inspection of 95% of the sites. Inspections conducted under Element 4.3. Current hours for maintenance nearly adequate to address problems identified during inspections.	2355	\$108,330	2643	\$121,578	2643	\$121,578	2643	\$121,578	2643	\$121,578
S5.C.5.c 5.3 Spot Checks after Storm Events	Spot check stormwater treatment and flow control facilities after major storm events (>10-year recurrence interval); Conduct repairs as necessary.	After major storm events	0	\$0	0%	Allot crew time to spot check facilities after major storm events. Good practice spot check after any major storm (assume 2/year) rather than waiting for a 10-year event.	96	\$4,416	96	\$4,416	96	\$4,416	96	\$4,416	96	\$4,416
S5.C.5.d 5.4 Catch Basin Inspection	Inspect all catch basins and inlets at least once during the permit term; Clean catch basins as necessary; Dispose of decant water appropriately.	Permit End 4.2 requires annual inspection	1,460	\$66,105	80%	Current inspection cycle for culverts and downtown catch basins is adequate. Need to extend catch basin inspections to outlying areas. Perform necessary maintenance of culverts and catch basins.	1840	\$84,640	1840	\$84,640	1840	\$84,640	1840	\$84,640	1840	\$84,640

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
5.5 Road Maintenance S5.C.5.f	Implement practices to reduce stormwater impacts from street, parking lot, and highway runoff. Address the following activities: -Pipe and culvert cleaning; -Ditch and roadside vegetation management; -Street cleaning; -Street repair, resurfacing, and striping; -Snow and ice control; -Utility installation; -Dust control.	Year 3	2,930	\$132,052	100%	Current program conducts street sweeping downtown and cleans all roadside ditches annually. Existing road maintenance practices are adequate for program compliance.	3000	\$138,000	3000	\$138,000	3000	\$138,000	3000	\$138,000	3000	\$138,000
5.6 Non-Roadway Property Maintenance S5.C.5.g	Implement practices to reduce stormwater impacts from non-roadway property runoff (parks, open space, right-of-way, and maintenance yards). Address the following: -Application of fertilizer, pesticides, and herbicides; -Sediment and Erosion control; -Landscape maintenance and vegetation disposal; -Trash management; -Building exterior cleaning and maintenance.	Year 3	0	\$0	75%	Many of the facility maintenance guidelines are outlined in existing City ordinances. Allocate time to develop a comprehensive facilities maintenance manual (similar to the Road Maintenance Manual) that addresses issues related to stormwater. Most existing practices (and staff hours) are adequate to meet stormwater compliance activities.	0	\$0	64	\$2,944	64	\$2,944	0	\$0	0	\$0
5.7 Staff Training S5.C.5.h	Implement ongoing training activities for construction, maintenance, and operations personnel. Include training on: -O&M standards; -inspection procedures; -selecting appropriate BMPs; -Reducing water quality impact in daily activities; -Reporting of water quality concerns and illicit discharges. Maintain records of training.	Year 3	64	\$4,728	50%	Allot time for O&M supervisor, crew chief, and 2 rotating staff members to attend day-long trainings. Conduct refresher training for all O&M staff during staff meetings. Aim to cover 6 topics/year in short sessions. Training should also include facility maintenance staff to review guidelines developed in element 5.6. Note: Training sessions could cover multiple topics to meet requirements from Elements 1.1, 3.6, and 4.6	146	\$8,716	146	\$8,716	146	\$8,716	146	\$8,716	146	\$8,716
5.8 SWPPP for Maintenance Yards S5.C.5.i	Develop and implement Stormwater Pollution Prevention Plans for all equipment maintenance and storage yards not covered under the Industrial Stormwater General Permit. Include an implementation schedule for structural BMPs and conduct occasional visual inspection of discharge from the site.	Year 3	0	\$0	0%	Develop a SWPPP for the public works maintenance yard. The O&M guidelines for the decant facility are already in place.	0	\$0	40	\$1,840	80	\$3,680	0	\$0	0	\$0
5.9 Record Keeping S5.C.5.j	Maintain records of inspection and/or repair activities.	Ongoing	90	\$4,658	30%	Need to develop a system to track maintenance frequency and schedule future work. Office staff must also be allocated to correlate work orders and activities to NPDES requirements	300	\$13,800	300	\$13,800	300	\$13,800	300	\$13,800	300	\$13,800
Operation and Maintenance TOTAL			6,899	\$307,584	4.03	FTE	4.52	\$357,902	4.75	\$375,934	4.78	\$377,774	4.69	\$371,150	4.69	\$371,150
GAP IN EXISTING PROGRAM							0.49	\$50,318	0.72	\$68,350	0.74	\$70,190	0.66	\$63,566	0.66	\$63,566

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements		Existing Program			Required Cost and Staff Levels											
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
SWMP Element #6 - Program Implementation																
S5.A.1 6.1 SWMP Implementation	Develop and implement a SWMP that covers the geographic area subject to the permit. Included with Elements 1 through 5.	Permit End				Need staff time for management of SWMP program, coordination between departments, planning for future years, identifying staffing needs, and assigning responsibilities.	380	\$17,480	380	\$17,480	380	\$17,480	380	\$17,480	380	\$17,480
S5.A.2 6.2 SWMP Documentation	Prepare written documentation of the SWMP and maintain annual updates in accordance with Element 9.	March 31 Each Year				Compliance is achieved through timely submittals of annual reports (Element 9.1). No dollars of FTE counted here.										
S5.A.3 6.3 Program Tracking	Track the cost of development and implementation of the SWMP, including the number of inspections, enforcement actions, and public education activities. Include this information in the Annual Report.	March 31 Each Year				Compliance is achieved through timely submittals of annual reports (Element 9.1) and ongoing tracking (Element 9.2). No dollars of FTE counted here.										
S5.B 6.4 MEP and AKART	Design the SWMP to reduce discharge of pollutants from the MS4 to the Maximum Extent Practicable (MEP), meet State AKART requirements, and protect water quality. Continue to implement existing SWMP activities, even if they are ahead of the schedule of this permit.	N/A				Compliance is achieved through implementation of existing SWMP activities and the activities outlined in Elements 1 through 5. No dollars or FTE counted here.										
SWMP Implementation TOTAL			0	\$0	0.00	FTE	0.22	\$17,480	0.22	\$17,480	0.22	\$17,480	0.22	\$17,480	0.22	\$17,480
GAP IN EXISTING PROGRAM							0.22	\$17,480	0.22	\$17,480	0.22	\$17,480	0.22	\$17,480	0.22	\$17,480
SWMP Element #7 - Total Maximum Daily Load Allocations																
S7.A 7.1 Applicable TMDLs in Appendix 2	Comply with requirements of Appendix 2 of the Phase II permit (document here); When monitoring is required, submit a Quality Assurance Project Plan (QAPP) to Ecology.	N/A				No TMDLs apply. No dollars or FTE counted here.										
S7.B 7.2 TMDLs not listed in Appendix 2	Comply with requirements of the NPDES Phase II permit; Keep records and report activities relevant to applicable TMDLs.	N/A				Compliance is achieved through implementation of activities outlined in Elements 1 through 5 and submittal of annual reports (Element 9.1). No dollars or FTE counted here.										
S7.C 7.3 TMDLs Approved during the Permit Cycle	Comply with future permit modifications (if applicable); Permittees are encouraged to participate in developing TMDLs and begin implementation.	N/A				No TMDLs apply. No dollars or FTE counted here.										
TMDL TOTAL			0	\$0	0.00	FTE	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
GAP IN EXISTING PROGRAM							0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0
SWMP Element #8 - Monitoring																
S8.B 8.1 Existing Monitoring	Describe any stormwater monitoring or studies and type of information gathered; Assess the appropriateness of the BMPs in Element 4.1 and note any proposed changes.	March 31 Each Year	See 11.4	See 11.4	0%	Compliance is achieved through timely submittals of annual reports (Element 9.1). No dollars of FTE counted here.										
S8.C.1.a 8.2 Stormwater Monitoring	Prepare for future monitoring by identifying 1 commercial or high density residential outfall or conveyance suitable for permanent flow-weighted composite sampling equipment.	Permit End	0	\$0	0%	Identify sites for future monitoring. This will likely be accomplished through the City's existing Water Quality Monitoring Study (Element 11.4). Staff time will be needed to review the monitoring plan to ensure it covers the permit requirements	0	\$0	0	\$0	0	\$0	24	\$1,104	24	\$1,104

**CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS**

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
S8.C.1.b 8.3 SWMP Effectiveness Monitoring	Prepare for future monitoring by identifying 2 suitable questions that could be studied through future monitoring; Select sites for future monitoring to explore the answers to the selected questions; Develop a monitoring plan for each question including: -Statement of the problem and why it is significant; -Specific hypothesis about the problem; -Specific parameters of attributes to be measured; -Expected modifications based on outcome of the monitoring.	Permit End	0	\$0	0%	Identify questions that should be answered through future monitoring. Like element 8.2, this will likely be accomplished through the QAPP being developed as part of the City's existing Water Quality Monitoring Study (Element 11.4). Staff time will be needed to review the monitoring plan to ensure it covers the permit requirements.	0	\$0	0	\$0	0	\$0	24	\$1,104	24	\$1,104
S8.C.1.c 8.4 Runoff BMP Monitoring	BMP effectiveness monitoring does not apply to cities with a population less than 25,000.	N/A	0	\$0	0%	Not applicable.										
S8.C.2.a 8.5 Annual Reporting	Describe the status of identifying sites, questions, and BMP(s) outlined in Elements 8.2 through 8.4.	Years 3, 4, and 5	0	\$0	0%	Compliance is achieved through timely submittals of annual reports (Element 9.1). No dollars or FTE counted here.										
Monitoring TOTAL			0	\$0	0.00	FTE	0.00	\$0	0.00	\$0	0.00	\$0	0.03	\$2,208	0.03	\$2,208
GAP IN EXISTING PROGRAM							0.00	\$0	0.00	\$0	0.00	\$0	0.03	\$2,208	0.03	\$2,208
SWMP Element #9 - Reporting																
S9.A&B 9.1 Annual Reports	Submit annual reports each year on the previous year's NPDES Phase II activities. Use reporting forms supplied in Appendix 3 of the Phase II permit and submit applicable supporting documentation.	March 31 Each Year	0	\$0	0%	On an annual basis: Complete the annual permit reporting forms supplied in Appendix 3 of the Phase II permit and assemble supporting documentation. (Use tracking information developed in element 9.2.) Copy and collate all reporting material and submit to the appropriate agencies.	0	\$0	64	\$7,944	64	\$7,944	64	\$7,944	64	\$7,944
S9.C.2 9.2 Ongoing Tracking	To support annual report submittal, maintain records of: -Implementation status of each element in Elements 1 through 5; -Assessment of progress toward meeting minimum performance measures; -Activities implemented to comply with each element in Elements 1 through 5; -SWMP implementation schedule and plans for meeting future permit deadlines	Ongoing	358	\$17,912	50%	Throughout the year: -Track all storm and surface water activities completed by all City departments and correlate to Phase II permit requirements. -Document staff hours and money used to meet the various permit requirements. -Track progress toward meeting milestones outlined in the permit. -Identify programs or activities that are behind schedule. -Revise implementation schedule as needed to maintain realistic goals. On an annual basis: Summarize all information collected for inclusion in the annual report (Element 9.1).	610	\$28,060	610	\$28,060	610	\$28,060	610	\$28,060	610	\$28,060
S9.C 9.3 Maintaining Records	Maintain records of SWMP and permit activities for five years.	Ongoing	0	\$0	0%	Archive the records of SWMP activities as submitted to the Department of Ecology. Maintain those records in City files for at least five years.	0	\$0	24	\$1,104	24	\$1,104	24	\$1,104	24	\$1,104

**CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS**

Requirements			Existing Program			"Gap" Between Required Activities and Existing Program	Required Cost and Staff Levels									
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete		Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
S.D. 9.4 Public Access	Make all records of SWMP and permit activities available to the public at reasonable times during business hours.	Ongoing	0	\$0	0%	Included with Element 2.2. No dollars or FTE counted here.										
Reporting TOTAL			358	\$17,912	0.21	FTE	0.36	\$28,060	0.41	\$37,108	0.41	\$37,108	0.41	\$37,108	0.41	\$37,108
GAP IN EXISTING PROGRAM							0.15	\$10,148	0.20	\$19,196	0.20	\$19,196	0.20	\$19,196	0.20	\$19,196
SWMP Element #10 - Additional Regulations																
10.1 Underground Injection Control Rule	Comply with Washington State's UIC Rule, as outlined in WAC 173-218. The updated rule went into effect February 3, 2006 to incorporate federal UIC guidelines. Compliance includes registration of City owned and operated wells, as well as additional program elements.	Needs Review	0	\$0	0%	Compliance activities depend on the number and type of UIC facilities owned or operated by the City. First step is to conduct a thorough review of the State UIC Rule to identify the needed compliance activities and additional program costs. Hours and FTE are placeholder ONLY until program elements can be identified.	40	\$11,840	200	\$24,200	200	\$24,200	200	\$24,200	200	\$24,200
10.2 Puget Sound Water Quality Conservation and Recovery Plan	Many elements of the plan overlap with the NPDES Phase II requirements including: Stormwater Controls for New Development and Redevelopment, Stormwater Site Plan Review, Inspection of Construction Sites, Maintenance of Permanent Facilities, Source Control, Illicit Discharges and Water Quality, Public Education and Involvement, Low Impact Development Practices, Monitoring, and Schedule for Implementation	N/A	0	\$0	0%	The City will need to develop a plan and/or program to address: Identification and Ranking of Problems, Watershed or Basin Planning, and Adequate Local Funding Developing basin plans (with problems identified and ranked) for the 4 urbanizing basins is suggested. Funding shown here assumes two basin plans will be developed during this permit cycle. Funding requirements can be addressed through the updated SSWM financial plan.	0	\$0	200	\$84,200	200	\$84,200	200	\$84,200	200	\$84,200
10.3 Endangered Species Act	Continue compliance with ESA guidelines through City's long range planning process and SEPA review activities.	N/A	0	\$0	0%	City of Bainbridge Island does not have any listed or protected species requiring specific actions. No changes from existing program.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
10.4 WRIA	City is no longer involved with WRIA activities.	N/A	0	\$0	0%	No changes from existing program.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
Additional Regulations TOTAL			0	\$0	0.00	FTE	0.02	\$11,840	0.23	\$108,400	0.23	\$108,400	0.23	\$108,400	0.23	\$108,400
GAP IN EXISTING PROGRAM							0.02	\$11,840	0.23	\$108,400	0.23	\$108,400	0.23	\$108,400	0.23	\$108,400
SWMP Element #11 - Local Stormwater Activities																
11.1 Professional Services	Engineering department uses on-call contracts to hire outside consultants as the needs arise throughout the year. Typical services include engineering, geotechnical, survey, and material testing. The 2006 stormwater budget also includes \$380K to hire an outside consultant to conduct the water quality monitoring and groundwater studies. City's Professional Services budget for 2006 totals \$470,802. Of that, \$35,000 is included in Element 1.1. The remainder is shown here.		0	\$435,802	100%	Most Professional services costs in 2006 were one time expenditures, including the consultant fees to develop the water quality and groundwater monitoring programs. Those costs (\$380K) and the cost to run the public outreach (\$35K) have been removed from future years' professional services expenditures. The City will likely continue to need approximately \$50K per year for miscellaneous consultant fees.	0	\$50,000	0	\$50,000	0	\$50,000	0	\$50,000	0	\$50,000

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements			Existing Program			"Gap" Between Required Activities and Existing Program	Required Cost and Staff Levels									
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete		Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
11.2 Street and Stormwater Maintenance (Decant) Facility	The new decant facility accepts and treats waste collected during street sweeping, catch basin, ditch and detention pond cleaning. Each user is responsible for appropriate maintenance activities and the City will need to account for ongoing hauling and dumping fees.		0	\$0	0%	Construction of the decant facility is now complete. Ongoing maintenance costs and dumping fees will need to be estimated and incorporated into the overall stormwater program budget.	384	\$42,664	384	\$42,664	384	\$42,664	384	\$42,664	384	\$42,664
11.3 Water Quality Monitoring Study	Current water quality monitoring study will develop a the sampling and testing protocols. The City then needs funding to implement the program and conduct long term water quality monitoring.		150	\$104,745	10%	Actual project costs will depend on the monitoring and sampling plans developed with the initial study. The field work and data processing will require one additional engineering technician plus funding for lab fees and ongoing equipment maintenance. 1/3 of total cost paid for by SSWM (see notes below).	639	\$59,779	495	\$51,052	595	\$55,652	639	\$59,779	595	\$69,785
11.4 Groundwater Monitoring	The City's groundwater monitoring program will include well monitoring, public outreach (including volunteer training) and database management. USGS may also contribute funds to develop a computer model of the City's groundwater resources.		150	\$6,450	10%	As with the water quality monitoring, the field work and data processing will likely require the hiring of additional staff. Hours shown assume that USGS funds modeling project starting in Year 3. 1/3 of total cost paid for by SSWM (see notes below).	321	\$15,621	321	\$15,621	385	\$18,565	385	\$18,565	385	\$18,565
11.5 Natural Resource Team	The City's Natural Resources Team meets monthly to discuss a wide variety of issues related to protection and enhancement of natural systems. The team consists of 10 people representing a wide range of City departments.		240	\$11,040	100%	Assume no change to existing program of 10 people meeting 2 hours per month.	240	\$11,040	240	\$11,040	240	\$11,040	240	\$11,040	240	\$11,040
Local Stormwater Activities TOTAL			540	\$558,037	0.32	FTE	0.93	\$179,104	0.84	\$170,377	0.94	\$177,921	0.96	\$182,048	0.94	\$192,055
GAP IN EXISTING PROGRAM							0.61	-\$378,933	0.53	-\$387,660	0.62	-\$380,116	0.65	-\$375,989	0.62	-\$365,982
SWMP Element #12 - Program Overhead																
12.1 Program Overhead	The stormwater budget pays for a portion of the City's management and overhead costs, including operating leases, insurance, utilities, and repair and maintenance. Stormwater also pays for 0.5 FTE in support from the Executive and Finance departments. This FTE is divided among 12 city staff members to cover payroll, billing, management of the stormwater utility, and other operational needs. An additional \$52,017 pays for intergovernmental expenses from the public works budget.		855	\$421,023	100%	Assume no change from existing program costs. The dollars shown are a placeholder until detailed financial analysis can be completed.	855	\$421,023	855	\$421,023	855	\$421,023	855	\$421,023	855	\$421,023
12.2 Utility Overhead	The 2006 Storm Water Management Fund budget identifies \$114,017 for intergovernmental expenditures. Of that, \$62,000 is stormwater utility overhead and the remainder is miscellaneous intergovernmental transfers from the public works budget (included in 12.1).		0	\$62,000	100%	Assume no change from existing program costs. The dollars shown are a placeholder until detailed financial analysis can be completed.	0	\$62,000	0	\$62,000	0	\$62,000	0	\$62,000	0	\$62,000
12.3 Debt Service Cost	The 2006 Storm Water Management Fund budget estimated \$64,000 in debt service cost. Actual 2006 debt service cost (as estimated by FCSSG) is \$104,575.		0	\$104,575	100%	Assume no change from existing program costs. The dollars shown are a placeholder until detailed financial analysis can be completed.	0	\$104,575	0	\$104,575	0	\$104,575	0	\$104,575	0	\$104,575
Program Overhead TOTAL			855	\$587,598	0.50	FTE	0.50	\$587,598	0.50	\$587,598	0.50	\$587,598	0.50	\$587,598	0.50	\$587,598
GAP IN EXISTING PROGRAM							0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0	0.00	\$0

CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
SWMP Element #13 - Capital Projects and Equipment																
13.1 2006 Projects	Project dollars shown are from the City's 2006 Storm Water Management Fund budget. 2006 projects include: Decant Facility Construction, Rockaway Beach Culvert, Rose Loop Ravine Crossing, the Annual Fish Passage and Drainage programs, and Vincit Road Slope Stabilization.	Ongoing	0	\$790,033	100%	2006 CIP expenditure is higher than typical due to the construction of the Decant Facility. The City's future CIP project costs are listed individually in Elements 11.3 through 11.7. Costs vary each year depending on the projects identified.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0
13.2 CIP Engineering	Staff time spent on Capital Projects includes engineering time to design projects, manage consultant contract, direct O&M Crews, or manage contractor projects.	Ongoing	2,884	\$135,384	100%	Current staff time is adequate in implement future identified CIP projects.	2900	\$133,400	2900	\$133,400	2900	\$133,400	2900	\$133,400	2900	\$133,400
13.3 Annual Drainage and Fish Passage Programs	The CIP budget includes funding each year to spend on miscellaneous system upgrades. Approximately 2/3 is allocated for drainage projects and 1/3 for fish passage.	Ongoing	0	\$0	0%	The money allocated each year increases to account for increasing future needs.	0	\$179,000	0	\$174,000	0	\$179,000	0	\$190,000	0	\$196,000
13.4 2007 CIP Projects	Projects identified in the City's 2006 Capital Facilities Plan Update include: Eagle Harbor Drive Springbrook Creek (Fletcher Bay/HS)		0	\$0	0%	Cost of projects as listed in City's Capital Projects Plan.	0	\$219,000	0	\$0	0	\$0	0	\$0	0	\$0
13.5 2008 CIP Projects	Projects identified in the City's 2006 Capital Facilities Plan Update include: Taylor and Pine Culvert Replacement		0	\$0	0%	Cost of projects as listed in City's Capital Projects Plan. Note capital project costs in this year are significantly lower than other years. City may consider adjusting project schedule to balance annual costs.	0	\$0	0	\$22,000	0	\$0	0	\$0	0	\$0
13.6 Groundwater Monitoring Well Drilling	Drill monitoring well for long term groundwater study. Capital project to support element 11.4.		0	\$0	0%	Total cost estimated at \$230K. 1/3 of total project cost will be paid for by SSWM Fund.	0	\$0	0	\$76,667	0	\$0	0	\$0	0	\$0
13.7 2009 CIP Projects	Projects identified in the City's 2006 Capital Facilities Plan Update include: Fairview/Madrona Area Taylor and Pine		0	\$0	0%	Cost of projects as listed in City's Capital Projects Plan.	0	\$0	0	\$0	0	\$224,000	0	\$0	0	\$0
13.8 2010 CIP Projects	Projects identified in the City's 2006 Capital Facilities Plan Update include: Halls Hill Area Drainage Improvements (3-T's)		0	\$0	0%	Cost of projects as listed in City's Capital Plan.	0	\$0	0	\$0	0	\$0	0	\$260,000	0	\$0
13.9 2011 CIP Projects	Projects identified in the City's 2006 Capital Facilities Plan Update include: Lynwood Center/Pt. White CB to Outfall Hidden Cove at Coho Creek Culvert Upgrade		0	\$0	0%	Cost of projects as listed in City's Capital Projects Plan. Note capital project costs in this year are significantly higher than other years. City may consider adjusting project schedule to balance annual costs. Perhaps moving Lynwood Center to 2008.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$419,000
13.10 Long Term System Replacement	The CIP budget includes some system replacements as part of the Annual Drainage and Fish Passage Programs (see 13.3), but no formal program is in place to replace the aging infrastructure.	Ongoing	0	\$0	0%	As the drainage system ages, the replacement cost is expected to increase. Long term costs should be added to this analysis as determined at a later date.	0	\$0	0	\$0	0	\$0	0	\$0	0	\$0

**CITY OF BAINBRIDGE ISLAND
STORMWATER MANAGEMENT PROGRAM GAP ANALYSIS AND COSTS**

Requirements			Existing Program			Required Cost and Staff Levels										
Stormwater Program Element	Activities/BMPs Needed for Regulatory Compliance	Required Implementation by end of:	Existing Hours	Existing \$\$	% Complete	"Gap" Between Required Activities and Existing Program	Year 1 (Hours)	Year 1 (\$\$)	Year 2 (Hours)	Year 2 (\$\$)	Year 3 (Hours)	Year 3 (\$\$)	Year 4 (Hours)	Year 4 (\$\$)	Year 5 (Hours)	Year 5 (\$\$)
13.11 Equipment, Materials, and Supplies	The City has a master fleet list, identifying replacement years and costs for all vehicles. The storm drain budget also incurs \$3,970 monthly in rental rates for mowers, excavators, etc. and pays for fuel and other miscellaneous tools.	Ongoing	0	\$168,500	100%	The next storm drainage related replacement purchases are a new ditchmaster scheduled in 2010 and a new trailer scheduled in 2011. Equipment rental, fuel, and miscellaneous tools expected to increase to \$4500/month.	0	\$177,020	0	\$177,020	0	\$177,020	0	\$177,020	0	\$177,020
Capital Projects and Equipment TOTAL			2,884	\$1,093,917	1.69	FTE	1.70	\$708,420	1.70	\$583,087	1.70	\$713,420	1.70	\$760,420	1.70	\$925,420
GAP IN EXISTING PROGRAM							0.01	-\$385,497	0.01	-\$510,830	0.01	-\$380,497	0.01	-\$333,497	0.01	-\$168,497
TOTAL SSWM ACTIVITIES			16,138	\$2,797,900	9.4	FTE	11.4	\$2,210,000	12.6	\$2,253,800	12.6	\$2,386,300	12.6	\$2,425,700	12.5	\$2,593,300
Total SSWM Program Gap							1.9	-\$587,900	3.2	-\$544,100	3.2	-\$411,600	3.1	-\$372,200	3.0	-\$204,600

Notes:

- Activities are based on the NPDES State Waste Discharge General Permit for Discharges from Small MS4s in Western Washington, Draft Permit issued in February 2006. Actual activities may vary based on the final permit, expected to be issued in December 2006.
- Year 1 ends December 31, 2007; Year 2 ends December 31, 2008; Year 3 ends December 31, 2009; Year 4 ends December 31, 2010; Year 5 ends December 31, 2011.
- "Permit End" means 180 days prior to the expiration date of the permit.
- Due Dates in **Bold** are required by the NPDES Phase II for Western Washington. Other due dates are recommended by Otak for successful program implementation.
- "2005 Ecology Manual" refers to the Washington State Department of Ecology's 2005 Stormwater Management Manual for Western Washington.
- TMDL guidelines only apply to permittees whose MS4s discharge to a water body with a TMDL for stormwater approved by EPA prior to the issuance of this permit. (See Appendix 2 of the Permit for a list of applicable water bodies.)
- Monitoring requirements vary based on City or County population. Guidelines listed here are for small cities (population between 10,000 and 25,000).
- Capital projects, estimated cost, and years for implementation provided by the City of Bainbridge Island.
- Activities in Program Element 11 are management, planning, and administration activities and costs currently included in the City's SSWM program. These activities are not required by the NPDES Phase II permit, but are needed to run a successful program.
- Cost for program elements assumes staff time costs an average of \$46/hour (salary + benefits)
- FTE estimates are based on staff contributing 1710 working hours/year to account for holidays, vacation, and leave time.
- Water Quality and Groundwater Monitoring programs will be funded 1/3 from the SSWM Program and 2/3 from the general fund.

Total for WQ:	1916	\$179,336	1486	\$153,156	1786	\$166,956	1916	\$179,336	1786	\$166,956
Total for Groundwater:	964	\$46,864	964	\$46,864	1156	\$55,696	1156	\$55,696	1156	\$55,696
Total for groundwater well drilling:	0	\$0	0	\$230,000	0	\$0	0	\$0	0	\$0

Technical Memorandum #4:
Financial Alternatives

Technical Memorandum



333 SW Upper Terrace Drive
Bend, OR 97702
Phone (541) 385-9960
Fax (541) 312-8704

To: Melva Hill, City of Bainbridge Island
From: Joe Simmler, PhD
Alissa Maxwell, PE
Copies:
Date: September 18, 2006
Subject: Financial Alternatives
Project No.: 30794

Introduction

The City of Bainbridge Island (City) has been identified by the Washington State Department of Ecology (DOE) as a NPDES Phase II community. As such, the City will need to develop a Surface and Stormwater (SSWM) Program that complies with the conditions of the Phase II Permit. The SSWM Program will also need to incorporate other non-regulatory elements, such as Local Activities, Capital Improvement Projects (CIP), and Program Overhead, which are necessary to implement a fully functional program.

This memorandum is the fourth and final in a series of memorandums that Otak is developing to analyze the City's SSWM Program with respect to upcoming NPDES guidelines. The analysis includes the following steps, each documented in a separate technical memorandum:

- Step 1 – Document the City's existing SSWM Program;
- Step 2 – Outline regulatory requirements, milestone dates, and consequences for non-compliance;
- Step 3 – Identify gaps in the City's existing program compared to regulatory requirements and calculate staff levels and costs for full compliance; and
- Step 4 – Review funding options to finance needed enhancements to the City's stormwater program.

The series of memorandums will be integrated into a final report documenting all steps and recommendations from this SSWM Program analysis. The final report is expected to be complete in the fall of 2006 to correspond with the City's annual budget process.

Revenue Needs

The City's stormwater program was previously analyzed and the revenue needs for the next five years (2007 through 2011) were documented in *Technical Memorandum #3 – Stormwater Management*

Program Gap Analysis produced by Otak. That document outlined the revenue needs for the next five years (2007 through 2011) to fund a SSWM Program that complies with the Phase II Permit and conducts the non-regulatory activities necessary for a successful program.

SSWM Program funding can be divided into four major categories: Regulatory Program Activities, Local Stormwater Activities, Program Overhead, and CIP and Equipment. Technical Memorandum #3 includes an extensive *Stormwater Management Program Gap Analysis and Costs* spreadsheet with detailed descriptions, milestones, staffing needs, and costs for each program element over the next five years. The total SSWM annual funding and staffing needs are summarized in Table 1.

Table I Total SSWM Program Costs						
	Existing 2006	Year 1 2007	Year 2 2008	Year 3 2009	Year 4 2010	Year 5 2011
Staffing Level	9.4 FTE	11.4 FTE	12.6 FTE	12.6 FTE	12.6 FTE	12.5 FTE
Regulatory Program Activities	\$558K	\$735K	\$913K	\$907K	\$896K	\$888K
Local Stormwater Activities	\$558K	\$179K	\$170K	\$178K	\$182K	\$192K
Program Overhead	\$588K	\$588K	\$588K	\$588K	\$588K	\$588K
CIP and Equipment	\$1,094K	\$708K	\$583K	\$713K	\$760K	\$925K
Total	\$2,798K	\$2,210K	\$2,254K	\$2,386K	\$2,426K	\$2,593K

Based on this analysis:

- The City needs to increase long term Regulatory Program funding by approximately \$350K over existing levels.
- The cost of Local Stormwater Activities can be greatly reduced because city staff will be taking over the Water Quality and Groundwater Monitoring programs (reducing the professional services fees), and only 1/3 of the future cost of the monitoring programs will be paid for by the SSWM program.
- Program Overhead should remain fairly consistent, though some changes may come from the Stormwater Utility Rate Study currently in progress.

- Capital Project costs range from \$583K to \$925K per year, depending on which projects are proposed for design and construction in each year. (*Note: 2006 included a major expenditure of \$440K to construct the City's decant facility.*)

Current Funding Mechanisms

The City currently funds the SSWM Program through Stormwater Utility Fees and the City's General Fund. The utility fee in 2006 is \$84 per year per Single Family Equivalent (SFE). Single family residential customers are assumed to have approximately 3,000 square feet of impervious surface, which is equivalent to one SFE. Commercial or other highly impervious land uses pay a higher rate based on the amount of impervious area (and therefore number of SFEs) on their property. (*Note that the Stormwater Utility Fee has been increased annually over the last several years.*) The projected 2006 revenue from the Stormwater Utility is \$1,063K. This revenue funds only 38 percent of the 2006 program and only 40-50 percent of the future program. The majority of the existing SSWM Program funding comes from other sources, primarily the City's General Fund.

The 2006 SSWM Program budget levels are significantly higher than those of previous years, as the 2006 budget includes \$440K for the construction of the new decant facility and \$380K for professional services to develop the Water Quality and Groundwater Monitoring studies. While those specific levels of CIP and Professional services funding are not needed in future years, the overall SSWM Program will continue to require a significant supplement from the General Fund to reach the required funding levels shown in Table 1 above.

In addition to the stormwater revenue generated from the Utility and General Fund, the City recently received a grant from DOE to assist in developing a Water Quality Monitoring Program. The grant funds are being spent to identify sampling sites, constituents of interest, and sampling plan. The grant provides one-time assistance to get the monitoring program started, but long term implementation of the plan (and funding) will be the responsibility of the City. The city has chosen to fund 1/3 of the Water Quality Monitoring Program through the SSWM Fund.

Financial Alternatives and Funding Mechanisms

Common Approaches

Most municipal agencies have historically funded their stormwater program activities through the general fund, roads program, or water/sewer utilities. With increasing regulations, agencies have discovered that their stormwater program, like the water and wastewater programs, needs its own reliable and dedicated source of revenue for successful implementation. As such, many agencies, including the City of Bainbridge Island, have developed a stormwater utility to provide a permanent base level of funding for their stormwater programs. Some agencies are also charging specific development review fees to increase their stormwater revenue, or imposing system development charges to help defray the cost of new drainage infrastructure.

The more mature utility-based stormwater programs often have adequate annual revenues and fiscal standing to take advantage of long term capital improvement project (CIP) financing options, including bonding for capital needs, loans for special projects, and partnering for cost sharing with other agencies and/or developers. Occasionally, opportunities arise that allow an agency to take advantage of additional outside funding sources including; grants or the establishment of project specific Local Improvement Districts (LIDs). These revenue sources may augment annual stormwater revenues, but are generally inadequate as a primary source of funding for an entire stormwater program.

Funding Alternatives

Presented in the attached *Stormwater Management Funding Mechanisms* table is a listing of fourteen potential funding alternatives that municipalities have traditionally used to fund their stormwater management programs, including maintenance, capital improvements, and regulatory compliance. For each funding alternative, a brief listing of advantages and disadvantages is provided. Most agencies have found that it takes more than one funding option to adequately fund their stormwater needs. As discussed in the table, some options are limited by the amount of revenue, their duration, and/or they types of equipment, projects, or services that they can legal provide. It is ultimately the preferences of the agency staff, as supported by elected officials and the public that ultimately determine how many of these potential funding alternatives are able to be realized by any single municipality.

Of the fourteen alternatives presented in the *Stormwater Management Funding Mechanisms* table, nine of the more common financial options have been selected and described in greater detail below.

- Stormwater Utilities,
- Development Review Fees,
- Grants,
- Loans,
- Revenue Bonds,
- Fee in Lieu of Onsite Detention,
- Special Purpose Districts,
- System Development Charges, and
- Future Coordination with Other Agencies.

Stormwater Utility

By far the most common, and the most successful financial mechanism for stormwater management, is the formation and use of stormwater utilities. Stormwater utilities are actually service fees, usually charged on a monthly basis. To establish equity, they are usually based on the amount of impervious surface per parcel, with standard discounts available for low income, disabled, and

elderly. Often discounts are also available to commercial and industrial parcels that own and properly maintain their own on-site stormwater detention and treatment systems.

In Washington, many cities and counties have developed stormwater utilities as their primary source of stormwater funding. This approach recognizes that the operation of the stormwater infrastructure, including related regulatory compliance efforts, is an essential public service that should be paid for by those who are being served. Stormwater management, like water and sewer utilities, should be financed and run like a business. Within a stormwater utility service area, it is possible to define various sub-service areas where rates and charges are set at different levels depending on who benefits from local or regional capital projects and other stormwater services.

Most municipal agencies eventually choose the formation of a utility because the amount of revenue available from other sources (i.e. fees, system development charges, general fund, etc) is too limited to support all the needs of a viable stormwater management program. Establishing a stormwater utility is the most reliable means of financing stormwater programs because municipalities can predict annual revenues and increase rates as the water quality, capital, and regulatory compliance costs rise.

Kitsap County's *Surface & Stormwater Management Performance Audit*¹ reviewed the 2005 stormwater utility fees for 26 jurisdictions throughout Puget Sound. Bainbridge Island's annual rate of \$84 per SFE is toward the middle of the fee range and in line with cities like Lacey (\$78), Edmonds (\$86), and Poulsbo (\$90). However, the current rate is well below several larger cities such as Olympia (\$114) and University Place (\$148).

Development Review Fees

Cities and counties have the legal authority and the option to assess charges for the services they provide. Many municipal services, including development review and construction/maintenance inspections can be 100 percent fee supported. It is usually in the agency's best long-term interest not to subsidize these types of services from the City's general fund. Instead, fees should be based on the actual costs.

For those agencies that do charge development review fees, many do not track separate review processes and are not able to transfer a portion of the review fees back to the stormwater program. To assist in the tracking of these internal labor costs, some municipalities charge a separate drainage review fee that can be directly related to stormwater services provided, particularly when local guidelines require the submittal of separate drainage plans or reports as part of the development application.

¹ *Surface and Stormwater Management Performance Audit*, Final Report, October 31, 2005, prepared for Kitsap County by FSC Group in conjunction with Roth Hill Engineering Partners, LLC.

Grants

Although increasingly competitive, this state still operates two grant programs that are available to cities and counties, including the State Centennial Clean Water Fund (CCWF) and the Flood Control Assistance Account Program (FCAAP). These grants can be a good source of planning, habitat, or water quality project funding. Awards can range up to \$300K per project, with adequate project justification. The City of Bainbridge Island is currently utilizing a CCWF grant to pay for the development of a city-wide water quality monitoring program.

Loans

The State's Public Works Trust Fund, State Revolving Fund (SRF), as well as the CCWF and FCAAP, each contain loan programs for drainage and flood control related projects. Interest rates are usually low (1 to 5%). Because the City of Bainbridge Island has already established a stable source of annual revenue via its existing stormwater utility, these types of low-interest loans may be a good funding source for some of the city's smaller future projects and activities. Unlike some of the grants, most loans are available for either planning or capital types of project.

Revenue Bonds

Financing options utilizing bonding can contribute substantial annual revenue to a stormwater program. However, bonds are normally limited to capital projects that have already been designed and permitted. The use of bonding is dependent upon the annual utility rates, the financial stability of the surface water utility, and the financial rating and bonding capacity of the municipal agency.

Using bonds may help prevent fluctuating monthly charges that may be necessary when a pay-as-you-go approach is used to address CIP needs. However, to qualify for the use of bonding, it is important for the utility to have a reasonable operating reserve fund in order to demonstrate solvency and obtain an adequate bond rating. Annual utility rates must be high enough to allow revenue bonds to be issued for capital projects – there is always an annual payment to service the bond debt, which is usually about 10% of the bonded amount.

Fee In Lieu of Onsite Detention

An option for some municipalities is the establishment of a stormwater facility funding program. Developers pay a fee to discharge their stormwater to an off-site water quality and/or detention facility constructed by the local agency. The amount of the fee is generally equal to and often less than the projected cost for the developer to provide onsite detention and/or treatment. This option is usually used by jurisdictions that prefer to operate fewer, large regional facilities or jurisdictions looking to stimulate local economic development. By using regional facilities, municipalities can make an area more attractive to new development, while ensuring a high level of stormwater management and resource protection as that development occurs. The jurisdiction usually “fronts” the funds necessary to construct the facility in advance of the development then charges new

development the “in-lieu of fee” to pay back the costs. This approach must be carefully planned out to ensure that the City has a high certainty of being paid back within a reasonable period of time. This approach may not be appropriate for Bainbridge Island where the large number of drainage basins is less conducive to regional stormwater facilities, and may affect the economic viability of such an approach.

Special Purpose Districts

Special purpose districts can be an equitable approach to generate adequate levels of revenue for local and regional projects. The major advantages of this funding mechanism are:

- They can be set up to cross jurisdictional boundaries in order to follow basin and/or watershed boundaries,
- They foster partnering with landowners and future developers and/or other agencies,
- They are equitable, and
- They have many of the same authorities for land acquisition, condemnation, ROW and fund raising that cities or counties have.

The formation of some districts requires a majority vote of the existing property owners, and as such is often difficult to get initially established. In addition, some special districts are controlled by a private board of supervisors and operate outside the control of a city, instead reporting directly to the county. Such an arrangement could reduce the control the City has over the SSWM Program, which may make it more difficult to ensure compliance with state and federal regulations.

System Development Charges

General Facility Charges or System Development Charges (SDCs) are paid by new developments to reimburse the local government for the cost of constructing additional capacity in the downstream drainage system. SDCs are often based on impervious area (a measure of runoff amount and impact on the downstream drainage system). The amount of revenue raised by SDCs is dependent on the amount and type of development that occurs within the City on an annual basis. This revenue source can vary from year to year depending on the local economy and building opportunities. While not recommended at this time for Bainbridge Island, this option should be kept in mind for basins where significant sustained development can still occur and where public infrastructure will be needed to accommodate that growth.

Future Coordination Opportunities with Other Agencies

Municipalities are generally encouraged to look for opportunities to collaborate with neighboring jurisdictions and agencies on stormwater work in order to: (a) promote efficiency and save money; (b) obtain fair solutions to problems that cross political boundaries; and (c) promote consistency of standards and practices throughout the region. The City of Bainbridge Island is somewhat limited in cooperating opportunities by virtue of being an island community. Drainage basin boundaries are fully contained within the City limits, eliminating the possibility of local problems either resulting from or causing impacts to a neighboring jurisdiction. The City should continue to look for teaming

and coordination opportunities that may be available through Kitsap County, the Tribes, conservation groups, and other state and local governments. Partnering may be useful in purchasing maintenance equipment, providing needed staff training, or conducting public outreach activities, as will be required by the City's new NPDES II Permit.

Initial Recommendations

The City of Bainbridge Island has many financial mechanisms available to fund the SSWM Program. The current methods (Stormwater Utility and General Fund) provide adequate funding, but do not guarantee that the funding will be available year after year. Using the current funding mechanisms, over half of the SSWM Program funding will need to come from the City's General Fund. This requires the SSWM Program managers to compete with other City programs for limited resources. In years when public safety or major road projects require a significant funding increase, it is likely that the SSWM Program will lose all or some of the General Fund transfer. It is better for the City to develop a long term, stable and dedicated funding source for the SSWM Program.

Although a detailed financial analysis has not been conducted, some initial recommendations for revising the SSWM Program funding methods include:

- Evaluate the current Stormwater Utility rate and consider and increase that would provide a better baseline of funding for the SSWM Program. The current Utility Rate pays for less than half of the needed program.
- Consider increasing the Stormwater Utility rate incrementally over several years to reach the needed funding level. By forecasting future needs, the City may be able to adopt a single ordinance that would govern the fee increases over the next three years. This would save time and debate in trying to justify and pass a separate increase every year.
- Adopt a pay as you go capital plan that allows CIP projects to be designed and constructed as annually accumulated SWM Funds allow.
- Continue paying for development review out of the Building & Development Services (B&DS) fund. This is an appropriate distribution of collected funds as the B&DS funds come from development review fees. If the cost of development review is transferred into the SSWM Program, then an equal portion of development review fees should be transferred as well.
- Consider an increase in the development review fees paid by developers. Any increase in collected fees could be utilized to pay for the increased development review time and construction site inspection required by the Phase II Permit.
- Consider whether system development charges (SDCs) could create an added revenue source for the SSWM Program. Adding stormwater connections to the existing system will eventually require upgrades and enhancements to the downstream system. The City already has SDCs for water and sewer connections.
- Look for opportunities to partner with Kitsap County or other local government agencies to share the cost of the SSWM Program. Partnering may be useful in purchasing maintenance

equipment, providing needed staff training, or conducting public outreach activities, as will be required by the City's new NPDES II Permit.

Conclusions

The City's SSWM Program will require an annual program budget between \$2,200K and \$2,600K over the next 5 years, with CIP/Equipment costs ranging from \$583K to \$925K per year, depending on which projects are slated for a given year. The City has already developed a Stormwater Utility that provides a starting point for funding the needed program elements. However, the current rates fund less than half of the existing SSWM Program needs. This rate should be reviewed and likely increased to provide a better base of funding for the SSWM Program. The City may also consider increasing development review fees and transferring the increased revenue to the SSWM Program to pay for the increased construction site inspection required by the Phase II Permit. Adopting system development charges may be another way to increase revenue and set aside funding for needed capital infrastructure upgrades. In all of these cases, the City will need to do a detailed review of the proposed financial mechanisms to evaluate which fit best with the revenue needs and City operating procedures.

Next Steps

This technical memorandum is the last in a series of memorandums to analyze the City's SSWM Program with respect to upcoming NPDES guidelines. The next step is to incorporate all previous memorandums into a final report. The final report is expected to be complete in the fall of 2006 to correspond with the City's annual budget process.

The City is also in the process of developing a Stormwater Utility Rate study. That study will utilize the program and funding needs identified in this analysis to develop a long term funding plan for the SSWM Program. The rate study will also look at the structure of the existing Stormwater Utility and recommend any changes necessary to maintain equity and fairness in the system.

Attachments

- Stormwater Management Funding Mechanisms table

Stormwater Management Funding Mechanisms

Funding Mechanisms Considered for the City of Bainbridge Island		
Funding Mechanism	Advantages	Disadvantages
Stormwater Utility	<ul style="list-style-type: none"> Once established, can provide an adequate, stable, equitable, long-term revenue source for all SSWM activities. Equitable, relatively easy to establish. Usually accepted by the public, given adequate up-front public education, involvement, and notification. 	<ul style="list-style-type: none"> Uneducated public may view it as a “rain tax”. Requires education and public involvement. Rates need to be periodically increased as SSWM program and new regulations increase. Can be complicated for the public if flood control or other drainage-related fees exist.
Development Review Fees	<ul style="list-style-type: none"> Good for direct hourly services like permit review and inspection. Equitable and can be directly correlated to service level. 	<ul style="list-style-type: none"> Not appropriate for maintenance, capital construction, regulatory compliance, administration or other programmatic SSWM needs.
Grants	<ul style="list-style-type: none"> Can be used to help fund special studies, such as modeling, flood plan management, mapping, and ordinances, etc. 	<ul style="list-style-type: none"> Funds are limited. Selection process is very competitive. Requires research and staff time to complete.
Loans	<ul style="list-style-type: none"> Are readily available and can be paid back with little or no interest, if paid back in <5 years. Are sometimes useful for special projects. 	<ul style="list-style-type: none"> Usually requires an adequate, established revenue source to make annual payments. If adequate local revenues exist, loans are generally of little use to an agency.
Revenue Bonds	<ul style="list-style-type: none"> Appropriate for larger, specific projects that have already been designed and are waiting to be constructed. 	<ul style="list-style-type: none"> Requires established CIP plan. Availability can be influenced by an agency’s financial rating. Annual payments require stable, adequate revenue source.
Fee in-lieu of On-site Detention	<ul style="list-style-type: none"> Can be an effective way of attracting new development to the City. Ensures that new development will have stormwater management meeting current City standards. 	<ul style="list-style-type: none"> Requires an initial expenditure of time and resources from City’s surface water budget. Only appropriate for areas subject to significant future development. Requires careful planning to ensure that City will be fully compensated for up front expenditure.

Stormwater Management Funding Mechanisms

Funding Mechanism	Advantages	Disadvantages
Special Purpose District	<ul style="list-style-type: none"> • Can be an effective way to approach regional needs on a basin or subbasin basis. • Equitable for all participants. 	<ul style="list-style-type: none"> • Usually requires vote of impacted residents and businesses. • Consumes staff time to set up and maintain. • Usually project-specific and of limited use outside of the area for use for SSWM services other than capital projects.
System Development Charges (SDCs)	<ul style="list-style-type: none"> • Is a publicly acceptable approach to have new development pay for some of its impacts to the existing drainage system. 	<ul style="list-style-type: none"> • Rarely are SDCs of an adequate level to pay for all impacts associated with new development. • SDCs are usually for new CIP facilities, and are of limited use for O/M and other long-term SSWM program needs.
Intergovernmental Coordination	<ul style="list-style-type: none"> • Is helpful for larger watershed and regional SSWM needs that cross jurisdictional boundaries. • Helpful in applying for grants and loans. • Appropriate for large, mutually beneficial projects such as upgrading pump stations and major dredging efforts. 	<ul style="list-style-type: none"> • Often difficult and time-consuming to implement and establish a fair basis of payment/benefit. • Usually limited to just a few specific projects. • Often does not result in much new revenue for any one agency.
Additional Funding Mechanisms not Considered in Detail		
General Fund Transfer	<ul style="list-style-type: none"> • An existing, readily available revenue source for City activities. 	<ul style="list-style-type: none"> • Generally in short supply. • SSWM cannot compete with other City services and priorities. • Request and justification for funding must be made annually.
Road Fund	<ul style="list-style-type: none"> • Roads directly benefit from good drainage design and maintenance. • Equitable and appropriate for use in maintenance and construction in rights-of-way (ROW). 	<ul style="list-style-type: none"> • Use and equity is limited. • Inappropriate for use out of road ROW. • Is of limited use as a primary, long-term revenue source for SSWM.

Stormwater Management Funding Mechanisms

Funding Mechanism	Advantages	Disadvantages
Water/Sewer Funds	<ul style="list-style-type: none"> • Existing revenue sources. • Services understood by public. 	<ul style="list-style-type: none"> • Generally not appropriate or equitable for use on SSWM projects. • Not equitable with SSWM; little direct correlation to water/sewer utility needs and services.
Billings to Upstream Jurisdictions	<ul style="list-style-type: none"> • An equitable approach to reimburse lowland agencies for receiving and managing flows from upstream. • Reduces costs to City and drainage districts. 	<ul style="list-style-type: none"> • Will likely be difficult to successfully “sell” to upstream agencies. • May have some legal challenges as well. • Not applicable to Bainbridge Island
Drainage and Flood Central Zone Districts	<ul style="list-style-type: none"> • Historically established under state law to address regional drainage issues without regard to jurisdictional boundaries. • Drainage districts are granted special powers and authorities under State law for raising revenue and providing regional drainage services. • Have broad and sweeping powers to raise local revenues, apply for grants and loans, and maintain natural and man-made drainage ways. • City does not have to hire additional staff to duplicate drainage district services. 	<ul style="list-style-type: none"> • Most drainage districts were established when the primary land use was agricultural and the goal was flood control. • Most are usually under-funded • To change their historic role and current funding and organization may require a focused public education effort and an infusion of modern management and technical principles. • Not applicable to Bainbridge Island.