

EXECUTIVE SUMMARY

Introduction

Kirkland's Surface Water Utility was formed in 1998, with the primary purpose of operating and maintaining the City's surface water system, which includes constructed elements such as pipes and catch basins, and natural resources such as streams and lakes. The Utility has overall goals to protect the public interests, providing services that reduce flooding, improve water quality, and restore aquatic habitat. Recommendations contained in the last Surface Water Master Plan, which was completed in 1994, have been largely implemented, resulting in discernable improvements in:

- Flood reduction. Projects have been constructed to address most major recurring flooding problems.
- Tools to control quality and quantity of runoff from existing and new developments. Education, technical assistance, and code requirements guide business and residents in lowering impacts of their activities on water resources.
- The level of citizen involvement and awareness of City efforts. The City sponsors a variety of volunteer activities and educational events to raise awareness and foster sustainable behavior in Kirkland's citizens.

Even with these accomplishments, there is still much to be done toward meeting the Utility's goals. An updated plan is needed to guide future progress.

The Surface Water Master Plan is being updated now because of new state and federal surface water regulatory developments, research findings that have shaped the current overall approach to surface water management and that show many of Kirkland's streams have impaired water quality and degraded aquatic habitat, and the City's community vision for clean water, healthy natural systems, and community stewardship (City of Kirkland, 2004). Improving surface water and aquatic habitat quality is a long-term proposition, as measurable progress is often not evident until many years after changes have been implemented. This 6-year plan sets the stage for future surface water management in Kirkland, by implementing and funding programs that will support long-term progress.

This plan was developed by conducting technical analyses to identify current surface water problems, and soliciting input from Kirkland residents and businesses through a public opinion survey and public meetings. The draft plan will be submitted to the Kirkland City Council for approval and made available for public comment. A final plan, incorporating changes and comments from the public review process and the City Council, will be submitted for approval by the City Council. Upon approval, the plan will be implemented over the next 6 years.

Trends and Issues

In the last decade, considerable changes have occurred in Kirkland and in the field of surface water management. The City's population has grown steadily at about 1.1% annually, and demographics have shifted toward an older population, with more residents living in multi-family housing. There is growing community support and vision for surface water issues, as people become more aware of the negative affects of development on surface water resources. At the same time, regulatory developments have occurred at the state and federal levels, requiring greater effort by local governments to improve water quality and reduce the negative effects of stormwater. Fortunately, technological advances and alternative approaches, such as low impact development techniques are improving surface water manager's abilities to comply with new regulations.

Current Conditions and Problems

The City of Kirkland is divided into 10 watersheds that show patterns of degradation typical of urbanized areas. Current watershed conditions and problems have been identified by Utility staff, citizens, and consultants through direct observation, biological and chemical monitoring, and surface water modeling efforts. At this point, there are few major flooding problems in Kirkland, as most have been alleviated through Utility actions. However, there is the potential for flooding to increase as infrastructure ages, and the City continues to develop. Water quality continues to be a concern in Kirkland's streams, as the cumulative effects of diffuse nonpoint source pollution from daily activities cause water quality impairment. Similarly, aquatic habitat is degraded in many of Kirkland's watersheds as a result of urban stresses including increased surface water flows, reduced vegetated riparian areas, fish passage barriers, and lack of in-channel complexities like large woody debris (LWD).

Recommended Approach

To reach the Utility's goals of flood reduction, improved water quality and aquatic habitat restoration, this plan outlines a preferred level of service that balances regulatory requirements with available budget to carry out Utility programs and the City's overall vision for clean water, healthy natural systems and community stewardship. The *minimum* level of service the Utility must provide is one that complies with surface water regulations and protects public safety. This contrasts with the *highest* level of service that proactively protects the public and restores surface water resources to pre-development conditions. The level of service being recommended in this plan is a *high* level of service that combines achievable programs and projects that meet the minimum regulatory and public safety requirements, while making progress toward achieving improvements that address community concerns and the City's vision. The recommended programs in this plan represent an increased level of service to further the Utility's progress toward improving watershed conditions. For each of the Utility's goals, this level of service translates to the following descriptions:

Flood Reduction-

minimize existing flooding and prevent increase in future flooding through construction of projects that address existing problems, increased inspection and rehabilitation of the existing system, and increased public education.

Water Quality Improvement-

increase efforts to maintain and improve water quality by increasing public education (source control), identifying pollution "hot spots" for possible water quality treatment and by examining City practices and facilities to identify where water quality improvements could be achieved.

Aquatic Habitat-

increase efforts to slow the decline of aquatic habitat and create improved conditions that will sustain existing fish populations. Combine hydrological controls, such as regional detention, with in-stream habitat improvement projects in Juanita and Forbes creeks watersheds that currently support fish populations.

Recommended Programs to Meet Utility Goals

Program strategies outlined in this plan were developed through an analysis of success factors, including effectiveness, feasibility, cost, and likelihood of success. The strategies with the greatest possible positive attributes relative to cost were chosen for inclusion in the plan. Table ES-1 summarizes the new program elements being recommended in this plan, along with the goals that each addresses, the cost, and additional Utility staff required to implement the program element. These elements complement existing programs that are detailed in the body of this plan. Table ES-2 summarizes the total surface water utility budget, including staffing.

(See table ES-1 and ES-2 at the end of section)

Surface Water Utility Funding

The Financial Consulting Solutions Group (FCS) performed analysis of rate sufficiency for the recommended plan based on the 2006 total rate of \$14.15 per month per equivalent service unit (ESU)¹. This rate includes a \$3.25 per month per ESU increase in 2006 (over the existing rate of \$10.90 per month per ESU) which was approved in concept by the City Council during the 2005-2006 budget discussions. The analysis showed that the proposed rate is sufficient to fund the recommended program through at least 2010. In 2011, the Council may wish to consider either a minor rate increase or minor shifts to fiscal policy and/or priorities to continue the *high* level of service proposed in this plan.

The proposed rate includes funding of a system replacement reserve beginning at \$581,000 per year. Funding of the replacement reserve increases as new projects are constructed. The purpose of system replacement funding is to provide for the replacement of aging system facilities to ensure sustainability of the system for ongoing operations. Potential capital facilities charges (CFCs) also were developed based on apportionment of existing system value and proposed capital project costs to new and existing customers. A CFC of \$521 per ESU, which resulted from this analysis, is similar to or lower than CFCs charged by other local cities, and would raise \$80,000 to \$85,000 per year if growth projections of 0.55% per year are realized. The rate analysis did not include this revenue. Calculated CFCs are presented for Council consideration.

The proposed rate includes recommended fiscal policies regarding reserves for both operating and capital expenses. For operating reserves, it is recommended that the City maintain 10 months of cash operating expenses. For capital contingency reserves, it is recommended that the City maintain the greater of 1% of asset value, or 10% of the cost of the 6-year Capital Improvement Program project list. The financial modeling conducted for this plan included capital contingency reserves of \$847,400, or approximately 10% of the cost of the 6-year Capital Improvement Program project list.

FCS developed metrics to compare the value of surface water services provided by Kirkland relative to services provided by other local cities were developed. The number of full-time employees in each utility was compared to service area size, miles of stream, miles of pipe, population, and assessed real estate value. By nature these metrics are apples and oranges, as each system is different in terms of its hydrology, intensity and type of development, and regional value of its water resources.

Performance Measures

To help the City meet goals in the most cost-effective manner possible, performance measures have been developed as part of this plan update. Performance measures concentrate on measurement of City actions and outcomes of projects and programs that under City control. Examples of performance measures included in this plan are the following:

- Increase available community stewardship activities and opportunities.
- Identify a low impact development pilot project by 2007.
- Pursue one public-private partnership to site a surface water facility that jointly benefits the public and private landowner.
- Develop a business water quality outreach program and conduct outreach to 200 businesses by 2007.

Overall effectiveness of Surface Water Utility programs as measured by reduction of flooding or improvements in water quality and aquatic habitat is difficult to measure. The City will continue to stay informed about developments in low-cost and accurate methods for determining program effectiveness, and will implement measures as appropriate.

¹ An ESU is defined as 2,600 ft² of impervious surface, which is the average quantity found on a residential property in Kirkland as determined from an aerial photography survey conducted in 1994 as part of the last Surface Water Master Plan. All residential customers are charged at the one ESU rate. The rate for commercial/multi-family customers is determined by multiplying the one ESU rate by the actual number of ESUs contained on the property. See Chapter 15.56.020 of the Kirkland Municipal Code for details.

Table ES-1. Summary of New Surface Water Utility Program Elements

PROGRAM	Element Number	Description	Surface Water Utility Goals Addressed			Cost		
			Flood Reduction	Water Quality Improvement	Aquatic Habitat Protection and Restoration	One Time	Annual	New Staff
MAINTENANCE	1	Increased Maintenance Frequencies	X		X			
	2	Condition Rating System	X		X			
	3	System rehabilitation Associated with Transportation Projects	X	X	X		\$90,000	
Subtotal Maintenance Costs						\$0	\$90,000	1.0 FTE
CAPITAL IMPROVEMENT	4	Surface Water CIP Project List (includes private streambank stabilization projects) ¹					\$494,167	
	5	System Replacement Fund	X	X			\$581,000	
Subtotal Capital Improvement Costs						\$0	\$1,075,167	

Table ES-1. (Continued) Summary of New Surface Water Utility Program Elements

PROGRAM	Element Number	Description	Surface Water Utility Goals Addressed			Cost		
			Flood Reduction	Water Quality Improvement	Aquatic Habitat Protection and Restoration	One Time	Annual	New Staff
CUSTOMER SERVICE	6	Adopt Updated Surface Water Design Requirements ²	X	X	X	see note	see note	
	7	Landscaper Certification		X	X	\$25,000		
	8	Multifamily Outreach		X	X	\$30,000		
	9	Routine Business Outreach		X	X	\$25,000	\$50,000	0.5 FTE
	10	Adopt King County Stormwater Pollution Control Manual		X	X	\$15,000		
	11	West Nile Virus ³				see note	see note	
	12	Low Impact Development	X	X	X	\$50,000		
	13	Evaluation of City Property and Practices		X	X	\$50,000		
	14	Improved Soils Map	X	X	X	\$125,000		
	15	Street Washing Investigation		X	X	\$50,000		
	16	Juanita Creek Hydraulic Study	X		X	\$40,000		
	17	Evaluation and Ranking of Pollutants		X	X	\$40,000		
	18	On-going Study Budget	X	X	X		\$20,000	
			Subtotal Customer Service Costs			\$450,000	\$70,000	0.5 FTE
			TOTAL New Program Element Costs			\$450,000	\$1,235,167	1.5 FTE
Notes:			TOTAL ANNUALIZED COSTS (over 6-years)			\$1,310,167		

¹ Current Surface Water CIP costs are \$1,950,000 per year. The amount shown is the proposed increase in funding per year required to construct the proposed CIP list in a 6-year period.

² Work to adopt new design regulations will be done by existing staff, and so there is no additional cost associated with this element.

³ The King County Health Department will determine the required level of response, as detailed in the City's West Nile Virus Response Plan. Costs vary significantly depending on the level of response, and the level response is uncertain. For this reason, costs are not included at this time.

Table ES.2 Summary of Surface Water Utility Costs and Staffing

PROGRAM	Description	Estimated Existing Total Annual Program Cost	Estimated Total Average Annual Increase Over Existing (2005 dollars, 6-year time frame)	Estimated Total Recommended Annual Program Cost	% Increase relative to Existing Total	Existing FTE	New FTE	Total FTE
Operations and Maintenance	Surface water infrastructure maintenance, condition rating system, and system rehabilitation associated with transportation projects	\$ 1,400,000.00	\$ 90,000.00	\$ 1,490,000.00	6%	8.55	1.0	9.55
Capital Improvement Program	Surface Water CIP Project List (including private streambank stabilization projects)	\$ 950,000.00	\$ 494,167.00	\$ 1,494,167.00	52%	n/a	n/a	n/a
	Surface Water portion of Transportation projects	\$ 1,000,000.00		\$ 1,000,000.00	0%	n/a	n/a	n/a
	System Replacement Fund		\$ 581,000.00	\$ 581,000.00	100%	n/a	n/a	n/a
Customer Service	Development review and standards, public education and outreach, code enforcement and technical assistance, policy analysis and regulatory compliance, and monitoring and research	\$ 450,000.00	\$ 145,000.00	\$ 545,000.00	32%	3.0	0.5	3.5
Administration and Billing		\$ 200,000.00	\$ -	\$ 200,000.00	0%	1.1	0.0	1.1
TOTAL²		\$ 4,000,000.00	\$ 1,310,167.00	\$ 5,310,167.00	33%	12.67	1.50	14.17

² Addition of 1.5 FTE represents a 12% increase in staffing