

Surface Water Management Utility



Requested - \$16,080,100



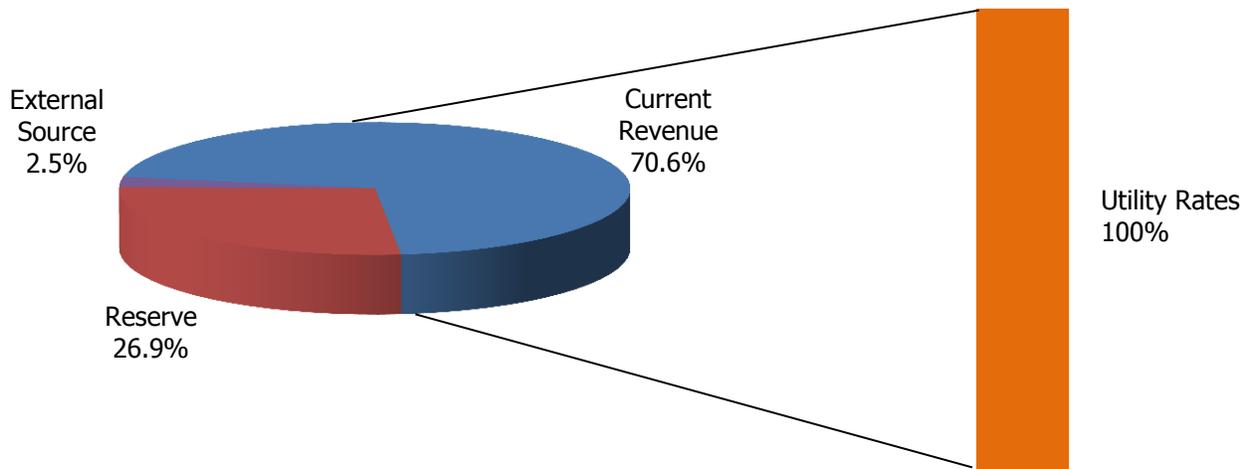
Surface Water Management
100%

Funded - \$13,502,400



Surface Water Management
100%

Funding Sources



Surface Water Management Utility Funding - \$13,502,400

Average Annual Current Revenues

Utility Rates -- \$1,588,000
Total Average Annual Revenue -- \$1,588,000

**City of Kirkland
2013-2018 Capital Improvement Program**

SURFACE WATER MANAGEMENT UTILITY PROJECTS

Funded Projects:

| Project Number | Project Title | Prior Year(s) | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2013-2018 Total | Funding Source | | | |
|---|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|----------|-----------------|
| | | | | | | | | | | Current Revenue | Reserve | Debt | External Source |
| SD 0047 | Annual Replacement of Aging/Falling Infrastructure | 180,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 1,200,000 | 1,200,000 | | | |
| SD 0048 | Cochran Springs / Lake Washington Blvd Crossing Enh. | 232,200 | 340,000 | 667,100 | 450,000 | | | | 1,457,100 | 1,457,100 | | | |
| SD 0051* | Forbes Creek/KC Metro Access Road Culvert Enh. | 260,200 | | | | | 688,000 | 370,700 | 1,058,700 | 1,058,700 | | | |
| SD 0053* | Forbes Creek/Coors Pond Channel Grade Controls | 115,400 | | | | | | 164,700 | 164,700 | 164,700 | | | |
| SD 0058* | Surface Water Sediment Pond Reclamation Phase II | 585,400 | | | | | | 164,700 | 735,600 | 735,600 | | | |
| SD 0059* | Totem Lake Boulevard Flood Control Measures | 115,500 | | | | | | 1,014,800 | 1,014,800 | 1,014,800 | | | |
| SD 0067* | NE 129th Place/Juanita Creek Rockery Repair | 922,000 | 302,800 | 1,048,000 | 223,300 | 238,000 | | 223,300 | 223,300 | 223,300 | | | 336,000 |
| SD 0075~ | Totem Lake Twin 42 Inch Culvert Replacement | | 4,347,000 | | | | | | 4,347,000 | | 3,093,800 | | |
| SD 0076# | NE 141st Street/11th Avenue NE Culvert Repair | | 181,500 | | | | | | 181,500 | | 181,500 | | |
| SD 0077# | Goat Hill Storm Drainage Repair | | | 153,700 | | | | | 153,700 | | 53,100 | | |
| SD 0078# | Billy Creek Ravine Stabilization Phase II | | | 67,400 | | | | | 67,400 | | 160,000 | | |
| SD 0079 | Public Safety Building Stormwater Quality Demonstration | | 160,000 | | 50,000 | | 50,000 | 425,000 | 150,000 | 150,000 | | | |
| SD 0081 | Neighborhood Drainage Assistance Program (NDA) | | 50,000 | | | | | 427,600 | 1,127,600 | 1,127,600 | | | |
| SD 8888* | Annual Streambank Stabilization Program | | | | | 350,000 | 350,000 | | 1,125,000 | 1,125,000 | | | |
| SD 9999* | Annual Surface Water Infrastructure Replacement Program | | | | | 350,000 | 350,000 | | 1,127,600 | 1,127,600 | | | |
| Total Funded Surface Water Management Utility Projects | | 2,410,700 | 5,241,300 | 1,809,100 | 1,638,000 | 1,588,000 | 1,638,000 | 1,588,000 | 13,502,400 | 9,528,000 | 3,638,400 | 0 | 336,000 |

Unfunded Projects:

| Project Number | Project Title | Total |
|--|---|-------------------|
| SD 0045^ | Carillon Woods Erosion Control Measures | 549,600 |
| SD 0046# | Regional Detention in Forbes and Juanita Creek Basins | 2,810,200 |
| SD 0049# | Forbes Creek/108th Avenue NE Fish Passage Improvements | 332,900 |
| SD 0050# | NE 95th Street/126th Avenue NE Flood Control Measures | 55,900 |
| SD 0052^ | Forbes Creek/Slater Avenue Embankment Stabilization | 139,700 |
| SD 0054# | Forbes Creek/BNSFRR Fish Passage Improvements | 424,200 |
| SD 0055 | Forbes Creek / 98th Avenue NE Riparian Plantings | 75,500 |
| SD 0056^ | Forbes Creek Ponds Fish Passage/Riparian Plantings | 213,000 |
| SD 0061^ | Everest Park Stream Channel/Riparian Enhancements | 1,095,500 |
| SD 0062^ | Stream Flood Control Measures at Kirkland Post Office | 345,400 |
| SD 0063^ | Everest Creek-Slater Avenue at Alexander Street | 830,300 |
| SD 0068 | 128th Ave NE/NE 60th Street To NE 64th St Drainage Imp. | 270,300 |
| SD 0070 | Juanita Creek Watershed Enhancement Study | 50,000 |
| SD 0074 | Streambank Stabilization Program - NE 86th Street | 640,200 |
| SD 0080 | Regional Decant and City Maintenance Facility | 10,500,000 |
| Subtotal Unfunded Surface Water Management Utility Projects | | 18,332,700 |
| Funding Available from Annual Programs for Candidate Projects | | 2,252,600 |
| Net Unfunded Surface Water Management Utility Projects | | 16,080,100 |

Notes:

- * = Modification in timing and/or cost (see Project Modification Schedule for greater detail)
- + = Moved from unfunded status to funded status
- ^ = Moved from funded status to unfunded status
- # = Annual Streambank Stabilization Program Project Candidates
- # = Annual Storm Drain Replacement Program Project Candidates
- Shaded year(s) = Previous timing
- Bold Italics = New projects**
- ~Project approved as new project by Council April 17, 2012

Prior Year(s) Funding (Budget to Actuals):

| Project Number | Project Title | Budget | Actual | Balance |
|---|--|------------------|----------------|------------------|
| SD 0048 | Cochran Springs / Lake Washington Blvd Crossing Enh. | 180,000 | 0 | 180,000 |
| SD 0051* | Forbes Creek/KC Metro Access Road Culvert Enh. | 232,200 | 88,092 | 144,108 |
| SD 0053* | Forbes Creek/Coors Pond Channel Grade Controls | 260,200 | 84,147 | 176,053 |
| SD 0058* | Surface Water Sediment Pond Reclamation Phase II | 115,400 | 29,151 | 86,249 |
| SD 0059* | Totem Lake Boulevard Flood Control Measures | 585,400 | 379,640 | 205,760 |
| SD 0067* | NE 129th Place/Juanita Creek Rockery Repair | 115,500 | 0 | 115,500 |
| SD 0075~ | Totem Lake Twin 42 Inch Culvert Replacement | 922,000 | 0 | 922,000 |
| Total Prior Year(s) Funding (Budget to Actuals): | | 2,410,700 | 561,030 | 1,829,670 |

**CITY OF KIRKLAND
2013-2018 CAPITAL IMPROVEMENT PROGRAM
PROJECT SUMMARY**

SURFACE WATER MANAGEMENT UTILITY - Surface Water Management Utility

SD 0047 000 ANNUAL REPLACEMENT OF AGING / FAILING INFRASTRUCTURE

City-wide The regular replacement of aging and/or failing Surface Water Utility infrastructure. The City will prioritize system improvements through the use of a video system that will investigate surface water piping. Following the prioritization, improvements will be identified for either reconstruction using City forces or through the normal contractor bidding process.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| Ongoing | \$0 | \$1,200,000 | \$0 | \$1,200,000 |

SD 0048 000 COCHRAN SPRINGS / LAKE WASHINGTON BLVD CROSSING ENHANCEMENT

Lakeview Sedimentation deposits in the channel downstream of this culvert results in backwater conditions and sedimentation presenting an ongoing maintenance task for City crews. The backwater condition impedes the culvert's capacity to convey large peak events. Additionally, sediment deposition downstream of Lake Washington Boulevard increases the risk of overbank flooding water in the Yarrow Bay business park. Improving fish passage at the culvert will allow access to approximately 375 feet of breeding and rearing habitat. Increasing the culvert's flow capacity will reduce the risk of flooding on Lake Washington Boulevard.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2012 | \$180,000 | \$1,457,100 | \$0 | \$1,637,100 |

SD 0051 000 FORBES CREEK / KING COUNTY METRO ACCESS ROAD CULVERT ENHANCEMENT

South Juanita An existing 12-foot-wide bottomless arch culvert conveys Forbes Creek under a King County sewer easement access road, approximately 145 yards upstream of Forbes Creek Drive and is in need of repair. The stream is eroding under the culvert footings, a hanging outfall at the downstream end of the culvert has created a fish blockage and the gabion walls on the upstream end of the culvert are collapsing. Corrective measures include the installation of log-boulder grade controls to promote channel aggradations up to and inside the culvert, placement of aggraded gravel to protect the eroding footings, repair to the gabion wall and stabilization of the adjacent streambanks.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2006 | \$232,200 | \$1,058,700 | \$0 | \$1,290,900 |

SD 0053 000 FORBES CREEK / COORS POND CHANNEL GRADE CONTROLS

South Juanita Existing structures in the stream have created barriers to fish passage while channel downcutting continues. Install grade control structures, cut down height of structures and install habitat structures. These improvements will raise the channel, improve the fish passage and improve the instream habitat.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2006 | \$260,200 | \$164,700 | \$1,196,100 | \$1,621,000 |

SD 0058 000 SURFACE WATER SEDIMENT POND RECLAMATION (PHASE II)

South Juanita Phase I of the Sediment Pond reclamation project took place in 2004/2005. Phase II will consider flood plain development as an alternative. Project may include additional planting along Juanita Creek. Review potential for converting pond into a flood plain, improve riparian understory vegetation. Plant trees and understory shrubs on City-owned parcel downstream of NE 128th Street. Planting will provide shading for the stream, which will reduce water temperature.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2012 | \$115,400 | \$735,600 | \$0 | \$851,000 |

SD 0059 000 TOTEM LAKE BOULEVARD FLOOD CONTROL MEASURES

Totem Lake Totem Lake Boulevard has a history of flooding during mid to large storm events. Evaluation of the storm drainage system previously completed under this project has identified options for implementing flood control improvements. The improvements include emergency pumping and removal of sediment and vegetation along the conveyance channel. This work will reduce the frequency and magnitude of flooding on Totem Lake Boulevard.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2007 | \$585,400 | \$1,350,800 | \$0 | \$1,936,200 |

SD 0067 000 NE 129TH PLACE/JUANITA CREEK ROCKERY REPAIR

North Juanita

Project will evaluate the replacement and/or repair of streambank rockery damaged during the December 2007 Storm, to include the possible replacement of the culvert crossing at NE 129th Place.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2012 | \$115,500 | \$223,300 | \$0 | \$338,800 |

SD 0075 000 TOTEM LAKE TWIN 42-INCH CULVERT REPLACEMENT

Totem Lake

This project will replace two segments of 42-inch twin corrugated metal pipe (cmp) culverts at approximately 350 lineal feet in length for each segment (700 lineal feet total). The culverts are 40 years old and have exceeded their useful life. The pipe material has deteriorated and has failed at two locations causing sink holes. The culverts are full of sediment and cannot meet flow requirements. The twin culverts will be replaced with one large diameter culvert that will be designed to meet fish passage requirements. This project will involve acquiring a permanent maintenance easement where the culvert runs through private property and obtaining all necessary permits. This project was approved by City Council at their regular meeting of April 17, 2012.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2012 | \$922,000 | \$4,347,000 | \$0 | \$5,269,000 |

SD 0076 000 NE 141ST STREET/111TH AVENUE NE CULVERT HEADWALL REPAIR

Finn Hill

An existing 48" storm pipe has partially filled with sediment and the reduced flow capacity has created backwater conditions at the inlet resulting in channel aggradation, erosion and undermining of adjacent trees, with partial structural failure of the inlet headwall. Fish were observed in the downstream reach and WDFW permitting will likely be required.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2013 | \$0 | \$181,500 | \$0 | \$181,500 |

SD 0077 000 GOAT HILL STORM DRAINAGE REPAIR

Finn Hill

Stream channel delivers sediment to the bottom of the slope where it impacts existing drainage structures and periodically overflows onto private property during high flow events. Project will evaluate and implement the best drainage alternatives including, but not limited to a tight-line stream channel and installation of a drainage structure for ease of maintenance.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2014 | \$0 | \$153,700 | \$0 | \$153,700 |

SD 0078 000 BILLY CREEK RAVINE STABILIZATION PHASE 2

Finn Hill

Construct additional erosion control measures in an upper reach of Billy Creek that has experienced severe erosion from a failed drainage pipe. Phase 1 was constructed in winter of 2011/12 and completed to adjacent property where easement is required. Phase 2 will complete the original design as negotiations with property owner are completed.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2014 | \$0 | \$67,400 | \$0 | \$67,400 |

SD 0079 000 PUBLIC SAFETY BUILDING STORMWATER TREATMENT/REUSE DEMONSTRATION PROJECT

Totem Lake

Provide a water quality treatment component to the City of Kirkland Public Safety Building project. The City plans to renovate an existing structure for use as new Police Department, Court and Jail. The scope of work does not trigger storm water treatment permitting requirements; however, the opportunity to showcase innovative and effective ways to treat and reuse storm water is possible with this project. The project will install a 10,000 gallon cistern to collect roof water runoff for reuse as landscape irrigation, as well as providing storm filters and a rain garden for treatment of parking lot runoff.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2013 | \$0 | \$160,000 | \$0 | \$160,000 |

SD 0081 000 NEIGHBORHOOD DRAINAGE ASSISTANCE PROGRAM (NDA)

City-wide Design and construct small-scale flooding solution occurring outside the public right of way. Projects qualifying for assistance include those situation that are too small to rank highly in the regular Surface Water CIP, will benefit several homes or businesses while serving a general public benefit, and are primarily caused by the cumulative impacts of upstream development. Individual projects will be evaluated and those that qualify will be prioritized. Staff will produce a report each year summarizing the number type and priority of problems that qualify for NDA fixes, and a list of NDA projects completed in the previous year.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| 2013 | \$0 | \$150,000 | \$0 | \$150,000 |

SD 8888 000 ANNUAL STREAMBANK STABILIZATION PROGRAM

City-wide Goals of the streambank stabilization program are to provide the public benefits of improved water quality and decreased flooding by stabilizing and restoring stream channels which may in many cases be located on private property. Most common stabilization methods will be upstream detention and in-stream stabilization/restoration using bioengineering techniques. Candidate projects under this Annual Program include: SD 0063 - Everest Creek - Slater Ave at Alexander St, SD 0061 - Everest Park Stream Channel/Riparian Enhancements, SD 0045 - Carillon Woods Erosion Control Measures, SD 0062 - Street Flood Control Measures at Kirkland Post Office, SD 0056 - Forbes Creek Ponds Fish Passage/Riparian Plantings and SD 0052 - Forbes Creek/ Slater Ave Embankment Stabilization.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| Ongoing | \$0 | \$1,125,000 | \$0 | \$1,125,000 |

SD 9999 000 ANNUAL SURFACE WATER INFRASTRUCTURE REPLACEMENT PROGRAM

City-wide Goals of the storm drain replacement program are to provide the public benefits of improved storm water conveyance. Individual projects will come from the prioritized list within the Surface Water Master Plan and through urgent maintenance needs as they may arise. Candidate projects under this Annual Program include: SD 0075 - Totem Lake Twin 42-Inch Culvert Replacement, SD 0046 - Regional Detention in Forbes and Juanita Basins, SD 0049 - Forbes Creek/108th Ave NE Fish Passage Improvements, SD 0050 - NE 95th St/126th Ave NE Flood Control Measures, SD 0054 - Forbes Creek/Cross Kirkland Corridor Fish Passage Improvements, SD 0076 - NE 141st Street/111th Avenue NE Culvert Headwall Repair, SD 0077 - Goat Hill Storm Drainage Repair, and SD 0078 - Billy Creek Stabilization Phase II.

| PROJECT START | Prior Year(s) | 2013-2018 Total | Future Year(s) | TOTAL PROJECT |
|---------------|---------------|-----------------|----------------|---------------|
| Ongoing | \$0 | \$1,127,600 | \$0 | \$1,127,600 |

Funded Storm Water CIP

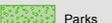
Project Locations

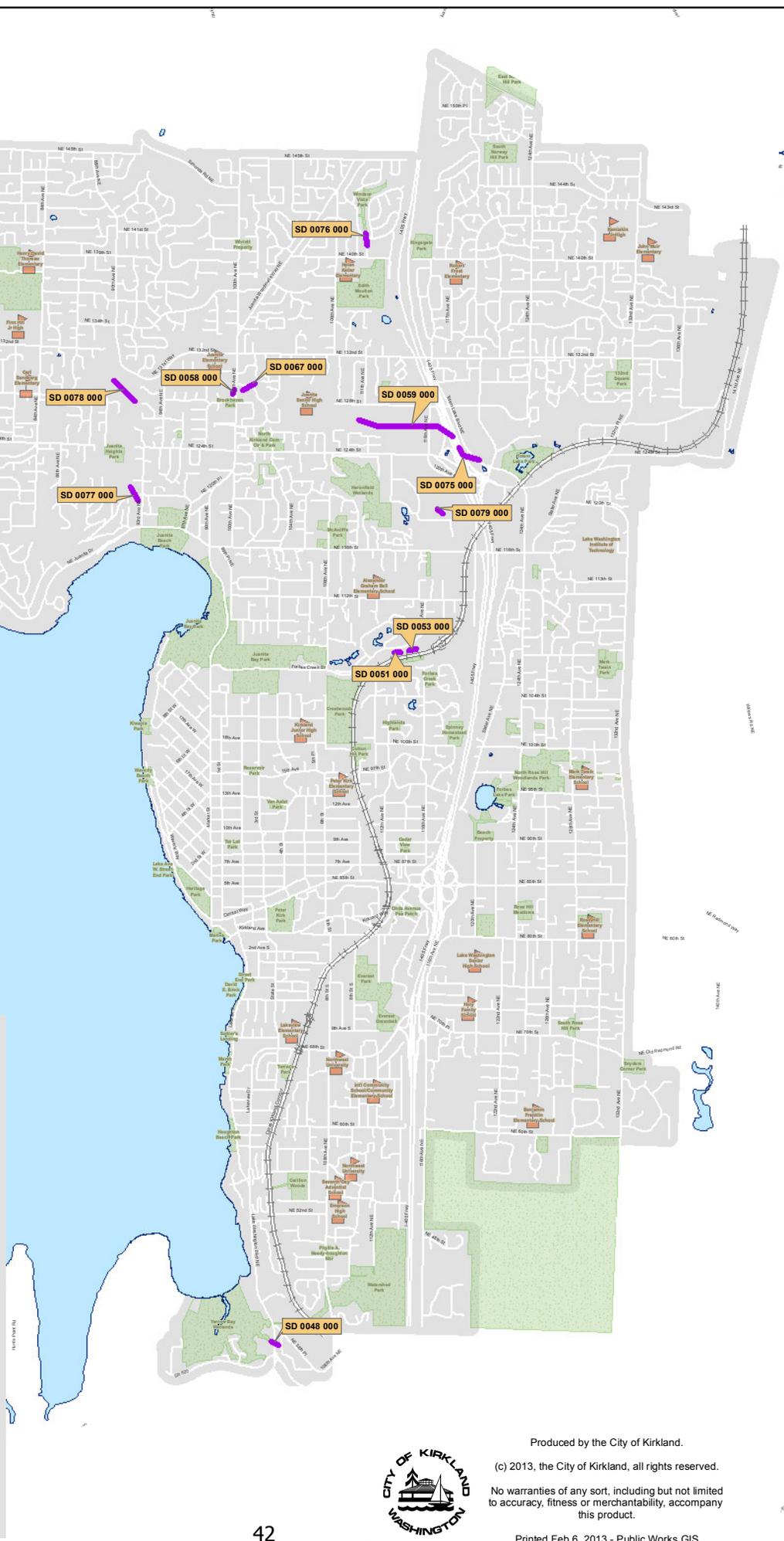
- SD 0048 000 - Cochran Springs / Lake Washington Blvd Crossing Enhancement
- SD 0051 000 - Forbes Creek / King County METRO Access Road Culvert Enhancement
- SD 0053 000 - Forbes Creek / Coors Pond Channel Grade Controls
- SD 0058 000 - Surface Water Sediment Pond Reclamation (Phase II)
- SD 0059 000 - Totem Lake Blvd Flood Control Measures
- SD 0067 000 - NE 129th Pl / Juanita Creek Rockery Repair
- SD 0075 000 - Totem Lake Twin 42-inch Culvert Replacement
- SD 0076 000 - NE 141st St / 111th Ave NE Culvert Headwall Repair
- SD 0077 000 - Goat Hill Drainage Repair
- SD 0078 000 - Billy Creek Ravine Stabilization Phase 2
- SD 0079 000 - Public Safety Bldg SW Quality Demo

Projects with various locations

- SD 0047 000 - Annual Replacement Of Aging/Failing Infrastructure (Various Locations)
- SD 0081 - Neighborhood Drainage Assistance Program (NDA)
- SD 8888 - Annual Streambank Stabilization Program (Various Locations)
- SD 9999 - Annual Storm Drain Replacement Program (Various Locations)

Legend

-  CIP Project
-  Parks
-  Schools



Produced by the City of Kirkland.

(c) 2013, the City of Kirkland, all rights reserved.

No warranties of any sort, including but not limited to accuracy, fitness or merchantability, accompany this product.

Printed Feb 6, 2013 - Public Works GIS