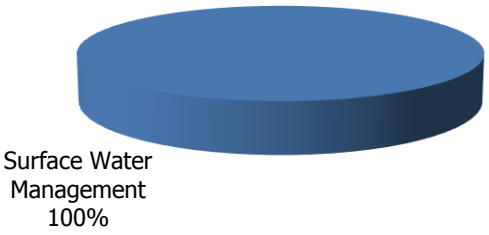
Surface Water Management Utility

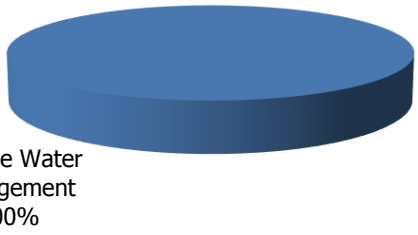
Capital Improvement Program

Surface Water Management Utility

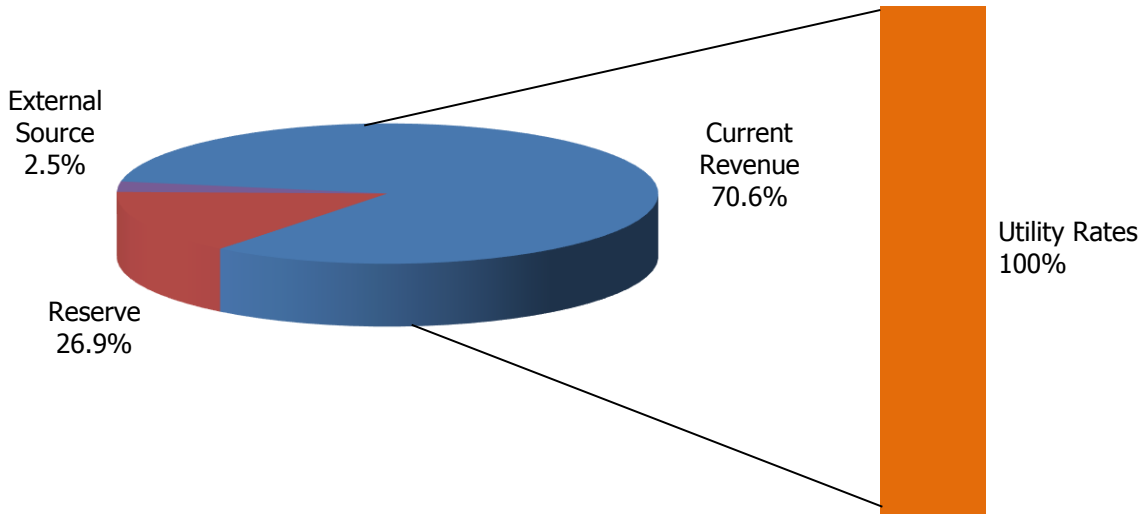
Requested - $34,631,200



Funded - $14,552,000



Funding Sources



Surface Water Management Utility Funding - $14,552,000

Average Annual Current Revenues
Utility Rates - $2,008,667
Total Average Annual Revenue - $2,008,667

City of Kirkland
2017-2022 Preliminary Capital Improvement Program

SURFACE WATER MANAGEMENT UTILITY PROJECTS

Funded Projects:

Project Number	Project Title	Prior Year(s)	2017	2018	2019	2020	2021	2022	2017-2022 Total	Funding Source			
										Current Revenue	Reserve	Debt	External Source
SD 0046-001+	*Regional Detention in Forbes Creek Basin - Phase I*						*609,000*	*1,314,800*	*1,923,800*	*1,923,800*			
SD 0047	*Annual Replacement of Aging/Failing Infrastructure*		*200,000*	*200,000*	*200,000*	*200,000*	*200,000*	*200,000*	*1,200,000*	*1,200,000*			
SD 0049	*Forbes Creek/108th Ave NE Fish Passage Imp*				*230,400*	*196,000*			*426,400*	*426,400*			
SD 0053+	*Forbes Creek/Coors Pond Channel Grade Controls*						*324,900*	*344,600*	*669,500*	*669,500*			
SD 0054+	*Forbes Creek/Cross Kirkland Corridor Fish Passage Improvements*						*324,900*	*344,600*	*669,500*	*669,500*			
SD 0063	*Everest Creek - Slater Ave at Alexander St*					*661,900*	*241,800*		*903,700*	*903,700*			
SD 0076	NE 141st Street/111th Avenue NE Culvert Repair	257,600	683,900						683,900	683,900			
SD 0081	Brookhaven Pond Modifications		50,000		50,000		50,000		150,000	50,000	100,000		
SD 0084	*Market Street Storm Main Rehabilitation*			*268,400*	*616,600*				*885,000*	*885,000*			
SD 0087	*Silver Spurs Flood Reduction*			*77,000*					*77,000*	*77,000*			
SD 0088	*Comfort Inn Pond Modifications*	*407,000*	*309,100*						*309,100*	*309,100*			
SD 0089	*NE 142nd Street Surface Water Drainage Improvements*			*194,000*					*194,000*	*194,000*			
SD 0090	*Goat Hill Drainage Ditch and Channel Stabilization*					*243,400*	*89,600*		*333,000*	*333,000*			
SD 0091	*Holmes Point Drive Pipe Replacement*	*300,400*	*205,600*						*205,600*	*205,600*			
SD 0092	*Juanita Creek Culvert at NE 137th Street*		*149,800*	*535,300*					*685,100*	*685,100*			
SD 0093	*Pleasant Bay Apartments Line Replacement*		*252,600*	*69,400*					*322,000*	*322,000*			
SD 0094	*NE 114th Place Stormline Replacement*					*270,400*			*270,400*	*270,400*			
SD 0097	*Champagne Creek Stabilization*			*402,900*	*408,100*				*811,000*	*811,000*			
SD 0098	*Champagne Creek Stormwater Retrofit*			*125,000*					*125,000*	*125,000*			
SD 0099	*Goat Hill Drainage Conveyance Capacity*				*460,900*	*194,100*			*655,000*	*655,000*			
SD 0100	*Brookhaven Pond Modifications*					*354,200*	*298,800*		*653,000*	*653,000*			
SD 0105	*Property Acquisition Opportunity Fund*		*50,000*	*50,000*	*50,000*	*50,000*	*50,000*	*50,000*	*300,000*	-	*300,000*		
SD 0106 001	CKC Surface Water Drainage at Crestwoods Park Design/Construction	300,000	700,000	-	-	-	-	-	700,000	-	*350,000*		350,000
SD 7777	**Surface Water CAO/SWDM Support**		**1,400,000**						**1,400,000**	-	**1,400,000**		-
Total Funded Surface Water Management Utility Projects		**1,265,000**	**4,001,000**	**1,922,000**	**2,016,000**	**2,170,000**	**2,189,000**	**2,254,000**	**14,552,000**	**12,052,000**	**2,150,000**	**0**	**350,000**

Notes
Italics = Modification in timing and/or cost (see Project Modification/Deletion Schedule for more detail)
Bold = New projects
+ = Moved from unfunded status to funded status
" = Moved from funded status to unfunded status

SURFACE WATER MANAGEMENT UTILITY PROJECTS

Unfunded Projects:

Project Number	Project Title	Total
SD 0045	Carillon Woods Erosion Control Measures	549,600
SD 0046 999	*Regional Detention in Forbes and Juanita Creek Basins*	*8,076,200*
SD 0051	Forbes Creek/King County Metro Access Road Culvert Enhancement	1,290,900
SD 0061	Everest Park Stream Channel/Riparian Enhancements	1,095,500
SD 0085 001	Cross Kirkland Water Quality	920,000
SD 0095"	*NE 141st Street Stormwater Pipe Installation*	*170,000*
SD 0101	**Holmes Point Pipe Replacement at Champagne Creek Basin**	**240,000**
SD 0102	**Juanita Drive Culvert Replacement**	**665,000**
SD 0103	**Lakeview Drive Conveyance Modification**	**2,562,000**
SD 0107	132nd Square Park Stormwater Retrofit Project	4,510,000
Total Unfunded Surface Water Management Utility Projects		**20,079,200**

Notes

Italics = Modification in timing and/or cost (see Project Modification/Deletion Schedule for more detail)

Bold = New projects

" = Moved from funded status to unfunded status

CITY OF KIRKLAND
2017-2022 CAPITAL IMPROVEMENT PROGRAM
PROJECT SUMMARY

SURFACE WATER MANAGEMENT UTILITY - Surface Water Management Utility

SD 0046 001 REGIONAL DETENTION IN FORBES CREEK BASIN - PHASE 1

City-wide

The establishment of detention facilities in the Forbes Creek basin to provide for flow control to serve existing developed areas, and where possible to provide detention for new development/redevelopment project. Siting of these facilities will be dependent on available land, position in and connections to the stormwater network, and community input.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2021	$0	$1,923,800	$0	$1,923,800

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)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
Ongoing	$0	$1,200,000	$0	$1,200,000

SD 0049 000 FORBES CREEK / 108TH AVENUE NE FISH PASSAGE IMPROVEMENTS

South Juanita

108th Avenue NE is elevated above Forbes Creek and the adjacent wetlands. Curbs on both sides of the road appear to prevent street runoff from draining to the stream resulting in standing water on the road during storm events. The existing dual 36-inch corrugated metal pipe culverts also have created a barrier to fish passage. The culverts are located in a depositional area of Forbes Creek resulting in one of the two culverts filling with sediment, restricting fish passage.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2019	$0	$426,400	$0	$426,400

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)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2021	$0	$669,500	$0	$669,500

SD 0054 000 FORBES CREEK / CROSS KIRKLAND CORRIDOR FISH PASSAGE IMPROVEMENTS

South Juanita

The grade of the existing culverts passing under a former railroad spur and under the Cross Kirkland Corridor tracks is too great creating an impediment to fish passage. Restore open channel under the former railroad spur and replace the culvert under Cross Kirkland Corridor track. This improvement will improve fish passage to upstream habitat and is a candidate project included as a component of the Annual Storm Drain Replacement Project, SD 9999.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2021	$0	$669,500	$0	$669,500

SD 0063 000 EVEREST CREEK - SLATER AVENUE AT ALEXANDER STREET

Everest

Flow enters this small ravine from an approximately 135 acre upstream basin via a pipe. Erosion around the pipe outlet has de-stabilized a road near the ravine, and sends large quantities of sand to downstream reaches of the creek, which results in increased maintenance needs in Everest Park. Installation of a highflow bypass and/or other stabilization features will prevent further damage to the road, and will reduce delivery of sediment to downstream areas thus reducing maintenance needs.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2020	$0	$903,700	$0	$903,700

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

Finn Hill

An existing 48-inch 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 Washington Department of Fish & Wildlife (WDFW) permitting will likely be required.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2013	$257,600	$683,900	$0	$941,500

SD 0081 000 NEIGHBORHOOD DRAINAGE ASSISTANCE PROGRAM (NDA)

City-wide

Design and construct small-scale flooding solutions occurring outside the public right of way. Projects qualifying for assistance include those situations 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)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
Ongoing	$0	$150,000	$0	$150,000

SD 0084 000 MARKET STREET STORM MAIN REHABILITATION

Market

Rehabilitate approximately 3,050 linear feet of failing 36-inch and 24-inch diameter concrete storm pipe (joint separated) within Market Street from Central Way to 12th Avenue. Rehabilitation will be accomplished via slipping the 1,200 feet of 36-inch diameter concrete pipe from Central Way to 6th Ave with 24-inch diameter pipe and the 1,850 feet of 24-inch diameter concrete pipe from 6th Ave to 12th Ave with 20-inch diameter pipe. The annular space between the pipe diameters will be grouted. The length of 36-inch diameter pipe includes six manholes that will be rehabilitated and nine laterals to be reconnected. The 24-inch diameter pipe also includes six manholes to be rehabilitated and nine laterals to be reconnected. The cost estimate was based on linear foot costs prepared by Buno Construction in 2009 and have been adjusted for 2018 costs. The project engineering/design and inspection cost estimate is lower as a percentage of construction costs than typical capital projects due to the performance specification aspect of sliplining projects.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2018	$0	$885,000	$0	$885,000

SD 0087 000 SILVER SPURS FLOOD REDUCTION

South Rose Hill

A phased approach to evaluate alternatives and design and construct the preferred alternative to reduce future flooding. The first phase of this project involves an alternatives analysis to determine the best solution to prevent future flooding. One potential alternative was already eliminated because of downstream capacity concerns. Other options include the following: A) Add more infiltration in right-of-way (ROW) or increase the size of the existing facility to maximum extent. Infiltration added in ROW shall be bioinfiltration swales, or equivalent. B) Utilize deep infiltration, such as a underground injection control (UIC) well, for high flow bypass. Deep infiltration shall be located in ROW, with a high flow bypass pipe leading from the dry well to the UIC well.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2018	$0	$77,000	$0	$77,000

SD 0088 000 COMFORT INN POND MODIFICATIONS

Totem Lake

This project was identified by the City in the 2014 Surface Water Master Plan list. Solutions for this CIP include rerouting runoff from the Cross Kirkland Corridor directly to Totem Lake. Pipe size will be 12-inch to match existing pipe sizes in the area. Other options listed below could provide addition benefits to reduce flooding. Project benefits include reducing flow to the wetland and flooding on Totem Lake Blvd. Reroute stormdrain at railroad to bypass pond/wetland, possibly connect with the stormwater feature at NE 124th St and totem Lake Blvd, then pipe to Totem Lake. Reduce contributing area to Comfort Inn pond/wetland from 24.75 acres to 16.45 acres.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2016	$407,000	$309,100	$0	$716,100

SD 0089 000 NE 142ND STREET SURFACE WATER DRAINAGE IMPROVEMENTS

Finn Hill

Local road and property flooding has occurred at the intersection of NE 142nd Street and 77th Ave NE in the vicinity of Inglewood Presbyterian Church. The cause of the flooding is not conclusive, and additional analyses and investigation
is needed to develop a solution. Potential options include adding an inlet structure near the intersection, channel maintenance through the wetland, adding upstream detention or infiltration, and/or installing a high flow bypass. Additional options analysis and hydrologic and hydraulic modeling is necessary to develop a viable alternative.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2018	$0	$194,000	$0	$194,000

SD 0090 000 GOAT HILL DRAINAGE DITCH AND CHANNEL STABILIZATION

Finn Hill

Reconstruct ditch line along the west side of 90th Avenue NE and abandon a culvert crossing along 90th Avenue NE. Abandon a storm drainage channel and replace a catch basin and culvert crossing along NE 117th Place. Stabilize a drainage swale with rip-rap below the culvert crossing along NE 117th Place. Install catch basins and 12-inch storm drainage pipe along 90th Avenue NE and edge grind and overlay 500 feet of roadway with a thickened edge. Upsize a 12-inch culvert crossing to a 24-inch culvert along NE 117th Place.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2020	$0	$333,000	$0	$333,000

SD 0091 000 HOLMES POINT DRIVE PIPE REPLACEMENT

Finn Hill

Currently drainage from Holmes Point Drive NE and above runs through an undersized system at 11645 Holmes Point Drive. There are no easements for maintenance of this system. Additionally, upstream of Holmes Point Dr. NE, groundwater seepage and icing in cold weather occurs along Holmes Point Dr NE. Reroute drainage along Holmes Point Drive in a new pipe to connect to an existing outfall to Lake Washington.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2015	$300,400	$205,600	$0	$506,000

SD 0092 000 JUANITA CREEK CULVERT AT NE 137TH STREET

North Juanita

Install 16 foot by 5.25 foot arch fish passable culvert. Culvert width based on Washington State Department of Fish & Wildlife (WDFW) stream simulation design of 1.25 foot by 11 foot bank full width rounded to the nearest foot. Create 50 feet of restored channel at the culvert inlet and outlet and restore staging areas and channel floodplain with planting and bio-engineered surface restoration.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2017	$0	$685,100	$0	$685,100

SD 0093 000 PLEASANT BAY APARTMENTS LINE REPLACEMENT

Moss Bay

Replace, pipe burst or chemical grout, pipe section on north side of property that is rootbound. Add 12-inch polyvinyl chloride (PVC) pipe from GIS asset No. 304416 and 303609 to Lake Washington Blvd NE.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2017	$0	$322,000	$0	$322,000

SD 0094 000 NE 114TH PLACE STORMLINE REPLACEMENT

North Rose Hill

Replace existing stormline with 12-inch polyvinyl chloride (PVC) storm pipe along 125th Ave NE to 126th Ave NE.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2020	$0	$270,400	$0	$270,400

SD 0097 000 CHAMPAGNE CREEK STABILIZATION

North Juanita

Streambank improvements including 500 feet of roughened channel using a mixture of large boulders, cobbles, gravels, sand, and large wood.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2018	$0	$811,000	$0	$811,000

SD 0098 000 CHAMPAGNE CREEK STORMWATER RETROFIT

Finn Hill — Construct a 2,500 square feet rain garden at the intersection. Install a flow splitter structure at end of existing driveway culvert. High flows bypass the rain garden via the existing asphalt ditch.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2018	$0	$125,000	$0	$125,000

SD 0099 000 GOAT HILL DRAINAGE CONVEYANCE CAPACITY

South Juanita — Project includes the following improvements: replacement of 12-inch culvert along NE 118th Place; replacement of 8-inch storm drainage pipe with a 12-inch storm drainage pipe; Replacement of a 8-inch culvert with a 12-inch culvert along NE 166th Place; Replacement of Type 1 Catch basin along NE 116th Place; Replacement of 12-inch storm drainage pipe with 24-inch storm drainage pipe; and replacement of catch basins with storm drainage manholes.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2019	$0	$655,000	$0	$655,000

SD 0100 000 BROOKHAVEN POND MODIFICATIONS

North Juanita — Converts pond to floodplain; Grade existing pond to provide storage. Establish plantings for habitat and to disperse flow as it enters the floodplain. Install bio-engineered floodplain structures (anchored as needed). Install Filterra systems along 100th Ave NE for water quality and to separate runoff from 100th Ave NE and NE 127th Place. NE 127th Pl Drainage will discharge directly to Juanita Creek with no new Filterra units.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2020	$0	$653,000	$0	$653,000

SD 0105 000 PROPERTY ACQUISITION OPPORTUNITY FUND

City-wide — An opportunity fund to acquire riparian and wetland properties in the City for improving surface water quality and run-off.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
Ongoing	$0	$300,000	$0	$300,000

SD 0106 001 CKC SURFACE WATER DRAINAGE AT CRESTWOODS PARK DESIGN/CONSTRUCTION

Totem Lake — Design and construct repair for 24-inch Reinforced Concrete Pipe culvert, crossing the Cross Kirkland Corridor (CKC) between NE 104th St and 111th Ave NE, and carrying an unnamed tributary to Forbes Creek. The existing pipe is too short and has caused undermining of the adjacent slopes and trail at the outfall. A fall of approximately 5 vertical feet currently exists from the outlet invert to the adjacent stream bed, leading to backsplash and slope failure observed.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
2016	$300,000	$700,000	$0	$1,000,000

SD 7777 000 SURFACE WATER CAO/SWDM SUPPORT

City-wide — This project provides for the additional design and construction costs for City right-of-way capital projects to comply with the requirement changes of the 2016 City updates to Critical Areas Ordinance Codes (KMC Chapters 83, 85, and 90) and the 2016 City adoption of the April 24, 2016 King County, Washington Surface Water Design Manual.

PROJECT START	Prior Year(s)	2017-2022 Total	Future Year(s)	TOTAL PROJECT
On-going	$300,000	$1,400,000	$0	$1,700,000

City of Kirkland
Preliminary 2017-2022 Capital Improvement Program

ACTIVE PROJECTS - SURFACE WATER

Project Number	Project Title	Project Budget as of 2014	Pending Adjustments	2015-16 Funding	Total Current Funding	Expenses as of 12/31/2015	Project Balance 12/31/2015
SD 0025 000	NE 85th Street Detention	621,800		-	621,800	528,309	93,491
SD 0048 000	Cochran Spr/Lk Wash Blvd	520,000		1,450,000	1,970,000	445,744	1,524,256
SD 0051 000	Forbes Creek/KC Metro Access Road Culvert Enhn.	232,200		-	232,200	88,092	144,108
SD 0053 000	Forbes Creek/Coors Pond Channel Grade Controls	260,200		-	260,200	89,619	170,581
SD 0058 000	Surface Water Sediment Pond Reclamation Phase II	115,400		-	115,400	35,664	79,736
SD 0059 000	Totem Lake Blvd Flood Control	1,936,200		-	1,936,200	814,949	1,121,251
SD 0067 000	NE 129th Place/Juanita Creek Rockery Repair	115,500		370,000	485,500	482,220	3,280
SD 0075 000	Totem Lake Twin Culvert Replacement	4,416,000	176,230	-	4,592,230	4,043,776	548,454
SD 0076 000	NE 141st Street/111th Avenue NE Culvert Repair	181,500		76,100	257,600	38,836	218,764
SD 0077 000	Goat Hill Storm Drainage Repair	153,700		840,000	993,700	189,062	804,638
SD 0078 000	Billy Creek Ravine Stabilization Phase II	87,600		230,000	317,600	59,547	258,053
SD 0079 000	Pub Sfty Bldg SW Qual	160,000		-	160,000	151,565	8,435
SD 0080 000	Regional Decant/COK Maintenance Facility	-		-	-	28,258	(28,258)
SD 0082 000	Kirkland Decant Facility Expansion	1,268,000		-	1,268,000	1,334,188	(66,188)
SD 0083 000	7th Avenue S Storm Main Replacement	240,000		-	240,000	146,677	93,323
SD 0085 000	Cross Kirkland Corridor (CKC) Storm Water Retro	120,000		-	120,000	110,495	9,505
SD 0086 000	99th Place NE Stormwater Pipe Replacement	-		390,000	390,000	384,402	5,598
SD 0088 000	Comfort Inn Pond Modifications	-		407,000	407,000	-	407,000
SD 0091 000	Holmes Point Drive Pipe Replacement	-		300,400	300,400	5,509	294,891
SD 0096 000	CKC Emergent Projects Surface Water Opportunity Fund	-		100,000	100,000	-	100,000
SD 0105 000	Property Acquisition Opportunity Fund	-		50,000	50,000	-	50,000
SD 0106 000	CKC Surface Water Drainage at Crestwoods Park Study	-		40,000	40,000	9,572	30,428
SD 0106 001	CKC Surface Water Drainage at Crestwoods Park Construction	-		300,000	300,000	-	300,000
SD 1447 000	Annual Storm Drain Replacement	200,000		-	200,000	259,062	(59,062)
SD 1547 / 1647	Annual Storm Drain Replacement	-		200,000	200,000	15,335	184,665
SD 1581 000	Neighborhood Drainage Assistance Program	-		50,000	50,000	-	50,000
SD 8888 000	Annual Streambank Stab Prgrm	274,900		44,200	319,100	-	319,100
SD 9999 000	Annual Surface Water Inf. Replacement Program	218,000		44,200	262,200	-	262,200
Total		**11,121,000**	**176,230**	**4,891,900**	**16,189,130**	**9,260,883**	**6,928,247**