

# CHAPTER 9

## CAPITAL IMPROVEMENTS

### INTRODUCTION

This Chapter presents the proposed schedule to implement the 6-year Capital Improvement Plan (CIP). Wastewater system capital improvements have been scheduled and prioritized on the basis of public health concerns, growth, regulatory requirements, component reliability, system benefit, and financial priority. Projects for the 10-year and 20-year planning periods have also been identified; however, projects are currently only scheduled for the 10-year planning period (2007 through 2016). When the Plan is updated at the end of the 6-year planning period, the projects presented for the future planning period should be reevaluated and scheduled for the subsequent 6-year planning period if necessary.

The estimated cost of each of the projects is given in this chapter. Detailed cost estimates are included in Appendix P. It is assumed in each estimate that complete road restoration will be required. Coordination with other infrastructure or road paving projects may reduce costs and will be considered in planning for the construction of future facilities.

In the future, other projects may arise that are not identified as part of the District's CIP. Such projects may be deemed necessary for accommodating improvements proposed by other agencies or addressing unforeseen problems with the District's wastewater system. Due to budgetary constraints, the completion of these projects may require that the proposed completion date for projects in the CIP be rescheduled. The District retains the flexibility to reschedule proposed projects and to expand or reduce the scope of proposed projects, as best determined by the District's Commissioners when new information becomes available for evaluation. Each capital improvement project should be reevaluated to consider the most recent planning efforts as the proposed completion date for the project approaches.

The CIP is categorized into five categories:

- Miscellaneous (M)
- Sewer extensions (E)
- Lift stations (L)
- I/I program (I)
- Gravity sewer replacement (R)

Each category is further divided into a detailed list of projects presented chronologically over the 20-year planning period. Cost estimates are provided for projects identified for the 10-year planning period. Projects after the year 2026 are included in the CIP;

however, these projects do not have a fully developed cost estimate since the projects are beyond the 10-year planning period. A sewer base map illustrating the locations of all CIP projects for the 10-year planning period is presented at the back of this Plan.

## **MISCELLANEOUS (M)**

The District has identified a number of miscellaneous or general projects that will be fully or partially funded by the wastewater utility.

The cost estimates for the general improvements and upgrades are summarized in Table 9-1.

### **M-1: Bypass Pump (2007)**

**Cost: \$60,000.**

The District plans to maintain the ability to pump flows around a line break, should one occur. The bypass pump will be a diesel engine-driven portable pump with a capacity of 1,000 gpm.

### **M-2: Service Van (2007)**

**Estimated Project Cost: \$65,000**

The District plans to increase the size of its service fleet in the 10-year planning period. As part of this program the District will purchase a Service Van.

### **M-3: Construction of Building B Service Bay (2010 – 2011)**

**Estimated Project Cost: \$500,000 (\$250,000 for Water Utility and \$250,000 for Wastewater Utility)**

The District plans to construct a new bay at its District Headquarters for servicing vehicles. The wastewater utility will fund half of the project's costs.

### **M-4: Decant Facility (2010 – 2011)**

**Estimated Project Cost: \$500,000**

The District plans to construct a vector truck decant facility and gravel/aggregate storage area on the northeast corner of the District Headquarters site. The decant facility will accept vector wastes and serve to separate the solid materials from the liquid before the liquid waste is discharged to the sanitary sewer. The decant facility will include a covered discharge pad with a solids dewatering area and sump connected to the sanitary sewer.

**M-5: Easement Issues (2007)**

**Estimated Project Cost: \$50,000 (\$25,000 for Water Utility and \$25,000 for Wastewater Utility)**

The District plans to allocate funds to address easement issues, including easement encroachment and acquiring the easements for existing sewer mains that are unrecorded.

**M-6: Emergency Operations Center (2010 – 2011)**

**Estimated Project Cost: \$1,000,000 (\$500,000 for Water Utility and \$500,000 for Wastewater Utility)**

The District plans to construct a vehicle storage and emergency operations center (EOC) at the Inglemoor Tank Farm site to use as an alternative base of operations if the District Headquarters cannot be reached in an emergency. The wastewater utility will fund half the cost to construct the Emergency Operations Center.

**M-7: Non Potable Water Filling Station (2012)**

**Estimated Project Cost: \$40,000**

The District plans to construct a non-potable water filling station for the distribution of reclaimed water produced at the new Brightwater WWTF. The facility will be located at the North Kenmore Portal at 80<sup>th</sup> Avenue NE and NE 195<sup>th</sup> Street.

**M-8: Vactor Truck (2012)**

**Estimated Project Cost: \$350,000**

The District plans to purchase a Vactor Truck to provide more efficient operation and maintenance of its sewers.

**M-9: Wastewater Comprehensive Plan (2012)**

**Cost: \$70,000.**

The District plans to update its Wastewater Comprehensive Plan in 2012.

**M-10: Flush Truck (2019)**

**Beyond 10-year Planning Period**

The District plans to purchase a Flush Truck in 2019; a cost estimate is not provided at this time.

**TABLE 9-1**

**Miscellaneous Capital Improvements**

<b>Project No.</b>	<b>Year</b>	<b>Project Name</b>	<b>Cost<sup>(1)</sup></b>
M-1	2007	Bypass Pump	\$60,000
M-2	2007	Service Van	\$65,000
M-3	2010 – 2011	Building B Service Bay	\$250,000
M-4	2010 – 2011	Decant Facility	\$500,000
M-5	2007	Easement Issues	\$20,000
M-6	2010 – 2011	Emergency Operations Center	\$500,000
M-7	2012	Non Potable Water Filling Station	\$70,000
M-8	2012	Vactor Truck	\$350,000
M-9	2012	Wastewater Comp Plan	\$70,000
M-10	2019	Flush Truck	Beyond 10-year Planning Period

(1) Construction Cost Index (CCI) = 8,612 September 2006.

**SEWER EXTENSIONS (E)**

Approximately 6 years ago, the District initiated a sewer build-out program that extended sewer service to areas of the District that are presently developed with homes served by on-site septic systems. The District plans to continue this program with the goal of providing sewer service to the majority of parcels that are presently served by on-site septic systems within the next 8 years. In addition to providing customers with more reliable sewer service, this program may also help improve water quality in nearby streams, rivers and Lake Washington by reducing the number of septic tanks. In support of this, the District published the Sewer System Buildout Catalog in 2006. This catalog identifies all of the sewer extension projects required to serve the remaining parcels within the District that do not currently have access to sewer service. Each project includes a preliminary design, cost estimate and an identification of potential environmental issues.

There are a total of 63 projects identified in the catalog to build out the sewer system. Of these, 27 projects have been identified as CIP projects, 34 projects have been identified as DE projects with no or limited CIP potential, and five have been identified as extremely difficult or infeasible to build. The projects in the catalog were prioritized based on three primary criteria, including: 1) the ability of the project to bring sewer service to areas that are already developed and served by on-site septic systems, versus providing service to undeveloped property; 2) the normalized total cost of the project; and 3) the constructability of the project relative to the environmental constraints, permitting issues and easement requirements.

Buildout of the sewer system is estimated to cost \$20,906,300 and will take approximately 16 years to complete, assuming that the District would build all of the projects with an average annual expenditure of \$1,350,000. However, it is the District's intent to only construct the 27 CIP projects identified in the plan by 2014 at an estimated cost of \$10,810,000. The remaining projects will be built by developers, ULID, or may never be built.

**TABLE 9-2****Sewer Extension Capital Improvements 2007 through 2022<sup>(1)</sup>**

<b>Project No.</b>	<b>Project Name</b>	<b>Priority</b>	<b>Map Grid</b>	<b>Length</b>	<b>Total Project Cost</b>
E-06	118/72 Sewer	2007	K5	2,475	\$695,500
E-07	68/HPD Sewer	2007	K4	845	\$239,100
E-31	186/80 Sewer	2007	B6	185	\$66,200
E-47	Tolt/91 Sewer	2007	C7	570	\$208,100
E-01	134/108 Sewer	2008	H9-H10	2,510	\$819,100
E-51	147/Simonds Swr	2008	F7	210	\$85,800
E-52	145/121 Sewer	2009	G11	940	\$225,000
E-11	120/89 Sewer	2009	K7	2,375	\$881,400 <sup>(3)</sup>
E-29	175/89 Sewer	2009	D7	245	\$89,700
E-44	204/80 Sewer	2009	A6	510	\$515,100 <sup>(3)</sup>
E-70	193/49 Sewer	2009	B2	300	\$217,100 <sup>(3)</sup>
E-50	156/74 Sewer	2009	E5	410	\$218,300 <sup>(3)</sup>
E-71	177/86 Sewer	2009	C7	275	\$178,200 <sup>(3)</sup>
E-04	121/72 Sewer	2009	K5	245	\$97,750
E-72	160/112 Sewer	2010	E10	1,360	\$318,000 <sup>(3)</sup>
E-48	165/77 Sewer	2010	E6	315	\$84,600
E-62	155/79 Sewer	2010	F6	815	\$304,100
E-02	117/82 Sewer	2010	K6-K7	1,420	\$476,400
E-05	159/82 Sewer	2010	E6-E7	595	\$165,400
E-22	133/88 Sewer	2010	H7	1,245	\$389,000
E-14	132/68 Sewer	2011	H5	310	\$113,300
E-15	110/85 Sewer	2011	L7	1,355	\$437,700
E-21	163/74 Sewer	2011	E5	2,640	\$715,700
E-60	124/68 Sewer	2012	J5	1,904	\$483,100
E-61	152/105 Sewer	2012	E9	2,455	\$732,800
E-09 <sup>(4)</sup>	126/72 Sewer	2013	J5	1,515	\$1,159,100
E-63	156/78 Sewer	2014	E6	1,100	\$894,200
E-08	125/HPD Sewer	2015	J4	1,510	\$410,600
E-16	138/62 Sewer	2015	H4	735	\$256,100
E-26	163/90 Sewer	2015	E7	1,030	\$315,700
E-32	200/73 Sewer	2015	A5	1,095	\$268,600
E-10	120/91 Sewer	2016	K7	1,325	\$415,200
E-30	178/86 Sewer	2016	C7	615	\$178,000
E-35	203/80 Sewer	2016	A6	1,500	\$384,800
E-37	112/77 Sewer	2016	L6	1035	\$313,700

**TABLE 9-2 – (continued)**

**Sewer Extension Capital Improvements 2007 through 2022<sup>(1)</sup>**

<b>Project No.</b>	<b>Project Name</b>	<b>Priority</b>	<b>Map Grid</b>	<b>Length</b>	<b>Total Project Cost</b>
E-41	189/68 Sewer	2016	B4	450	\$126,300
E-33	190/40 Sewer	2017	B1	4,415	\$1,321,200
E-25	163/76 Sewer	2018	E6	1740	\$348,300
E-28	176/86 Sewer	2018	C7	245	\$78,300
E-34	192/39 Sewer	2018	B1	815	\$233,400
E-42	182/68 Sewer	2018	C4	220	\$81,300
E-54	157/124 Sewer	2018	E12	150	\$55,400
E-59	145/88 Sewer	2018	F7	200	\$65,400
E-36	160/Tolt Sewer	2018	E9	1,650	\$352,100
E-20	167/72 Sewer	2019	D5	340	\$114,200
E-38	116/89 Sewer	2019	K7	3620	\$763,200
E-46	Tolt/82 Sewer	2019	B6	390	\$105,000
E-53	160/124 Sewer	2019	E11	530	\$166,600
E-57	131/94 Sewer	2019	J8	270	\$71,700
E-03	124/84 Sewer	2020	K7	450	\$135,900
E-17	135/HPD Sewer	2020	H4	2430	\$748,900
E-19	170/75 Sewer	2020	D5	600	\$204,600
E-43	190/74 Sewer	2020	B5	210	\$60,300
E-56	131/96 Sewer	2020	J8	375	\$120,500
E-12	131/HPD Sewer	2021	J4	1,375	\$318,900
E-18	169/84 Sewer	2021	D6	240	\$118,500
E-24	144/77 Sewer	2021	F6	490	\$163,400
E-27	173/91 Sewer	2021	D7	605	\$176,500
E-40	200/61 Sewer	2021	A3	150	\$36,200
E-45	195/80 Sewer	2021	A6	2350	\$479,800
E-13	130/68 Sewer	2022	J5	570	\$177,300
E-23	150/81 Sewer	2022	F6	600	\$171,600
E-39	129/70 Sewer	2022	J5	585	\$171,300
E-49	160/76 Sewer	2022	E6	660	\$195,600
E-55	137/90 Sewer	2022	H7	205	\$41,400
E-58	122/93 Sewer	2022	K7-K8	1520	\$350,500
<b>8-Year Total Project Costs (2007 Through 2014)</b>					<b>\$10,810,000</b>
<b>Total Project Costs (2007 Through 2022)</b>					<b>\$20,906,300</b>

- (1) Source: Sewer System Buildout Catalog. Cost includes total construction cost, engineering and administration, easements, and permits.
- (2) Construction cost index (CCI) = 8,612 September 2006.
- (3) Updated Construction Cost Index (CCI) = 8,704 April 2009.
- (4) Project No. E-9 could possibly install a gravity sewer for a total project cost estimate of \$1,569,700.

## **LIFT STATIONS (L)**

It is necessary to upgrade the capacity and replace pumps as they reach the end of their useful life. In accordance with Department of Ecology recommendations, lift stations should also be designed with 100 percent redundancy and emergency power connections.

**L-1: Lift Station No. 14 (2007)**  
**Estimated Project Cost: \$1,500,000**

The District is in the process of replacing Lift Station No. 14 with a completely new facility, which includes the installation of a permanent generator and a new structure.

**L-2: Lift Station No. 19 (2008)**  
**Estimated Project Cost: \$179,000**

The District will install chopper pumps and a permanent generator at Lift Station No. 19.

**L-3: Lift Station No. 10 (2008)**  
**Estimated Project Cost: \$500,000**

The District plans to replace Lift Station No. 10 with a gravity line.

**L-4: Lift Station Nos. 17 and 18 and Lift Station Nos. 1, 2 and 4 (2009)**  
**Estimated Project Cost: \$450,000**

This District plans to install permanent generators at Lift Station Nos. 1, 2 and 4, as well as a permanent generator at Lift Station No. 17 to serve both Lift Station Nos. 17 and 18.

**L-5: Lift Station No. 1 (2009)**  
**Estimated Project Cost: \$10,000**

The District plans to structurally repair the retaining wall adjacent to the access to Lift Station No. 1.

**L-6: Lift Station No. 3 (2011)**  
**Estimated Project Cost: \$400,000**

The District plans to replace Lift Station No. 3. The lift station was first brought online in 1981 and will be in need of an upgrade. The project will include the installation of a permanent generator.

**L-7: Lift Station No. 15 (2012)**  
**Estimated Project Cost: \$425,000**

The District plans to replace Lift Station No. 15 and install a permanent generator. The lift station was first brought online in 1977 and is in need of an upgrade. The project will include the replacement of the mechanical and electrical controls and recoat the wet well. In addition, 100 feet of force main will be replaced.

**L-8: Lift Station No. 19 (20-year planning period)**

The District plans to replace Lift Station No. 19 with a gravity sewer line.

**TABLE 9-3**

**Lift Station Capital Improvements**

<b>CIP No.</b>	<b>Lift Station No.</b>	<b>Year</b>	<b>Map Grid</b>	<b>Lift Station Improvements</b>	<b>Cost<sup>(1)</sup></b>
L-1	14	2007	G-7	Replace lift station, install new structure, install a generator	\$1,500,000 <sup>(2)</sup>
L-2	19	2008	E-10	Install chopper pumps, electrical upgrades and install a generator	\$ 179,000
L-3	10	2008	K-4	Lift station overhaul	\$ 500,000
L-4	1, 2, 4 & 17/18	2009	D-7	Install generators	\$ 450,000
L-5	1	2009	F-3	Repair wall	\$ 10,000
L-6	3	2011	F-4	Lift station overhaul	\$ 400,000
L-7	15	2012	H-4	Lift station overhaul	\$ 425,000
L-8	19	20-Year Planning Period	E-10	Replace with gravity sewer line	20-Year Planning Period

(1) Construction cost index (CCI) = 8,612 September 2006.

(2) Roth Hill Engineering Partners April 2006.

**INFILTRATION AND INFLOW PROGRAM**

The CIP allocates funds each year for an I/I investigation and reduction program. The targeted basins are those with KCDNR established I/I rates greater than 1,100 gpad (gallons per acre per day); a peak I/I rate of 1,100 gpad serves as a KCDNR established guideline. The I/I investigation program consists of flow monitoring, visual manhole inspections, TV inspections, and smoke testing.

Basin NUD040 (Figure 5-1, Table 5-8) has already undergone visual manhole inspections, TV inspections, smoke testing, and flow monitoring; however, the District plans to repeat flow monitoring for this basin. The District also plans to repeat flow monitoring for basins NUD024, NUD026, NUD036, and NUD049, since the previous



flow monitoring in these basins was done during a relatively dry period. Flow monitoring will be conducted during wet weather for all basins identified in Table 9-4.

Visual manhole inspections were completed for basins NUD040, NUD025, and NUD049, in February and March 2004 and do not need to be repeated. TV inspections were conducted to basins NUD015, NUD053, and NUD040 in December 2004 and January 2005 and do not need to be repeated. The I/I investigation projects are prioritized in Table 9-4 in order of importance based on the KCDNR established peak I/I rates in Table 5-5 and the deficiencies identified by the model to be the result of high I/I in Table 8-1. Basin NUD040 is the first priority since a significant amount of work has already been done on this basin, and KCDNR identified this basin as being one of the most problematic.

The cost estimates listed in Table 9-4 include the cost for smoke testing, manhole inspections, a review of the TV inspections, and flow monitoring. The cost for smoke testing, manhole inspections, and a review of the TV inspections is approximately \$3,200 per 5,000 lineal feet of sewer. The cost for flow monitoring each basin is approximately \$10,000. The District plans an investigation of each basin with a peak I/I rate greater than 1,100 gpad over the next 10 years. The CIP allocates a minimum of \$250,000 per year towards the I/I investigation program for rehabilitation and replacement.

**TABLE 9-4**

**Infiltration and Inflow Investigation**

<b>CIP No.</b>	<b>Basin No.</b>	<b>Year</b>	<b>Length (Feet)</b>	<b>Total Cost<sup>(1),(2)</sup></b>
I-1	NUD040 <sup>(3)</sup>	2007	22,281	\$10,000
I-2	NUD75	2007	13,822	\$18,700
I-3	NUD052	2007	31,563	\$30,000
I-4	NUD013	2007	24,431	\$25,500
I-5	NUD031	2008	22,124	\$24,000
I-6	NUD010	2008	17,380	\$21,000
I-7	NUD046	2008	19,328	\$22,200
I-8	NUD012	2008	17,906	\$21,300
I-9	NUD028	2008	36,337	\$33,000
I-10	NUD026 <sup>(5)</sup>	2009	20,514	\$23,000
I-11	NUD004	2009	20,008	\$22,700
I-12	KENMR054	2009	4,384	\$12,800
I-13	NUD042	2009	24,511	\$25,500
I-14	KENMR041	2009	4,840	\$13,100
I-15	NUD053 <sup>(6)</sup>	2009	13,822	\$18,700
I-16	NUD036 <sup>(5)</sup>	2009	26,493	\$26,800

**TABLE 9-4 – (continued)**

**Infiltration and Inflow Investigation**

<b>CIP No.</b>	<b>Basin No.</b>	<b>Year</b>	<b>Length (Feet)</b>	<b>Total Cost<sup>(1),(2)</sup></b>
I-17	NUD043	2010	27,395	\$27,300
I-18	NUD5	2010	13,822	\$18,700
I-19	NUD014	2010	24,763	\$25,700
I-20	NUD021	2010	21,349	\$23,500
I-21	NUD025 <sup>(4)</sup>	2010	30,497	\$29,300
I-22	NUD024 <sup>(5)</sup>	2011	18,858	\$21,900
I-23	NUD007	2011	21,805	\$23,800
I-24	NUD041	2011	26,933	\$27,000
I-25	NUD030	2011	17,699	\$21,200
I-26	NUD049 <sup>(4), (5)</sup>	2011	16,236	\$20,300
I-27	NUD003	2012	22,162	\$24,000
I-28	NUD038	2012	31,876	\$30,200
I-29	NUD034	2012	14,925	\$19,400
I-30	NUD001	2012	25,604	\$26,200
I-31	NUD032	2012	22,254	\$24,100
I-32	NUD009	2013	20,865	\$23,200
I-33	NUD048	2013	13,393	\$18,500
I-34	NUD044	2013	12,207	\$17,700
I-35	NUD019	2013	22,864	\$24,500
I-36	NUD015 <sup>(6)</sup>	2013	27,399	\$27,300
I-37	NUD045	2014	8,838	\$15,600
I-38	NUD050	2014	11,829	\$17,500
I-39	LFP001	2014	14,872	\$19,400
I-40	NUD029	2014	36,962	\$33,400
I-41	NUD005	2014	25,598	\$26,200
I-42	NUD017	2014	17,479	\$21,100
I-43	NUD020	2015	23,691	\$25,000
I-44	INGWD51A	2015	26,521	\$26,800
I-45	NUD008	2015	26,197	\$26,600
I-46	NUD002	2015	24,046	\$25,200
I-47	NUD011	2015	22,768	\$24,400

- (1) Construction cost index (CCI) = 8,612 September 2006, based on a unit cost of \$11,000 per 17,000 lineal feet.
- (2) Includes flow monitoring, smoke testing, manhole inspections, and review of the TV inspections, except where indicated.
- (3) Manhole inspections, TV inspections, and smoke testing have already been done to this basin and do not need to be repeated.
- (4) Visual manhole inspections have already been done in these basins and do not need to be repeated.
- (5) Flow monitoring has already been done in these basins; however, flow monitoring will be repeated.
- (6) TV inspection has already been done and does not need to be repeated.

## **GRAVITY SEWER REPLACEMENT (R)**

The hydraulic model developed in Chapter 6 identifies the sewers that are over capacity. The model assumptions and input parameters are presented in Chapter 6. The input parameters are summarized in Table 5-9 and the peak I/I rates are presented in Table 5-5. All deficiencies are summarized in Table 8-1. Only the projects identified as deficient due to growth are included in the CIP. The sewers, which are over capacity due to excessive I/I are not included in the gravity sewer replacement project list; these sewers will be rehabilitated as part of the I/I program. The locations of the gravity sewer replacement projects are presented on the sewer base map and summarized in Table 9-5. The hydraulic model is also used to determine the recommended pipe size listed in Table 9-5.

The District has also identified projects to replace aging sewer mains; the *2000 Wastewater System Comprehensive Plan* conducted an aging sewer main analysis. The gravity sewer replacement projects encompass the aging mains that the District has identified for replacement.

The CIP also allocates an additional \$250,000 per year for the rehabilitation of sewers and manholes based on I/I investigation; these costs cannot be directed until the I/I investigation is complete and problems have been identified. However, some projects have been identified based on the results of manhole and sewer investigations thus far, these additional projects are discussed below and included in the CIP. Scheduled manhole rehabilitation projects are summarized in Table 9-6.

### **R-1: Repair Exposed Pipe near Inglewood Road NE at the Inglewood Golf Course (2009)**

**Estimated Project Cost: \$16,000**

The project will structurally secure approximately 75 feet of exposed 12-inch-diameter concrete gravity sewer.

### **R-2: Repair Exposed ULID-66 Pipeline on 88<sup>th</sup> Avenue NE and NE 163<sup>rd</sup> Street (2009)**

**Estimated Project Cost: \$85,000**

The project will reanchor 1,300 linear feet of exposed 8-inch-diameter HDPE gravity sewer, situated on a steep slope.

**R-3: Repair Broken Pipe on 124<sup>th</sup> Avenue NE and NE 144<sup>th</sup> Street (2009)**  
**Estimated Project Cost: \$15,000**

The project will cut and cap the 8-inch-diameter concrete pipeline that extends along 124<sup>th</sup> Avenue NE at NE 144<sup>th</sup> Street. The manhole (Manhole No. 4360) north of NE 144<sup>th</sup> Street will be abandoned.

**R-4: Repair Sag on Juanita Drive NE South of NE 120<sup>th</sup> Street (2007)**  
**Estimated Project Cost: \$41,000**

The project will repair a sag in the 10-inch-diameter concrete gravity sewer in Juanita Drive NE.

**R-5: Replace Broken Pipe South of Juanita Drive NE near 93<sup>rd</sup> Avenue NE (2007)**  
**Estimated Project Cost: \$113,000**

The project will replace approximately 300 linear feet of 8-inch-diameter cast iron gravity sewer.

**R-6: Replace Pipeline From Manhole No. 5916 to Manhole No. 5925 (2008)**  
**Estimated Project Cost: \$125,000**

The project will replace 180 lineal feet of 8-inch gravity sewer with 18-inch gravity sewer. The project is in NE 130<sup>th</sup> Street near 104<sup>th</sup> Place NE and serves the developments on 105<sup>th</sup> Avenue NE and 104<sup>th</sup> Place NE.

**R-7: Replace Pipeline From Manhole No. 6185 to Manhole No. 143 (2008)**  
**Estimated Project Cost: \$1,018,000**

The project will replace 1,600 lineal feet of 10-inch gravity sewer with 18-inch gravity sewer. The project is in NE 131<sup>st</sup> Place between 119<sup>th</sup> Place NE and 117<sup>th</sup> Place NE.

**R-8: Replace Pipeline From Manhole No. 5181 to Manhole No. 5177 (2009)**  
**Estimated Project Cost: \$805,000**

The project will replace 935 lineal feet of 15-inch gravity sewer with 30-inch gravity sewer. The project is west of I-405 north of NE 132<sup>nd</sup> Street and east of 109<sup>th</sup> Avenue NE.

**R-9: Replace Grinder Pump with a Gravity Sewer at the District Office (2010)**  
**Estimated Project Cost: \$403,000**

The project will replace the grinder pump that currently serves the District Headquarter site with approximately 800 lineal feet of 8-inch-diameter DI gravity sewer. Construction will include approximately 200 linear feet of the sewer pipe installed on piles.

**R-10: Replace Pipeline from Manhole No. 143 to Manhole No. 5182 (2011)**  
**Estimated Project Cost: \$900,000**

The project will replace 1,400 lineal feet of 12-inch gravity sewer with 18-inch gravity sewer. The project crosses I-405 in NE 132<sup>nd</sup> Street.

**R-11: Replace Pipeline from Manhole No. 6202 to Manhole No. 6184 (2012)**  
**Estimated Project Cost: \$218,000**

The project will replace 360 lineal feet of 15-inch gravity sewer with 18-inch gravity sewer. The project is between 120<sup>th</sup> Avenue NE and 121<sup>st</sup> Way NE south of NE 132<sup>nd</sup> Street.

**R-12: Replace Pipeline From Manhole No. 5115 to Manhole No. 5027 (2012)**  
**Estimated Project Cost: \$326,000**

The project will replace 480 lineal feet of 18-inch gravity sewer with 21-inch gravity sewer. The project is in north of NE 134<sup>th</sup> Place and west of 108<sup>th</sup> Avenue NE.

**R-13: From Manhole No. 5119 to Manhole No. 5115 (2012)**  
**Estimated Project Cost: \$89,000**

The project will replace 120 lineal feet of 15-inch gravity sewer with 21-inch gravity sewer. The project is in the vicinity of project G-1-7.

**R-14: From Manhole No. 5156 to Manhole No. 5183 (2012)**  
**Estimated Project Cost: \$125,000**

The project will replace 290 lineal feet of 8-inch gravity sewer with 10-inch gravity sewer. The project is west of 114<sup>th</sup> Place NE and north of NE 132<sup>nd</sup> Street.

**R-15: From Manhole No. 6381 to Manhole No. 463 (2013)**  
**Estimated Project Cost: \$406,000**

The project will replace 624 lineal feet of 10-inch gravity sewer with 18-inch gravity sewer and is located in Juanita Drive NE near 79<sup>th</sup> Way NE.

**R-16: From Manhole No. 3 to Manhole No. 6 (2013)**  
**Estimated Project Cost: \$485,000**

The project will replace 760 lineal feet of 10-inch gravity sewer with 18-inch gravity sewer and is located in Juanita Drive NE near NE 112<sup>th</sup> Street.

**R-17: Replace Inglewood Hills Aging Pipe Near Juanita Drive NE and NE 145<sup>th</sup> Street (2014)**

**Estimated Project Cost: \$2,015,000**

The project will replace approximately 2,700 linear feet of 8-inch diameter, 625 linear feet of 10-inch diameter, and 1,540 of 12-inch diameter aging concrete gravity sewer with 12-inch PVC pipe.

**R-18: Point Repair in 120<sup>th</sup> Avenue NE at Totem Lake Boulevard (2007)**

**Estimated Project Cost: NA**

The developer-financed project will repair a sag in the 10-inch-diameter concrete gravity sewer in 120<sup>th</sup> Avenue NE at Totem Lake Boulevard. The estimated project cost is \$41,000.

**ULID 5 PROJECTS**

On October 2, 2007, the District signed an agreement with KCDNR to transfer a portion of the ULID 5 trunk line to County ownership and maintenance. The trunk line acquired by the County from the District was between MH 128 in the 13500 block of 108<sup>th</sup> Avenue NE and the County's measuring manhole adjacent to the Juanita Bay Pump Station. The total sewer facilities acquired by the County was approximately 500 LF of 18 inch, 1,300 LF of 21 inch, 1,600 LF of 24 inch, and 7,000 LF of 27 inch of sewer trunk and 51 manholes. Per the agreement, the County will reimburse the District approximately \$1,400,000 for the facilities acquired on or before March 31, 2010.

**TABLE 9-5**

**Gravity Line Replacement Capital Improvements**

<b>CIP No.</b>	<b>Year</b>	<b>Map Grid</b>	<b>Location</b>	<b>Length (Feet)</b>	<b>Diameter (Inches)</b>	<b>Recommended Diameter (Inches)</b>	<b>Cost<sup>(1)</sup></b>
R-1	2007	D-4	Inglewood Road NE	75	12	NA	\$ 16,000
R-2	2007	D-7 E-7	88 <sup>th</sup> Avenue NE and NE 163 <sup>rd</sup> Street	1,300	8	NA	\$ 85,000
R-3	2007	G-11	124 <sup>th</sup> Avenue NE and NE 144 <sup>th</sup> Street	NA	8	NA	\$ 15,000
R-4	2007	K-6	Juanita Drive NE South of NE 120th Street	NA	10	NA	\$ 41,000
R-5	2007	K-8	Juanita Drive NE near 93 <sup>rd</sup> Avenue NE	300	8	NA	\$ 113,000
R-6	2008	H-9 J-9	From MH No. 5916 to MH No. 5925	180	8	18	\$ 125,000
R-7	2008	J-11	From MH No. 6185 to MH No. 143	1,600	10	18	\$1,018,000

**TABLE 9-5 – (continued)**

**Gravity Line Replacement Capital Improvements**

<b>CIP No.</b>	<b>Year</b>	<b>Map Grid</b>	<b>Location</b>	<b>Length (Feet)</b>	<b>Diameter (Inches)</b>	<b>Recommended Diameter (Inches)</b>	<b>Cost<sup>(1)</sup></b>
R-8	2009	H-10	From MH No. 5181 to MH No. 5177	935	15	30	\$ 805,000
R-9	2010	B-5	District Office	800	NA	8	\$ 403,000
R-10	2011	H-10	From MH No. 143 to MH No. 5182	1,400	12	18	\$ 900,000
R-11	2012	J-11	From MH No. 6202 to MH No. 6184	360	15	18	\$ 218,000
R-12	2012	H-9	From MH No. 5115 to MH No. 5027	480	18	21	\$ 326,000
R-13	2012	H-9	From MH No. 5119 to MH No. 5115	120	15	21	\$ 89,000
R-14	2012	H-10	From MH No. 5156 to MH No. 5183	290	8	10	\$ 125,000
R-15	2013	L-6	From MH No. 6381 to MH No. 463	624	10	18	\$ 406,000
R-16	2013	L-6	From MH No. 3 to MH No. 6	760	10	18	\$ 485,000
R-17	2014	F-5 G-5	Inglewood Hills	2,700	8, 10, 12	NA	\$2,015,000
R-18	2007	K-11	Totem Lake	NA	10	NA	NA
R-19	2009	K-8	ULID 5	200	27	NA	\$ 196,000
R-20	2009	NA	ULID 5	NA	NA	NA	\$ 520,000

(1) Construction cost index (CCI) = 8,612 September 2006.  
NA = Not applicable to the specific project.

**TABLE 9-6**

**Manhole Rehabilitation Projects**

<b>CIP No.</b>	<b>Year</b>	<b>Basin No.</b>	<b>Number of Manholes</b>	<b>Total Cost<sup>(1)</sup></b>
R-21	2007	NUD 049, NUD 038, and KENMR 051	67	\$201,000
R-22	2008	NUD 025, NUD 019, and NUD 013	42	\$126,000

(1) Assumes \$3,000 per manhole.

## **CIP SUMMARY**

Table 9-7 provides a summary of the capital improvement plan project costs. All costs are shown in year 2006 dollars. The summary includes both wastewater and water system projects.



**TABLE 9-7**  
**Capital Improvement Plan Summary<sup>(1)</sup>**

CIP No.	Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Miscellaneous Improvements</b>											
M-1	Wastewater Bypass Pump	\$60,000									
M-2	Wastewater Service Van	\$65,000									
M-3	Construction of Building B Service Bay			\$250,000	\$250,000						
M-4	Decant Facility			\$250,000	\$250,000						
M-5	Easement Issues	\$50,000									
M-6	Inglemoor Security Improvements, Seismic Valve Operators, Emergency Supply & Operations Center, and Booster Pump Station Replacement				\$1,000,000	\$1,315,000					
M-7	Non Potable Water Filling Station						\$40,000				
M-8	WW Vactor Truck						\$350,000				
M-9	Wastewater Comp Plan						\$70,000				
M-10	RWA - Source Development	\$50,000	\$50,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
M-11	Kingsgate Reservoir Security Improvements & Seismic Valve	\$200,000									
M-12	Westhill and Norway Hill Reservoir Security Improvements & Seismic Valves		\$300,000								
M-13	LFP Reservoir Security Improvements & Seismic Valve			\$200,000							
M-14	Water System Plan						\$100,000				
M-15	Leak Detection	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
M-16	Meter Replacement Program (Non-Capital)										
M-17	Norway Hill Reservoir Interior Recoating									\$200,000	
M-18	Inglemoor Standpipe Exterior Recoating										\$200,000
<b>Subtotal - Wastewater - Miscellaneous Projects</b>		<b>\$150,000</b>	<b>-\$125,000</b>	<b>-\$375,000</b>	<b>\$448,000</b>		<b>\$460,000</b>				
<b>Subtotal - Water - Miscellaneous Projects</b>		<b>\$280,000</b>	<b>\$480,000</b>	<b>\$1,105,000</b>	<b>\$1,082,000</b>	<b>\$30,000</b>	<b>\$130,000</b>	<b>\$30,000</b>	<b>\$30,000</b>	<b>\$230,000</b>	<b>\$230,000</b>
<b>Sewer Extensions</b>											
E-06	118/72 Sewer	\$695,500									
E-07	68/HPD Sewer	\$239,100									
E-31	186/80 Sewer	\$66,200									
E-47	Tolt/91 Sewer	\$208,100									
E-01	134/108 Sewer		\$819,100								
E-51	147/Simonds Swr		\$85,800								
E-52	144/123 Sewer			\$225,000							
E-11	120/89 Sewer			\$881,400 <sup>(2)</sup>							
E-29	175/89 Sewer			\$89,700							
E-44	204/80 Sewer			\$515,100 <sup>(2)</sup>							
E-70	193/49 Sewer			\$217,100 <sup>(2)</sup>							
E-50	156/74 Sewer			\$218,300 <sup>(2)</sup>							
E-71	177/86 Sewer			\$178,200 <sup>(2)</sup>							
E-04	121/72 Sewer			\$97,750							
E-72	160/112 Sewer				\$318,000 <sup>(2)</sup>						
E-48	165/77 Sewer				\$84,600						

**TABLE 9-7 – (continued)**  
**Capital Improvement Plan Summary<sup>(1)</sup>**

CIP No.	Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
E-14	132/68 Sewer					\$113,300					
E-15	110/85 Sewer					\$437,700					
E-21	163/74 Sewer					\$715,700					
E-60	124/68 Sewer						\$483,100				
E-61	152/105 Sewer						\$732,800				
E-04	121/72 Sewer							\$97,750			
E-09	126/72 Sewer							\$1,159,100			
E-62	155/79 Sewer								\$304,100		
E-63	156/78 Sewer								\$894,200		
E-08	125/HPD Sewer									\$410,600	
E-16	138/62 Sewer									\$256,100	
E-26	163/90 Sewer									\$315,700	
E-32	200/73 Sewer									\$268,600	
E-10	120/91 Sewer										\$415,200
E-35	203/80 Sewer										\$384,800
E-37	112/77 Sewer										\$313,700
E-62	155/79 Sewer				\$304,100						
E-02	117/82 Sewer				\$476,400						
E-05	159/82 Sewer				\$165,400						
E-22	133/88 Sewer				\$389,000						
E-14	132/68 Sewer					\$113,300					
E-15	110/85 Sewer					\$437,700					
E-21	163/74 Sewer					\$715,700					
E-60	124/68 Sewer						\$483,100				
E-61	152/105 Sewer						\$732,800				
E-09	126/72 Sewer							\$1,159,100			
E-63	156/78 Sewer								\$894,200		
E-08	125/HPD Sewer									\$410,600	
E-16	138/62 Sewer									\$256,100	
E-26	163/90 Sewer									\$315,700	
E-32	200/73 Sewer									\$268,600	
E-30	178/86 Sewer										\$178,000
E-10	120/91 Sewer										\$415,200
E-35	203/80 Sewer										\$384,800
E-37	112/77 Sewer										\$313,700
E-41	189/68 Sewer										\$126,300
<b>Subtotal - Wastewater - Sewer Extensions</b>		<b>\$1,208,900</b>	<b>\$904,900</b>	<b>\$2,422,550</b>	<b>\$1,737,500</b>	<b>\$1,266,700</b>	<b>\$1,215,900</b>	<b>\$1,159,100</b>	<b>\$894,200</b>	<b>\$1,251,000</b>	<b>\$1,418,000</b>
<b>Wastewater Lift Stations</b>											
L-1	LS No. 14	\$1,500,000									
L-2	LS No. 19	\$0	\$179,000								
L-3	LS No. 10		\$500,000								
L-4	LS No. 1, 2, 4, 17 & 18			\$450,000							
L-5	LS No. 1			\$10,000							
L-6	LS No. 3					\$400,000					

**TABLE 9-7 – (continued)**  
**Capital Improvement Plan Summary<sup>(1)</sup>**

CIP No.	Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
L-7	LS No. 15						\$425,000				
<b>Subtotal - Wastewater - Lift Stations</b>		<b>\$1,500,000</b>	<b>\$679,000</b>	<b>\$460,000</b>	<b>\$0</b>	<b>\$400,000</b>	<b>\$425,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Wastewater Infiltration and Inflow Program</b>											
I-1	NUD040	\$10,000									
I-2	NUD75	\$18,700									
I-3	NUD052	\$30,000									
I-4	NUD013	\$25,500									
I-5	NUD031		\$24,000								
I-6	NUD010		\$21,000								
I-7	NUD046		\$22,200								
I-8	NUD012		\$21,300								
I-9	NUD028		\$33,000								
I-10	NUD026			\$23,000							
I-11	NUD004			\$22,700							
I-12	KENMR054			\$12,800							
I-13	NUD042			\$25,500							
I-14	KENMR041			\$13,100							
I-15	NUD053			\$18,700							
I-16	NUD036			\$26,800							
I-17	NUD043				\$27,300						
I-18	NUD5				\$18,700						
I-19	NUD014				\$25,700						
I-20	NUD021				\$23,500						
I-21	NUD025				\$29,300						
I-22	NUD024					\$21,900					
I-23	NUD007					\$23,800					
I-24	NUD041					\$27,000					
I-25	NUD030					\$21,200					
I-26	NUD049					\$20,300					
I-27	NUD003						\$24,000				
I-28	NUD038						\$30,200				
I-29	NUD034						\$19,400				
I-30	NUD001						\$26,200				
I-31	NUD032						\$24,100				
I-32	NUD009							\$23,200			
I-33	NUD048							\$18,500			
I-34	NUD044							\$17,700			
I-35	NUD019							\$24,500			
I-36	NUD015							\$27,300			
I-37	NUD045								\$15,600		
I-38	NUD050								\$17,500		
I-39	LFP001								\$19,400		
I-40	NUD029								\$33,400		
I-41	NUD005								\$26,200		
I-42	NUD017								\$21,100		

**TABLE 9-7 – (continued)**  
**Capital Improvement Plan Summary<sup>(1)</sup>**

CIP No.	Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
I-43	NUD020									\$25,000	
I-44	INGWD51A									\$26,800	
I-45	NUD008									\$26,600	
I-46	NUD002									\$25,200	
I-47	NUD011									\$24,400	
Rehab	<b>Rehabilitation and Replacement Contingency</b>			\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
<b>Subtotal - Wastewater - Infiltration &amp; Inflow Program</b>		<b>\$84,200</b>	<b>\$121,500</b>	<b>\$392,600</b>	<b>\$374,500</b>	<b>\$364,200</b>	<b>\$373,900</b>	<b>\$361,200</b>	<b>\$383,200</b>	<b>\$378,000</b>	<b>\$250,000</b>
<b>Wastewater Gravity Line Replacement</b>											
R-1	Inglewood Road NE			\$16,000							
R-2	88/163 Sewer			\$85,000							
R-3	124/144 Sewer			\$15,000							
R-4	Juanita/120 Sewer	\$41,000									
R-5	Juanita/93 Sewer	\$113,000									
R-6	From MH No. 5916 to MH No. 5925		\$125,000								
R-7	From MH No. 6185 to MH No. 143		\$1,018,000								
R-8	From MH No. 5181 to MH No. 5177			\$805,000							
R-9	District Office				\$403,000						
R-10	From MH No. 143 to MH No. 5182					\$900,000					
R-11	From MH No. 6202 to MH No. 6184						\$218,000				
R-12	From MH No. 5115 to MH No. 5027						\$326,000				
R-13	From MH No. 5119 to MH No. 5115						\$89,000				
R-14	From MH No. 5156 to MH No. 5183						\$125,000				
R-15	From MH No. 6381 to MH No. 463							\$406,000			
R-16	From MH No. 3 to MH No. 6								\$485,000		
R-17	Inglewood Hills									\$2,015,000	
R-18	Totem Lake										
R-19	NUD 049, NUD 038, and KENMR 051	\$201,000									
R-20	NUD 025, NUD 019, and NUD 013		\$126,000								
<b>Subtotal - Wastewater - Gravity Line Replacement</b>		<b>\$355,000</b>	<b>\$1,269,000</b>	<b>\$921,000</b>	<b>\$403,000</b>	<b>\$900,000</b>	<b>\$758,000</b>	<b>\$406,000</b>	<b>\$485,000</b>	<b>\$2,015,000</b>	<b>\$0</b>
<b>Water PRV Rehabilitation Program</b>											
P-1	PRV No. 6 Replacement		\$150,000								
P-2	PRV No. 39 Replacement		\$150,000								
P-3	PRV No. 38 and 42 Replacement		\$200,000								
P-4	PRV No. 41 Replacement			\$150,000							
P-5	PRV No. 32 Replacement			\$150,000							
P-6	PRV No. 21 Replacement			\$150,000							
P-7	PRV No. 41B Replacement				\$150,000						
P-8	PRV No. 1 Replacement				\$150,000						
P-9	PRV No. 8 Replacement				\$150,000						
P-10	Miscellaneous PRV Upgrades					\$150,000					
<b>Subtotal - Water - PRV Rehabilitation Program</b>			<b>\$500,000</b>	<b>\$450,000</b>	<b>\$450,000</b>	<b>\$150,000</b>					

**TABLE 9-7 – (continued)**  
**Capital Improvement Plan Summary<sup>(1)</sup>**

CIP No.	Project Description	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
<b>Water Seismic Upgrade Program</b>											
S-1	Inglemoor Transmission Main Improvements						\$1,670,000				
S-2	Inglemoor Transmission Main Repair Materials	\$7,000									
S-3	Lake Forest Park Reservoir Site Operational Upgrades					\$500,000					
S-4	Distribution System Seismic Analysis				\$125,000						
S-5	Norway Hill Booster Station									\$363,000	
S-6	Sammammish River Crossing Replacement Water Mains										\$864,000
<b>Subtotal - Water - Seismic Upgrade Program</b>		<b>\$7,000</b>			<b>\$125,000</b>	<b>\$500,000</b>	<b>\$1,670,000</b>			<b>\$363,000</b>	<b>\$864,000</b>
<b>Water Extension Projects</b>											
E-64	68/HPD Water Main Extension and New PRV		\$300,000								
E-65	Totem Lake Plaza Water Main Improvements										
E-66	Connect 530 North and 530 South Zones				\$72,000						
E-67	Emergency Intertie with AWWD							\$125,000			
E-68	I-405 Transmission Main										
E-69	Extension Project Contingency	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000
<b>Subtotal - Water - Extension Projects</b>		<b>\$125,000</b>	<b>\$425,000</b>	<b>\$125,000</b>	<b>\$197,000</b>	<b>\$125,000</b>	<b>\$125,000</b>	<b>\$250,000</b>	<b>\$125,000</b>	<b>\$125,000</b>	<b>\$125,000</b>
<b>Water Repair and Replacement Projects</b>											
R-21	City of Kenmore - SR 522 Widening Phase I (BWR)	\$292,000									
R-22	City of Kenmore - SR 522 Widening Ph II (HCWL)	\$910,000									
R-23	145/100 Water Main Replacement Project		\$685,000								
R-24	116/98 Water Main Replacement Project			\$729,000							
R-25	182/64 Water Main Replacement Project				\$553,000						
R-26	150/106 Water Main Replacement Project				\$394,000						
R-27	185/64 Water Main Replacement Project					\$495,000					
R-28	159/71 Water Main Replacement Project					\$346,000					
R-29	140/84 Water Main Replacement Project						\$459,000				
R-30	Juanita/Arrowhead Water Main Replacement Project						\$378,000				
R-31	138/84 Water Main Replacement Project						\$359,000				
R-32	134/72 Water Main Replacement Project							\$561,000			
R-33	132/109 Water Main Replacement Project								\$521,000		
R-34	132/108 Water Main Replacement Project								\$465,000		
R-35	200/55 Water Main Replacement Project									\$363,000	
R-36	164/112 Water Main Replacement Project									\$453,000	
R-37	170/Juanita Water Main Replacement Project										\$481,000

**TABLE 9-7 – (continued)**

**Capital Improvement Plan Summary<sup>(1)</sup>**

<b>CIP No.</b>	<b>Project Description</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
R-38	143/82 Water Main Replacement Project										\$408,000
R-39	Repair & Replacement	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000	\$125,000
<b>Subtotal - Water - Repair and Replacement Projects</b>		<b>\$1,327,000</b>	<b>\$810,000</b>	<b>\$854,000</b>	<b>\$1,072,000</b>	<b>\$966,000</b>	<b>\$1,321,000</b>	<b>\$686,000</b>	<b>\$1,111,000</b>	<b>\$941,000</b>	<b>\$1,014,000</b>
<b>Total - Wastewater</b>		<b>\$3,298,000</b>	<b>\$2,849,000</b>	<b>\$3,821,000</b>	<b>\$2,963,000</b>	<b>\$2,931,000</b>	<b>\$3,233,000</b>	<b>\$1,926,000</b>	<b>\$1,762,000</b>	<b>\$3,644,000</b>	<b>\$1,668,000</b>
<b>Total - Water</b>		<b>\$1,739,000</b>	<b>\$1,865,000</b>	<b>\$2,084,000</b>	<b>\$2,476,000</b>	<b>\$1,621,000</b>	<b>\$3,246,000</b>	<b>\$966,000</b>	<b>\$1,266,000</b>	<b>\$1,659,000</b>	<b>\$2,233,000</b>
<b>Total - Water and Wastewater</b>		<b>\$5,037,000</b>	<b>\$4,714,000</b>	<b>\$5,905,000</b>	<b>\$5,439,000</b>	<b>\$4,552,000</b>	<b>\$6,479,000</b>	<b>\$2,892,000</b>	<b>\$3,028,000</b>	<b>\$5,303,000</b>	<b>\$3,901,000</b>

(1) Construction Cost Index = 8,612 September 2006.