

**HIGHLINE WATER DISTRICT
King County, Washington**

RESOLUTION 15-12-16B

RESOLUTION ADOPTING THE 2016 CAPITAL IMPROVEMENT PROGRAM

WHEREAS, the Capital Improvement Program (CIP) is a resource document to help plan directions the District will consider for the future; and

WHEREAS, Staff and the Board of Commissioners hold annual workshop meetings to establish an Operating Budget, a Capital Improvement Program and set Goals for the upcoming year; and

WHEREAS, the Capital Improvement Program is not a permanent fixed plan, but is a guideline or tool to help reflect future goals and future resources at the time budgets are being planned; and

WHEREAS, the commitment of funds and resources can only be made through the budget process.

NOW, THEREFORE, BE IT RESOLVED:


The Board of Commissioners hereby adopts the 2016 Capital Improvement Program, attached as Exhibit A and incorporated herein by this reference.

ADOPTED BY THE BOARD OF COMMISSIONERS of Highline Water District, King County, Washington, at an open public meeting held this **16th** day of **December 2015**.

BOARD OF COMMISSIONERS



George Landon, President



Vince Koester, Secretary



Todd Fultz, Commissioner



Daniel Johnson, Commissioner



Kathleen Quong-Vermeire, Commissioner



EXHIBIT A

2016



CAPITAL IMPROVEMENT PROGRAM



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EXECUTIVE SUMMARY

The District's Goal is to provide high quality and reliable water service to all customers in accordance with the regulations governing water purveyors. The District's Capital Improvement Program (CIP) is an on-going effort with the primary mission of improving the District's aging infrastructure with modern, more efficient, reliable technology and materials.

In the fall of each year, District staff prepares a draft CIP plan for review by management and the Board of Commissioners. The plan includes budgets and narratives for the proposed Capital Additions for the upcoming year. Each narrative includes the description of each project; the purpose and estimated project costs; a breakdown of funding sources; and an estimate of the project schedule.

The draft CIP is presented to the Commissioners at a regularly scheduled Board meeting. Staff makes changes based on the Board's input and prepares a final draft. Typically, the final draft of the CIP and the District's annual Operations and Maintenance Budget are brought before the Board simultaneously. Any final comments are noted and updated prior to Board acceptance at a regularly scheduled meeting in December of each year.

In 2015, the District completed *Project 13-1B Military Road at Angle Lake Water Main Replacement*. The work included the replacement of approximately 3,400 lf of AC main along Military Road S between 46th Ave S and S 198th St. The District identified three other projects for construction in 2015 (Projects 13-3, 14-3 and 14-4) but rescheduled to 2016 due to delays beyond the control of the District.

The District will aggressively reinvest into the water system through capital improvements in 2016. The CIP includes the construction of four water main projects totaling 19,200 LF, or 3.7 miles, of AC main replacement. Other projects include the completion of the 2015 Comprehensive Water System Plan Update and the Tyee Well Rehabilitation. The CIP projects continuing into 2016 are as follows:

- *Project 13-1A Angle Lake Water Main Replacement (private properties along lake);*
- *Project 13-3 City of SeaTac 24th/28th Ave S Extension (S 200th St - S 208th St);*
- *Project 14-1 2015 Comprehensive Water System Plan Update;*
- *Project 14-3 Manhattan View Water Main Replacement;*
- *Project 14-4 40th Ave S Water Main Replacement;*
- *Project 15-1 Tyee Well Rehabilitation (Pump Purchase and Installation)*

The District will start preliminary engineering and design on three new projects in 2016:

- *Project 14-2 560 Zone Lakehaven South Supply Study and Design;*
- *Project 16-2 Pump Station No 8;*
- *Project 16-3 Mansion Hill Reservoir Relocation*

Please see project narratives, budgets, and locations in the body of this report.

Total Capital Additions in 2015, which includes CIP Expenditures, Small Works/Emergency Projects, Mitigation Improvements, Meters, Hydrants and Services, and Capital Asset Purchases, is estimated at \$2.69 million. For 2016, the proposed capital expenditure is \$7.4 million. All CIP projects scheduled for 2016 will be funded by a combination of water rates, connection charges from development, and low interest Public Works Trust Fund loans. See **Page 3** for overall capital additions and funding sources.

**2016 CIP - OUTSTANDING FUNDING & DEBT SERVICE (2015-2019)
CAPITAL PROJECTS**

CAPITAL PROJECTS		Prior	2015	2016	2017	2018	2019	Totals
CIP #	Project Title	Years						
13-1A	Angle Lake Water Main Replacement Project	\$ 1,025,036	\$ 1,173,259	\$ 1,455,000				\$3,653,294
13-1B	Angle Lake at Military Road Water Main Replacement	\$ 959,355	\$ 220,561					\$1,179,916
13-3	Seatac 24th/28th Ave S Water Main Extension	\$ 30,433	\$ 11,734	\$ 281,500				\$323,667
14-1	2015 Comprehensive Water System Plan Update	\$ 53,897	\$ 145,000	\$ 35,000				\$233,897
14-2	560 Zone LUD South Supply			\$ 125,000	\$ 475,000			\$600,000
14-3	Manhattan View Water Main Replacement	\$ 59,216	\$ 70,569	\$ 3,037,150				\$3,166,935
14-4	40th Ave S Water Main Replacement	\$ 7,146	\$ 19,000	\$ 255,000				\$281,146
15-1	Tyee Well Rehabilitation Project	\$ 5,129	\$ 140,000	\$ 140,000				\$285,129
16-1	Emergency Power-Angle Lake Well and Des Moines Treatment Plant				\$ 100,000	\$ 485,000		\$585,000
16-2	Pump Station No 8 (Crestview)			\$ 250,000	\$ 1,544,000			\$1,794,000
16-3	Mansion Hill Reservoir Relocation (Funding Allocation)*			\$ 250,000	\$ 3,000,000	\$ 3,500,000		\$6,750,000
16-4	Sound Transit/SR509 Transmission Main Relocation (Funding Allocation)*				\$ 50,000	\$ 1,036,000		\$1,086,000
17-1	2017 Pipeline Improvement Projects (Funding Allocation)				\$ 2,500,000	\$ 2,000,000		\$4,500,000
18-3	Asset Management Plan Update					\$ 50,000		\$50,000
19-1	2019 AC Water Main Replacement Project (Funding Allocation)						\$ 4,500,000	\$4,500,000
	Subtotal of Capital Projects	\$ 2,140,211	\$ 1,780,123	\$ 5,828,650	\$ 7,669,000	\$ 7,071,000	\$ 4,500,000	\$28,988,984

*Developer Reimbursed

Small Works/Emergency Projects	\$ -	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000	\$ 1,400,000
Mitigation Improvements	\$ 35,000	\$ 40,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 165,000
Meters/Hydrants/Services (Refer to O&M Budget)	\$ 650,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 1,000,000	\$ 4,650,000
Capital Asset Purchases (Refer to O&M Budget)	\$ 226,566	\$ 188,231	\$ 225,000	\$ 225,000	\$ 225,000	\$ 230,000	\$ 1,094,797
Total Capital Additions	\$ 2,140,211	\$ 2,691,689	\$ 7,406,881	\$ 9,274,000	\$ 8,676,000	\$ 6,110,000	\$36,298,781

	2015	2016	2017	2018	2019	Totals
Less: Outside Funding Sources						
PWTF Proceeds	\$ 539,567	\$ 76,615	\$ -			\$ 616,182
Developer Reimbursement		\$ 250,000	\$ 3,000,000	\$ 4,536,000		\$ 7,786,000
GFC	\$ 335,000	\$ 350,000	\$ 300,000	\$ 300,000	\$ 300,000	\$ 1,585,000
Total Outside Funding	\$ 874,567	\$ 676,615	\$ 3,300,000	\$ 4,836,000	\$ 300,000	\$ 9,987,182

	2015	2016	2017	2018	2019	Totals
Debt Service						
PWTF Loans	\$ 1,298,324	\$ 1,233,865	\$ 1,093,381	\$ 1,017,758	\$ 717,136	\$ 5,360,464
Total Debt Service	\$ 1,298,324	\$ 1,233,865	\$ 1,093,381	\$ 1,017,758	\$ 717,136	\$5,360,464

	2015	2016	2017	2018	2019	Totals
Capital Additions + Debt Service (Total)	\$ 3,990,013	\$ 8,640,746	\$10,367,381	\$ 9,693,758	\$ 6,827,136	\$41,659,245

CAPITAL IMPROVEMENT PROGRAM GOALS AND OBJECTIVES

The District's Mission Statement is:

"Our mission is to provide high quality water and excellent customer service while effectively managing District infrastructure for a reliable water system today and for future generations."

The District's Goal is to provide high quality and reliable water service to all customers in accordance with the regulations governing water purveyors. The District's Capital Improvement Program (CIP) is an on-going effort with the primary mission of improving the District's aging infrastructure with modern, more efficient, reliable technology and materials.

In the fall of each year, District staff prepares a draft CIP plan for review by management and the Board of Commissioners. The plan includes budgets for the proposed Capital Additions for the upcoming year. The Capital Additions budget includes the following five components:

- **Capital Projects** – improvement projects identified in the approved Comprehensive Plan or other planning documents and capitalized over the life of the asset
- **Small Works/Emergency Projects** – funds allocated for improvement projects not identified or postulated during development of the annual CIP (e.g. a smaller main replacement project in advance of a city overlay project)
- **Mitigation Improvements** – funds allocated for improvements to District facilities to ward against man-made and natural disasters in support of the Hazard Mitigation Plan and the Security Vulnerability Assessment
- **Meters/Hydrants/Services** – funds allocated for the purchase and installation of new pipe/meters/hydrants/services installed by District personnel and capitalized over the life of the asset
- **Capital Asset Purchases** – Specific asset purchases greater than \$5,000 per item used to replace aging assets or to increase production and efficiency (e.g. vehicles or equipment)

The plan includes narratives for the Capital Projects, the Small Works/Emergency Project and the Mitigation Improvement budgets. The narratives include a description for each project; the purpose and estimated project costs; a breakdown of funding sources; and an estimate of the project schedule. The annual *Goals and Objectives* and the *Operation and Maintenance Budget*, provides narratives and descriptions for the Meters/Hydrants/Services and Capital Asset Purchases.

District staff presents the draft CIP to the Commissioners at a regularly scheduled Board meeting. Staff makes changes based on the Board's input and prepares a final draft. Typically, the Board considers the final draft of the CIP and the District's annual Operations and Maintenance Budget simultaneously. Any final comments are noted and updated prior to Board acceptance at a regularly scheduled meeting in December of each year.

Prioritization of Projects

Several issues confront a water system when evaluating and comparing which projects take precedent over others. When completing the District's Comprehensive Water System Plan, as required by the Dept. of Health (DOH) every six (6) years, the District's Board, management, staff and consultants review the needs of the water system. Specifically, per WAC 246-290, DOH requires the District to review the adequacy of its sources of supply, treatment facilities, storage, and distribution system. In addition, the District evaluates funding sources to ensure financial viability.

DOH places a priority on deficiencies in source, treatment and storage. Generally, distribution mains are only required to be upgraded by DOH if they cannot provide adequate fire flow. The District generally follows this priority strategy; however, the District puts additional work into evaluating the distribution system. In addition to fire flow limitations, the District also considers historical issues of the water mains (main repairs, leaks, dead ends, water quality complaints, location, safety, potential property damage, looping, land use issues, etc.) when prioritizing replacement projects.

As of late, the District reprioritized the CIP for City driven road and redevelopment projects. The District must relocate water mains to accommodate City owned infrastructure. In addition, many cities issue moratoriums on pavement cuts for up to five years after completion of a City project. It makes good "business sense" to replace mains with road construction projects as it reduces overall impact to the public. Some projects included with the City work may not be the District's highest replacement priority. However, partnering helps to lower overall project costs and achieve the District's goal of replacing aging infrastructure. The result is continued reinvestment into the system at a lower cost and impact to the ratepayers.

Capital Addition Funding

The funding of projects is an important component of the process. Because of limited resources, the District cannot fund all projects contemplated in the Comprehensive Water System Plan. Capital Additions are typically funded from rates or from other outside sources (General Facility Connection Charges [GFC], revenue bonds, low-interest loans, or developer contributions/reimbursements.)

With the downturn in the economy, GFC revenue decreased in recent years due to fewer development projects connecting to the system. In 2015, the projected revenue from GFC was \$250,000; however, the actual revenue is approximately \$335,000. Several projects suspended due to the economy in the late 2000's began construction in 2015.

The projected 2016 budget for GFC revenue is \$350,000. There are over 100 new single family lots planned in 2016 among 3 new hotels and several multifamily apartment/townhome developments. In addition, the Federal Aviation Administration will begin construction of their new headquarters in the Des Moines Business Park in 2016.

The District found the Public Works Trust Fund (PWTF) low interest loans to be an excellent way to reinvest in its infrastructure while reducing the financial burden to the ratepayers. Repayment

periods may range up to 30 years at interest rates as low as 0.25%, depending on the loan term, local funding match, and project completion incentives by the State. Typically, the District desires to select repayment schedules and/or provide local match funding to minimize interest over the life of the loan. As of late, the State Legislature eliminated future funding for the PWTF. It is not known whether the State will reinstate funding for the PWTF.

Grant money opportunities for infrastructure projects are extremely competitive. The District seeks out grant funding, if available, and is made aware of funding opportunities via its association memberships.

Each year, staff works with the Board of Commissioners to determine availability of outside funding (PWTF loans, Federal grants, etc.) for CIP projects that do not have other funding sources. Staff evaluates the water system's needs and prioritizes projects for outside funding. Also, if an emerging project is brought to the attention of District staff, it could also be considered for outside funding. Applications for outside funding sources are subject to approval by the Board of Commissioners.

CIP Project Implementation

As projects secure funding and accepted by the Board, the following general steps are taken to design and construct a scheduled CIP project. Please note that these steps do not necessarily apply to emergency repair work:

1. Staff may issue a Request For Proposals for more technically-challenging projects or may request information from consultants identified on the MRSC Consultant Roster.
2. Staff evaluates and/or interviews the consultants and recommends to the Board the most competent consultant to complete the project design.
3. Staff takes the consultant's proposal to the Board for approval.
4. Upon approval, the consultant begins working with staff to complete the design. At each regular meeting, the Board receives a status report for each project in the Manager's Report.
5. Upon completion of the design, staff informs the Board of the project's advertisement and bid opening dates for soliciting a construction contract.
6. District staff and the consultant review the bids and make a recommendation to the Board to award to the lowest, responsible bidder, per State Law.
7. The contract is then brought before the Board to approve at the next available Board meeting.
8. Construction of the project begins and the Board receives updates on the status of each project in the Manager's Report.
9. The Board must approve or deny any contract revisions over \$15,000 per project/contract that may occur.
10. Upon completion of the project, staff and the consultant make a recommendation to the Board to accept the project as complete. This recommendation is then approved or denied at the next available Board meeting.
11. If the project was an approved PWTF project or Federal grant, staff will complete the close-out of the project as required by the PWTF Board or Federal agency.

2016 Capital Addition Budget

For 2016, the District budgeted \$7.4 million in Capital Addition expenditures. The figure includes budget to complete the active and new capital improvement projects and to support the other four Capital Addition components. The 2016 budget includes carryover from the 2015 construction projects delayed beyond the control of the District. The District will fund the 2016 CIP through water rates, capital reserves, connection charges, developer reimbursement or low interest PWTF funding. Please see **Page 3** for a breakdown of the overall capital additions and funding sources.

2015 COMPLETED CAPITAL IMPROVEMENT PROJECTS

In 2015, the District completed the following CIP project:

13-1B Military Road S at Angle Lake Water Main Replacement

The District owns and maintains several small 4" and 6" diameter AC water mains along the northwest, south and east side of Angle Lake in the City of SeaTac. The mains are located within existing easements on private property along the lake and within Military Road between 46th Ave S and S 198th St. Projects 13-1A and 13-1B includes replacing approximately 8,900 LF of smaller diameter AC main with new, modern materials around the Angle Lake neighborhood that is nearing the end of its useful life.

In early 2012, the District awarded a consultant contract with BHC Consultants, Inc. The first phase of the project included preliminary engineering to determine feasible replacement alternatives. In addition, services included performing preliminary survey, environmental and geotechnical reconnaissance, and community involvement. BHC completed the first phase in February 2013.

The second phase of the project included design and contract document preparation for construction. The phase also included obtaining permits, easement acquisition, and community involvement. During the consultant contract scoping for Phase Two, the District elected to divide the project into two separate, smaller projects for efficiencies and schedule. *Project 13-1B Military Road S at Angle Lake* (this project) included the portion of the original project within city right-of-way along Military Road. The remaining work within the easements around the lake was renumbered as Project 13-1A.



Roth Hill/Stantec designed Project 13-1B. The project included the installation of 3,400 LF of water main. The Board awarded the project to Buno Construction in August 2014 for \$902,739.90. Construction began the subsequent September. Buno completed the project in February 2015. The District initiated one change order to add additional pipework to the project. The final construction cost was \$982,821.73. Projects 13-1A and 13-1B are funded with a combination of rates and the PWTF loan.

ONGOING PROJECTS IN 2015 AND 2016

The District originally scheduled the construction for three water main replacement projects in 2015. These projects will now be constructed in 2016. The City of SeaTac, the lead agency in two of the projects, delayed construction to address design considerations for their portion of work. In addition, the District delayed one project to better coordinate with the City of Normandy Park's capital road project. The following projects started either design and/or construction in prior years and will continue into the budget year 2016:

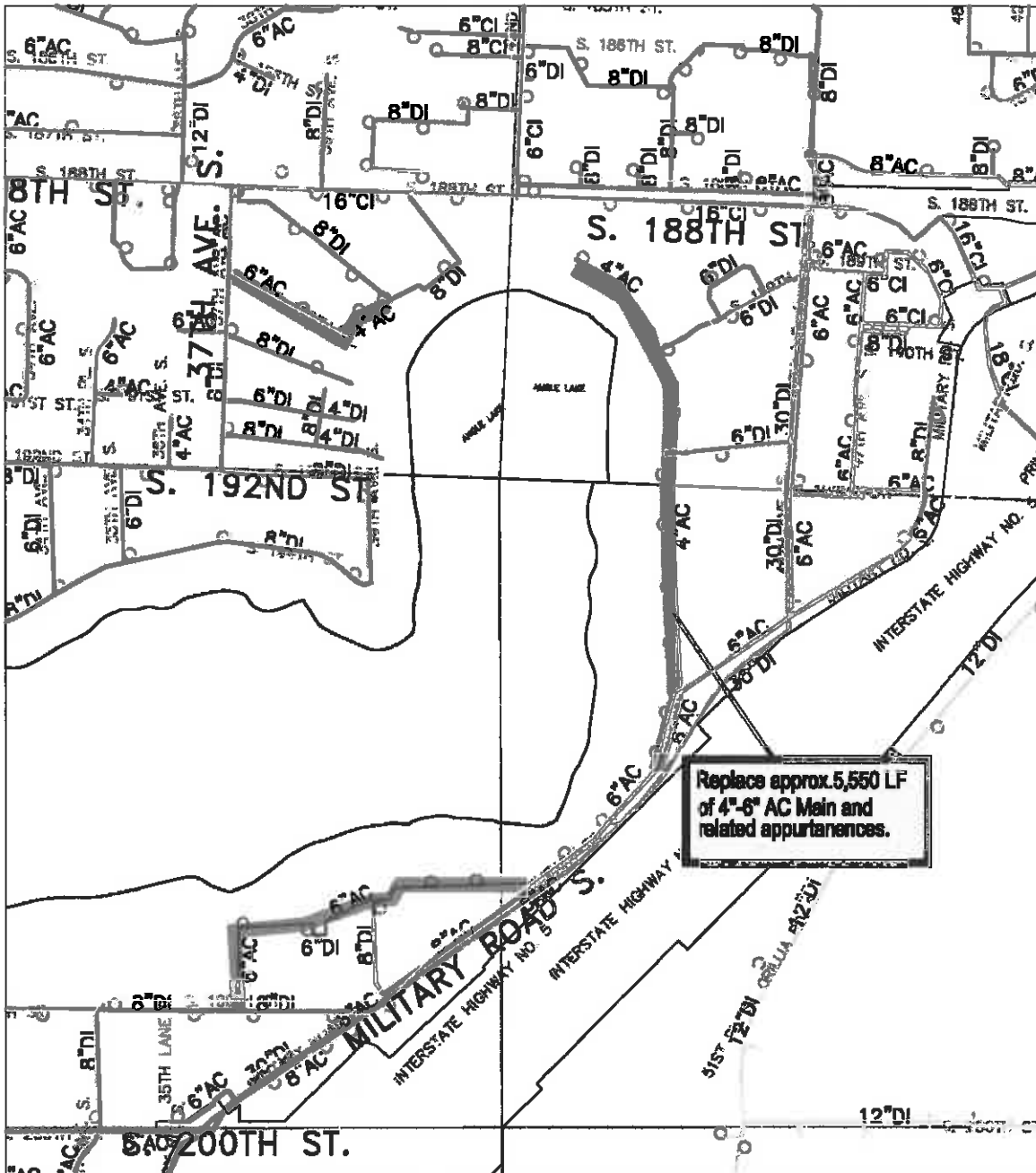
13-1A Angle Lake Water Main Replacement Project

The District owns and maintains several small 4" and 6" diameter water main along the northwest, south and east side of Angle Lake in the City of SeaTac. The mains are located within existing easements on private property along the lake and within Military Road between 46th Ave S and S 198th St. Projects 13-1A and 13-1B will include replacement of approximately 8,900 LF of smaller diameter main with new, modern materials around the Angle Lake neighborhood that is nearing the end of its useful life.

Buno Construction completed Project 13-1B, the Military Road portion, in early 2015 (see Narrative Page 8). Project 13-1A (this project) includes the work on private property around the lake. BHC completed the design and easement acquisition in June, 2015. The project includes the replacement of approximately 5,560 LF of AC with new water main, hydrants and appurtenances. In total, the District secured over 104 easements from the property owners around the lake.

The District awarded a construction contract to Kar-Vel Construction on July 21, 2015. Kar-Vel's Bid was \$2,194,456.65. Construction began in October 2015 and anticipated to be complete by spring 2016.

The District applied for low-interest Public Works Trust Fund loan to fund projects. The District received a loan for \$2.21 million to cover expenses in Project 13-1A and 13-1B. The total project cost for Project 13-1A is budgeted for \$3,653,294. Overall, between the two projects, the District anticipates an investment in the Angle Lake area of over \$4.8 million.



13-1A - Angle Lake Watermain Replacement Project



**13-1A ANGLE LAKE WATER MAIN REPLACEMENT PROJECT
ESTIMATED PROJECT COSTS**

CATEGORY	Prior Years	2015	2016	TOTAL
Advertising	\$ 1,410	\$ 883		\$ 2,293
Capitalized Interest	\$ 7,644	\$ 9,500		\$ 17,144
Engineering - Design	\$ 972,426	\$ 131,876		\$ 1,104,301
Construction	\$ -	\$ 850,000	\$ 1,350,000	\$ 2,200,000
Construction Administration	\$ -	\$ 100,000	\$ 45,000	\$ 145,000
Staff Labor and Benefits	\$ 10,581	\$ 55,000	\$ 40,000	\$ 105,581
Permitting	\$ -	\$ 1,500		\$ 1,500
Miscellaneous / Other	\$ 7,800	\$ 7,500	\$ 10,000	\$ 25,300
Legal	\$ 25,176	\$ 17,000	\$ 10,000	\$ 52,176
TOTAL	\$ 1,025,036	\$ 1,173,259	\$ 1,455,000	\$ 3,653,294

CATEGORY	Prior Years	2014	2015	TOTAL
Rates/Reserves (15% Match)	\$ 1,025,036	\$ 697,680	\$ 838,818	\$ 2,561,533
PWTF	\$ -	\$ 475,579	\$ 616,182	\$ 1,091,761
TOTAL	\$ 1,025,036	\$ 1,173,259	\$ 1,455,000	\$ 3,653,294

ESTIMATED SCHEDULE FOR PROJECT COMPLETION	
Description	Date
Preliminary Engineering (Complete)	March 2013
Design Engineering (Complete)	June 2015
Award Construction Contract	July 2015
Begin Water Construction	October 2015
Project Final Completion	March 2016

13-3 City of SeaTac 28th/24th Ave S Extension (S 200th St to S 208th St)

The City of SeaTac identified the need to connect 28th/24th Ave S between S 200th St and S 208th St to support the SeaTac Regional Growth Center (STRGC). The project will be the last segment to complete a five lane principal arterial corridor with bicycle lanes and sidewalks from S 188th St to S 216th St. The project provides a vital connection within and between the STRGC, the City of Des Moines, the Port of Seattle, Sound Transit's 200th St Link Light Rail Station and the future SR 509. In addition, the project will create a parallel alternative to SR 99 for aviation support freight vehicles.

The District has several existing water mains at S 200th St and S 208th St but no water mains within the project segment. The estimated project length is 1,000 LF of 8" diameter DI water main. The new alignment will have minimal water connections and primarily designed for fire suppression. A significant portion of the area is within the SR509 interchange.

The District retained the services of Kennedy Jenks Consultants in 2014 for the design of the water project. The City anticipated construction in 2015; however, the City delayed the project to incorporate a new overpass in the design for the future SR509 highway. Construction is scheduled for 2016. SeaTac will advertise for bids in December 2015. The total project budget is \$328,667. The project will be funded by water rates and capital reserves.



Add approx. 1,000 LF of 8" water main and related appurtenances.



**13-3 - 28th/24th Ave. S. Ext.
between S 204th St & S 206th St**



**13-3 24TH AVE S/28TH AVE S WATER MAIN EXTENSION
ESTIMATED PROJECT COSTS**

CATEGORY	Prior Years	2015	2016	TOTAL
Capitalized Interest	\$ 142	\$ 500	\$ 1,500	\$ 2,142
Engineering - Design	\$ 30,053	\$ 9,234		\$ 39,287
Construction	\$ -	\$ -	\$ 235,000	\$ 235,000
Construction Administration	\$ -	\$ -	\$ 28,500	\$ 28,500
Staff Labor and Benefits	\$ 238	\$ 1,000	\$ 13,500	\$ 14,738
Permitting	\$ -	\$ -	\$ -	\$ -
Miscellaneous / Other	\$ -	\$ 1,000	\$ 1,500	\$ 2,500
Legal	\$ -	\$ -	\$ 1,500	\$ 1,500
TOTAL	\$ 30,433	\$ 11,734	\$ 281,500	\$ 323,667

FUNDING FOR PROJECT				
CATEGORY	Prior Years	2015	2016	TOTAL
Rates/Reserves	\$ 30,433	\$ 11,734	\$ 281,500	\$ 323,667
				\$ -
TOTAL	\$ 30,433	\$ 11,734	\$ 281,500	\$ 323,667

ESTIMATED SCHEDULE FOR PROJECT COMPLETION	
Description	Date
Design Engineering (Complete)	March 2015
Award Construction Contract (Seatac)	January 2016
Begin Construction	July 2016
Project Final Completion	December 2016

Project 14-1 2015 Comprehensive Water System Plan Update

WAC 246-290-100 requires water purveyors to update their comprehensive water plan every six years. Highline Water District's current water system plan was formally approved by Department of Health (DOH) on July 20, 2009. The District will complete the plan update in early 2016.

District staff contacted DOH to discuss a water industry proposal to change plan updates from a six year to a 10 year schedule. DOH stated there is momentum to change the requirement but it will take approximately two years by DOH to have the formal approvals to make the change.

Recent trends in water demands and population are less than forecasted projections in the 2008 Water System Plan. The economy, reduction in new development, and changes in water use by existing customers caused the reduction. Because the trend is less than forecasted, the assumptions in the existing Plan appear conservative.

The District retained the services of Carollo Engineers to develop the new plan. The plan will focus on a 10 year and 20 year planning horizon in the event DOH allows 10 year updates. In addition to the update, Carollo will update the existing hydraulic model and evaluate several different supply scenarios to be used as part of a future Lakehaven Utility District supply. Also, FCSG will review the District's rates and capital connection charges.

The District budgeted approximately \$235,000 for the complete plan. The District will fund the plan by existing water rates. Work will be complete in early 2016.

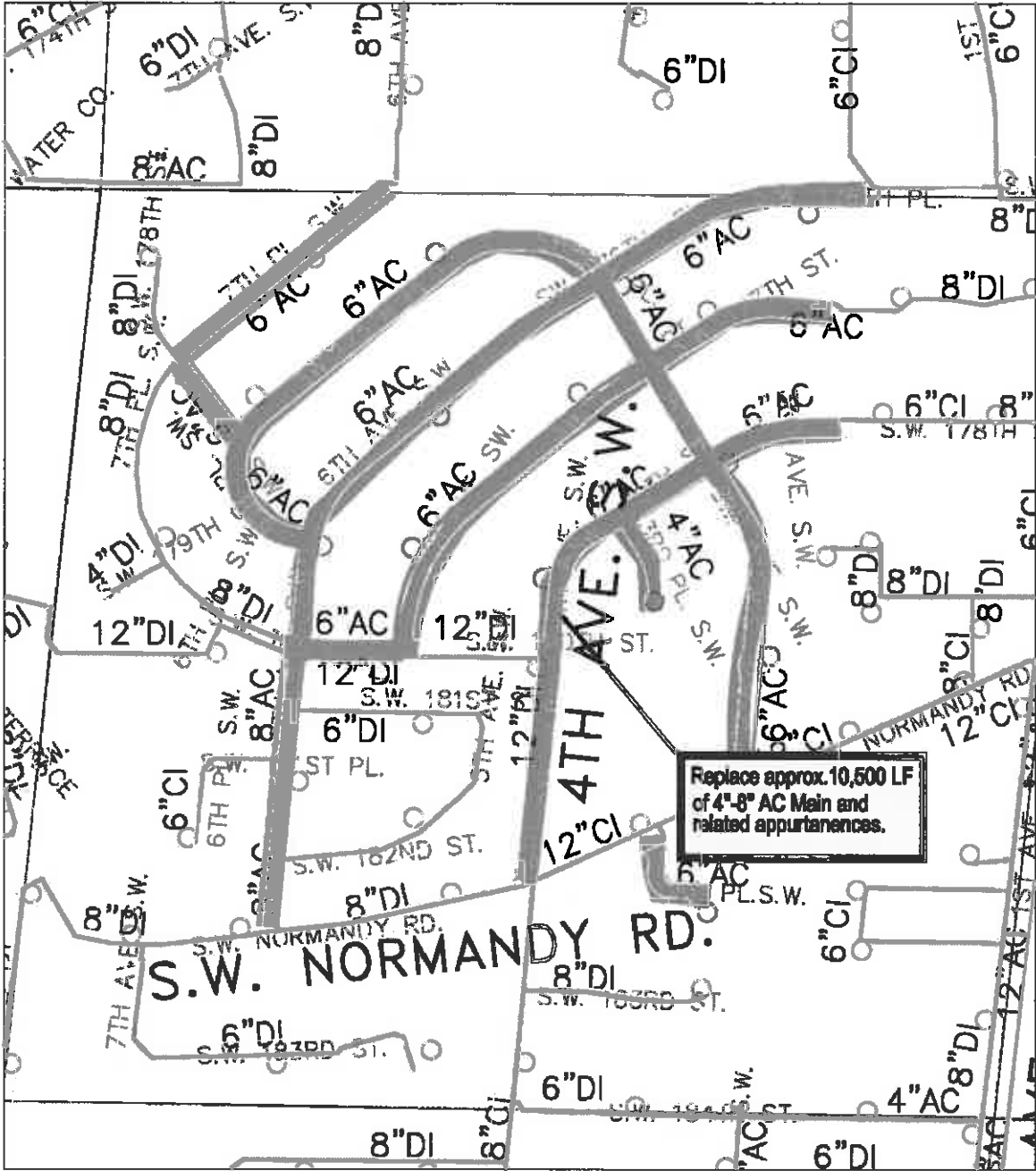
Project 14-3 Manhattan View Water Main Replacement

The District in its continuing effort to replace aging small diameter AC water mains, selected the Manhattan area in Normandy Park as a candidate for a future CIP. The project area is generally bounded between 2nd Ave SW and 7th Place SW in the residential neighborhood north of SW Normandy Road. The area is served by approximately 10,500 LF of small diameter AC pipe ranging in size from 4-inch and 8-inch. The District experienced several small main breaks in the past due to relatively higher pressures in the area.

The District submitted the project in 2012 for PWTF funding. The project met the criteria and selected by the Public Works Board for funding; however, the legislature decided not to fund the PWTF in the biennium resulting in the loss of funding. The District believes the project is still a high priority and decided to prioritize it for replacement from existing water rates and capital reserves.

The Board contracted with Gray and Osborne for survey and design. The District scheduled the project for construction in 2015; however the City of Normandy Park expressed concern over the multiple construction projects in the general Manhattan area in 2015. Subsequently, the District decided to postpone the project until early 2016 for construction in spring.

The District allocated \$3.17 million for the total project costs and will fund the project by rates and existing capital reserves.



Replace approx. 10,500 LF
of 4"-8" AC Main and
related appurtenances.



14-3 - Manhattan View
Watermain Replacement Project
between SW 175th & SW Normandy Rd



**14-3 MANHATTAN VIEW WATER MAIN REPLACEMENT
ESTIMATED PROJECT COSTS**

CATEGORY	Prior Years	2015	2016	TOTAL
Capitalized Interest	\$ 277	\$ 750		\$ 1,027
Engineering - Design	\$ 58,401	\$ 57,219		\$ 115,620
Construction	\$ -	\$ -	\$ 2,709,000	\$ 2,709,000
Construction Administration	\$ -		\$ 270,900	\$ 270,900
Staff Labor and Benefits	\$ 538	\$ 7,600	\$ 46,250	\$ 54,388
Permitting	\$ -	\$ -	\$ 8,500	\$ 8,500
Miscellaneous / Other	\$ -	\$ 2,500	\$ 2,500	\$ 5,000
Legal	\$ -	\$ 2,500		\$ 2,500
TOTAL	\$ 59,216	\$ 70,569	\$ 3,037,150	\$ 3,166,935

FUNDING FOR PROJECT				
CATEGORY	Prior Years	2015	2016	TOTAL
Rates/Reserves	\$ 59,216	\$ 70,569	\$ 3,037,150	\$ 3,166,935
				\$ -
TOTAL	\$ 59,216	\$ 70,569	\$ 3,037,150	\$ 3,166,935

ESTIMATED SCHEDULE FOR PROJECT COMPLETION	
Description	Date
Design Engineering (Complete)	December 2015
Award Construction Contract	March 2016
Begin Construction	April 2016
Project Final Completion	August 2016

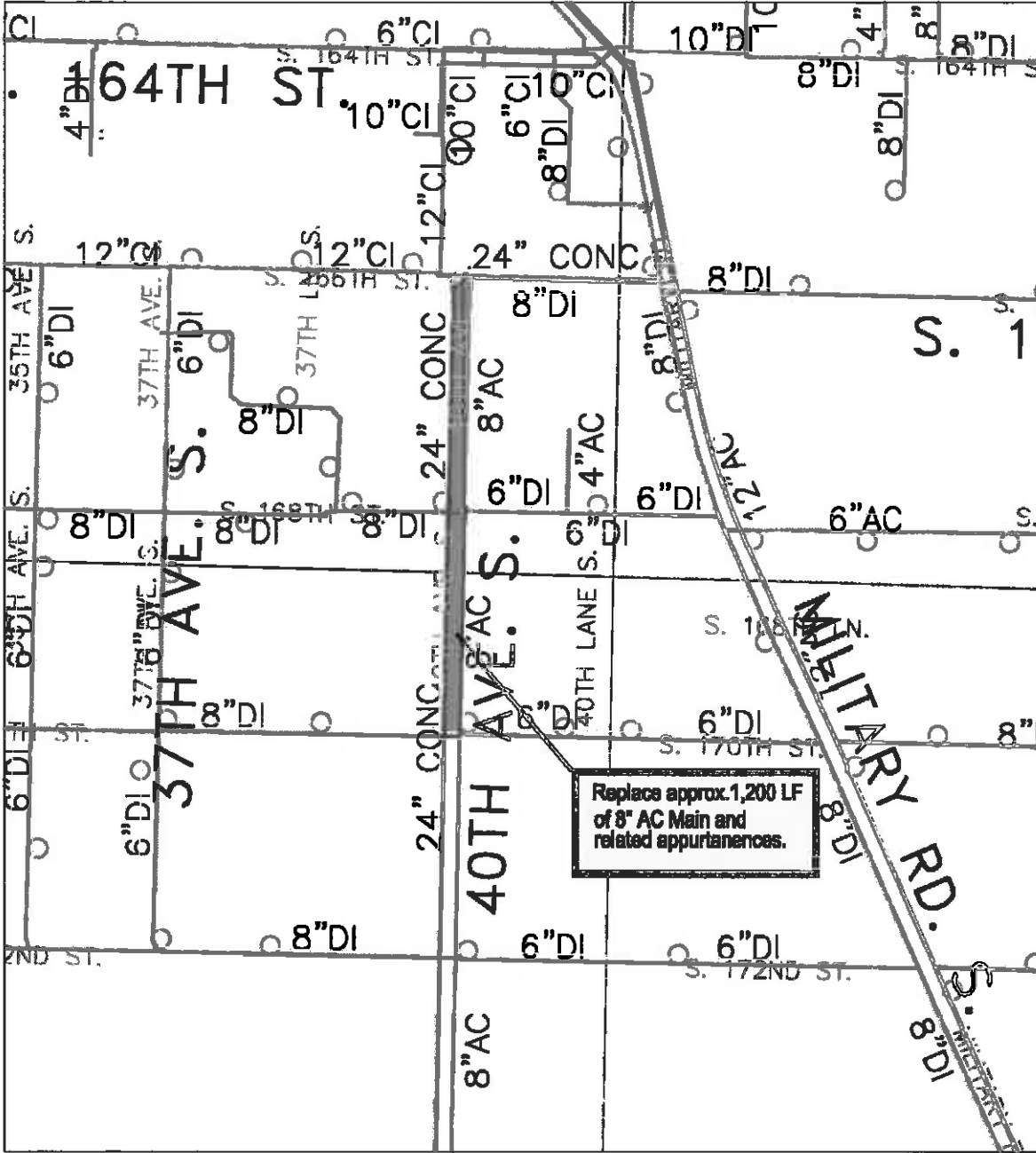
Project 14-4 40th Ave S Water Main Replacement

In May 2012, the City of SeaTac selected the segment of 40th Ave S between S 166th St and S 170th St as the project for the 2015 Sidewalk Improvement Program. The City's work includes the installation of new curb and sidewalk on both sides of the street along with storm drainage improvements and surface restoration.

The District operates an existing 8-inch diameter AC water main between S 166th St and S 170th St. South Seattle Water Company installed the approximately 1,200 LF water main in 1962. The District would benefit by replacing the main along with the City's road project. In addition, by partnering with the City on their contract, the District will save on administration and restoration costs for the project. The City will issue a five (5) year moratorium for open cutting the road upon completion of the overlay.

The Board authorized a design contract with Parametrix, Inc. on July 16, 2014 and an Interlocal Agreement with the City of SeaTac on May 20, 2015. The City advertised and awarded the contract to RW Scott Construction on October 13, 2015. The awarded construction cost for the water work is \$214,833.53. The water main work will begin January 2016.

The District allocated \$281,146 for the total project costs and will fund the project by existing water rates and reserves.



14-4 - 40th Ave S

Watermain Replacement Project between S 166th ST & S 170th ST



**14-4 40TH AVE S WATER MAIN REPLACEMENT
ESTIMATED PROJECT COSTS**

CATEGORY	Prior Years	2015	2016	TOTAL
Capitalized Interest	\$ 33	\$ 2,500		\$ 2,533
Engineering - Design	\$ 6,963	\$ 13,500		\$ 20,463
Construction	\$ -	\$ -	\$ 215,000	\$ 215,000
Construction Administration	\$ -		\$ 21,500	\$ 21,500
Staff Labor and Benefits	\$ 150	\$ 1,500	\$ 18,500	\$ 20,150
Permitting	\$ -	\$ -		\$ -
Miscellaneous / Other	\$ -	\$ 1,000		\$ 1,000
Legal	\$ -	\$ 500		\$ 500
TOTAL	\$ 7,146	\$ 19,000	\$ 255,000	\$ 281,146

FUNDING FOR PROJECT				
CATEGORY	Prior Years	2015	2016	TOTAL
Rates/Reserves	\$ 7,146	\$ 19,000	\$ 255,000	\$ 281,146
				\$ -
TOTAL	\$ 7,146	\$ 19,000	\$ 255,000	\$ 281,146

ESTIMATED SCHEDULE FOR PROJECT COMPLETION	
Description	Date
Design Engineering (Complete)	August 2015
Award Construction Contract (Seatac)	October 2015
Begin Construction	January 2016
Project Final Completion	May 2016

Project 15-1 Tye Well Rehabilitation Project

The Tye Well is one of four production wells operated by the District. The location of the well is adjacent to the Tye Golf Course within the City of SeaTac. The Tye Treatment Plant treats the well water and serves the 490 Pressure Zone. The well and treatment plant became operational in 2004.

The well design called for an instantaneous withdrawal rate of 750 gpm and an annual production of 600 acre-feet per year. From the initial operation of the well, the District experienced a gradual decline in instantaneous production over time. In early 2015, the well produced approximately 340 gpm and rested on weekends to help recovery.

The District implemented several rehabilitation methods in the past, including, well redevelopment in 2006 and a Hydropuls® impulse generation in 2008. The rehabilitation methods yielded short-term increases in well production but the flow rates continued to decline over time.

In April 2015, the District removed the well pump and motor. The equipment showed significant damage from the presence of iron-related bacteria within the well formation. The pump was damaged beyond repair. The District retained RH2 Engineers to size a replacement pump and motor. PumpTech ordered the replacement pump and scheduled delivery in early 2016.



RH2 explored options to create a more permanent solution to increase production from the well. Unfortunately, there are few tested methods other than redevelopment to address the iron bacterial issue. The District did not select more experimental options that require the use of chemical additives to the groundwater. The District will continue water testing to develop a more accurate schedule for planning well redevelopments in the future.

Robinson Noble assisted in preparing contract documents for a well redevelopment prior to delivery of the new pump and motor. The Board contracted with Hokkaido Drilling to perform a mechanical and chemical redevelopment. Rehab work should be complete by the end of 2015.

The District budgeted \$250,000 in 2015 to complete the redevelopment and purchase the new pump. Some of the 2015 expenditure will be spent in 2016 upon delivery of the pump and motor. The District budgeted \$140,000 in 2016. Funding for the project will be by water rates and capital reserves.

NEW CIP PROJECTS IN 2016

The following projects will be new Capital Improvement Projects for 2016:

Project 14-2 560 Zone Lakehaven Utility District South Supply

Lakehaven Utility District (LUD), a regional partner in the new Tacoma Treatment Plant, began receiving filtered water from the source in 2015. LUD approached the District to discuss selling an average of 2.0 MGD to Highline.

The benefit of purchasing water from LUD is to have a redundant source of supply at a lower cost than Seattle Public Utilities (SPU), to help boost the hydraulic grade line in the southern portion of HWD, and to give additional operational flexibility to the District. The District gave a 5-year notice to SPU in August 2011 of its intention to purchase water from LUD in 2016, as required by the Partial Services Contract between the agencies.

Prior to purchasing water from LUD, the District will require the approval from the Department of Health. Planning work, including a blending study, will be necessary. The District will need to identify any necessary capital improvements along with future operation evaluation and assistance. Carollo, the consulting firm developing the District's Water System Plan, began the initial effort as part of the update. The District will need subsequent planning after analyzing the initial feasibility.

The District allocated \$50,000 in the 2015 budget for studies and evaluations. The District did not perform any work in 2015 beyond the Water System Plan due to LUD switching from Tacoma water to their groundwater sources for the summer drought. The budget for 2016 includes \$125,000 for studies/evaluations and \$475,000 in 2017 for any needed capital improvements. Upon completion of the initial study effort, the District can perform a more detailed budget of the necessary expenditures. The initial funding for the project is by rates and capital reserves.

Project 16-2 Pump Station No 8 (Crestview)

The District's two primary water sources for the 560 Pressure Zone are Pump Station No 6 (PS6) and Pump Station No 1 (PS1). A major component for storage in the 560 Zone is the 7.6 MG Crestview Reservoir. Source water from Seattle Public Utilities and storage in the Crestview Reservoir must pump through PS6 to serve the 560 Pressure Zone.

From the 2015 Water System Plan analysis, a second pump station serving water from the Crestview Reservoir and SPU into the 560 Pressure Zone would significantly improve redundancy in the system. The first phase will be preliminary engineering and feasibility. The preliminary engineering will address sizing and location of the station. Subsequent phases will be design and construction.

The District allocated \$250,000 in the 2016 budget and \$1,544,000 in 2017 for design and construction of the new station. Staff will revise the budget upon completion of the preliminary engineering and scoping. Project funding will be from existing rates and capital reserves.

Project 16-3 Mansion Hill Reservoir Relocation

In late 2015, Sound Transit selected the SR509/I-5 route for the Federal Way Link Light Rail Extension Project. The proposed alignment passes adjacent to the District 5.0 MG 490 Zone reservoir at Mansion Hill. The close proximity of the light rail will require the relocation of the reservoir.

The project will require several phases of work. The first phase will be preliminary engineering, including survey, geotechnical investigation, planning, permitting and overall project scoping. The first phase includes assisting the District in contract negotiations with Sound Transit for cost reimbursement. Subsequent phases will include design, permitting, construction inspection and administration. The District must complete the reservoir work by early 2019 to avoid conflicts with Sound Transit's construction.

Project 16-4 Sound Transit Transmission Main Relocation is a separate project to the reservoir relocation. The project will include the relocation of approximately 1,500 LF of existing 30" transmission main in conflict with the proposed light rail alignment. The District will begin the design for the Project 16-4 in 2017.

For Project 16-3, the District budgeted \$250,000 for the first phase of work in 2016. The 2017 and 2018 budgets are 3,000,000 and 3,500,000, respectively. These estimates are preliminary and subject to change as the project scope becomes further defined. Sound Transit will reimburse the District for these expenses.

SMALL WORKS / EMERGENCY PROJECTS FOR 2015

The Small Works / Emergency Projects budget is an allocation of funding set aside for capital projects not specifically identified during the budgeting process but arise during the year. It is typically used for smaller sized projects, such as a short main replacement in anticipation of a City driven overlay project. In addition, the District can also use the budgeted money to fix facilities that have immediate maintenance issues or improve system efficiency.

For 2016, the District has allocated \$350,000 for the Small Works budget. The District will continue to work with the local Cities to determine the replacement of water mains in conjunction with road improvement projects.

FUTURE UNSCHEDULED IMPROVEMENTS

Per the District's Draft 2015 Comprehensive Plan Update, the following needs were assessed:

1. Source/Treatment: The District's contract with SPU satisfactorily addresses source of supply needs through 2060. However, the District retains several water rights. The value of the water rights was reviewed by District staff and consultants in 2004. Four (4) sites were recommended to the Board to have a "high" potential for rehabilitation. The first of the four sites is the McMicken Well and Treatment Plant. The plant went online in 2012. The District may continue to explore these supplemental sources to SPU.

The District will continue to explore the feasibility of purchasing water from Lakehaven Utility District (LUD). LUD is a stakeholder in the new Tacoma Public Utilities filtration plant that became operational in 2015. They have indicated they will have approximately 2.0 MGD excess water supply available for purchase. The District allocated funding in 2016 and 2017 to further study the source, perform a blending study and to make capital improvements to the system in anticipation of purchasing LUD water.

2. Storage: There are no significant short-term storage deficits.
3. Distribution System: The District will continue to use its 2008 Asset Management Plan to use as a guide to create prioritization strategies for future projects to evaluate water mains that will soon begin to meet the end of their useful life and need to be replaced. The next scheduled update of the Asset Management Plan is 2018.

In 2012, staff discussed with the Board the goal to replace AC water mains within in the District over the next 30 years. The District will focus efforts replacing small diameter mains adjacent to sensitive/critical areas like steep slopes or wetlands. In addition, the District will work to replace mains identified in the comprehensive plan to improve fire suppression. The District will continue to work with Cities to replace water mains in consort with City projects to reduce costs.

MITIGATION IMPROVEMENTS FOR 2016

The District has completed and/or updated important documents within the last few years. The documents are the Hazard Mitigation Plan and the Security Vulnerability Assessment. Both outline improvements to District facilities to ward against man-made and natural disasters. \$45,000 has been budgeted for mitigation improvements in 2016. The District will update the monitored security system and equipment at the District Office in 2016.

METERS, HYDRANTS AND SERVICES BUDGET

The Meter, Hydrants and Services budget is an allocation of funds used for new or replaced capital assets performed by District personnel. Typically, the assets are pipe, meters, hydrants and/or water services. For example, a small water main replacement project that would be performed by District crews would be funded from this budget. The costs will be capitalized over the life of the asset. The budget is evaluated annually by reviewing the goals and objectives for the subsequent year and comparing the figures with the overall annual budget.

For 2016, the budget includes \$1,000,000 for the meters, hydrants, and services. The budget includes the replacement of approximately 25 hydrants, 50 water services, and three (3) small water main replacement projects for the field crew. In 2016, the budget also reflects approximately 3,500 MXU replacements. The District will evaluate and develop a plan for the replacement of small diameter meters. Please see the *2016 Goals and Objectives* document for more specific information on specific goals by the field crews for capital improvements.

APPENDIX
CIP CONSTRUCTION PHOTOS

PROJECT 13-1A ANGLE LAKE AC WATER MAIN REPLACEMENT



PROJECT 13-1B MILITARY RD S AT ANGLE LAKE WATER MAIN REPLACEMENT



PROJECT 15-1 TYEE WELL REDEVELOPMENT



Agenda Item No.: 5.2
 Agenda Date: 12/16/2015
 Reviewed By: M.E.

Subject: Adopt 2016 Capital Improvement Program

CATEGORY	
<i>Executive</i>	<input type="checkbox"/>
<i>Administrative</i>	<input type="checkbox"/>
<i>Engineering/Operations</i>	<input checked="" type="checkbox"/>

FINANCIAL			
<i>Expenditures?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<i>Budgeted?</i>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
			<i>Amount: \$</i> _____
<i>Plus WSST</i>			

- Attachments**
1. Resolution #15-12-16B
 2. Exhibit A – 2016 Capital Improvement Program

COMMENTS:

Each year staff and the Commissioners review the needs of the District and establish a Capital Improvement Program (attached to the resolution as Exhibit A).

Staff recommends approval of this resolution.