HIGHLINE WATER DISTRICT King County, Washington

RESOLUTION 20-12-16B

RESOLUTION ADOPTING THE 2021 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 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:

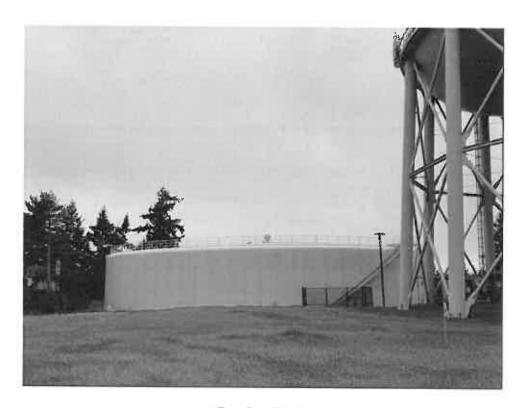
The Board of Commissioners hereby adopts the 2021 Capital Improvement Program, attached as Exhibit A and incorporated herein by this reference.

ADOPTED BY THE BOARD OF COMMISSIONERS of Highline Water District, King County, Washington, at an open public meeting held this **16th** day of **December 2020**.

BOARD OF COM	MISSIONERS
Um Caset	18
Vince Koester, President	Tødd Fultz, Secretary
Polly Darale	Valotin
Polly Daigle, Commissioner	Daniel Johnson, Commissioner
Kath Bury Vernew	
/Kathleen Quong-Vermeire, Commissioner	

EXHIBIT A





2021 CAPITAL IMPROVEMENT PROGRAM



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EXECUTIVE SUMMARY

Highline Water District's goal is to provide high quality and reliable water service to all customers in accordance with the rules and 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 reliable technology and materials.

In the fall of each year, District staff prepares a draft CIP plan for review by the Board of Commissioners. The plan includes budgets and narratives for the proposed Capital Additions for the upcoming year. Each narrative includes a project description; the purpose; a budget allocation and/or estimated project costs (if known from preliminary engineering at the time of budget preparation); a breakdown of funding sources; and an estimated project schedule.

Staff presents the draft CIP to the Commissioners at a regularly scheduled Board meeting. Management makes changes based on the Board's input and prepares a final draft. Typically, the Board considers the final draft of the CIP simultaneously with the District's annual Operations and Maintenance Budget for approval at a regularly scheduled meeting in December of each year.

In 2020, the District completed Project 16-3 Mansion Hill Reservoir Relocation. The \$9.4M project was one of the District's largest capital investments to date. Several projects scheduled for completion in 2020 were delayed by COVID-19 and other related factors. These projects will continue into 2021.

The proposed 2021 CIP includes ten projects in various phases of planning, design and construction. The projects include:

- Project 16-2 George Landon Pump Station (PS8)
- Project 16-6 Mansion Hill Pump Station (PS9)
- Project 18-2 International Blvd S at SR 509 Road Improvements
- Project 18-5 34th Ave S Water Main Replacement
- Project 19-1 2019 AC Water Main Replacement (Areas around North Hill)
- Project 19-2 2020 Water Main Replacement (Normandy Park Manhattan Cl Replacement)
- Project 20-1 Star Lake Military Road Water Main Relocation
- Project 21-1 24th Ave S Water Main Replacement (2022 AC Project)
- Project 21-2 32nd Ave S Water Main Replacement (City of SeaTac)
- Project 21-3 Mansion Hill 2.5MG Reservoir Int./Ext. Recoat and Safety Improvements

The estimated Total Capital Additions (expenditures) for 2020 is \$8.9 million, including an estimated \$3.7 million reimbursement from Sound Transit to accommodate the Federal Way Link Light Rail Extension (FWLE) and from other outside sources. Debt service for 2020 was \$708,000.

For 2021, the Total Capital Additions is estimated at \$14.0 million. The District will fund the CIP through a combination of water rates, development connection charges and partner agency reimbursements. The effective Capital Additions based on District contributions (rates, connection charges and capital reserves) is \$11.9 million. The remaining funding is from Sound Transit for the FWLE and other agency reimbursements. Debt service reduces to \$585,000 in 2021, as the District continues to retire existing loans.

See **Page 4** for overall capital addition funding and the body of this report for project narratives, budgets and locations.

2021 CIP - OUTSTANDING FUNDING & DEBT SERVICE (2020-2024)

CAPITAL PROJECTS

	CAPITAL PROJECTS	Prior	Projected					
CIP#	Project Title	Years	2020	2021	2022	2023	2024	Totals
16-2	George Landon Pump Station (PS8)	\$ 926,384	\$ 1,194,000	\$ 4,339,108				\$ 6,459,492
16-3	Mansion Hill Reservoir Relocation	\$ 6,937,168						\$ 9,382,435
16-6	Mansion Hill Pump Station No 9	\$ 155,188	\$ 975,500	\$ 1,215,657				\$ 2,346,345
18-2	International Blvd at SR 509 Road Improvements	\$ 203,961		\$ 3,377,873	\$ 247,333	\$ 240,333	\$ 225,333	\$ 5,526,212
18-5	34th Ave S Water Main Replacement	\$ 23,647	\$ 23,000	\$ 836,020				\$ 882,667
19-1	2019 AC Water Main Replacement (Areas around North Hill)	\$ 224,248	\$ 2,057,480	\$ 2,210,422				\$ 4,492,150
19-2	Manhattan Cast Iron Water Main Replacement		\$ 86,500		\$ 257,500	\$ 1,350,000		\$ 1,694,000
20-1	Star Lake Military Road Water Main Relocation (TO3 - ST Reimb)		\$ 71,000	\$ 605,000			i	\$ 676,000
21-1	24th Ave S Water Main Replacement (2022 AC Project)			\$ 85,000	\$ 995,750			\$ 1,080,750
21-2*	32nd Ave S - S 180th St Water Main Replacement (City of SeaTac)			\$ 115,800	\$ 2,102,550		· — -:	\$ 2,218,350
21-3	Mansion Hill 2.5MG Reservoir Int./Ext. Recoat and Safety Improvements			\$ 75,000	\$ 2,050,000			\$ 2,125,000
Future	PRV/SCADA Pressure Modifications		_		\$ 175,000			\$ 175,000
Future	2023 Water Main Replacement (Budget Allocation)					\$ 3,500,000		\$ 3,500,000
Future	2024 Water Main Replacement (Budget Allocation)						\$ 5,000,000	\$ 5,000,000
	Subtotal of Capital Projects	\$ 8,470,596	\$ 8,084,125	\$12,859,880	\$ 5,828,133	\$ 5,090,333	\$ 5,225,333	\$ 45,558,401
	* Scope yet to be fully Defined							
	Small Works/Emergency Projects		\$ -	\$ 350,000	\$ 350,000	\$ 350,000	\$ 350,000	\$ 1,400,000
	Mitigation Improvements		\$ 10,000	\$ 40,000	\$ 50,000	\$ 50,000	\$ 50,000	\$ 200,000
	Meters/Hydrants/Services (Refer to O&M Budget)		\$ 600,000	\$ 500,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 2,300,000
	Capital Asset Purchases (Refer to O&M Budget)		\$ 190,000	\$ 297,330	\$ 250,000	\$ 255,000	\$ 260,000	\$ 1,252,330
	Total Capital Additions	\$ 8,470,596	\$ 8,884,125	\$14,047,210	\$ 6,878,133	\$ 6,145,333	\$ 6,285,333	\$50,710,731
	Less: Outside Funding Sources	Prior Years	2020	2021	2022	2023	2024	Totals
	Other Outside Sources (16-3; 16-6 Sound Transit; & 19-1 DM and MSD)		\$ 3,691,601	\$ 2,153,414				\$ 5,845,015
	General Facility Charges		\$ 725,000	\$ 600,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 2,825,000
	Total Outside Funding	\$ 5,486,241	\$ 7,715,682	\$ 4,350,922	\$ 500,000	\$ 500,000	\$ 500,000	\$ 19,052,844
	Debt Service		2020	2021	2022	2023	2024	Totals
			\$ 708,087	\$ 585,024	\$ 489,999	\$ 415,882	\$ 363,797	\$ 2,562,789
	Total Debt Service		\$ 708,087	\$ 585,024	\$ 489,999	\$ 415,882	\$ 363,797	\$2,562,789
			,				<u> </u>	
			2020	2021	2022	2023	2024	Totals
	Capital Additions + Debt Service (Total)	\$ 8,470,596	\$ 9,592,212	\$ 14,632,234	\$ 7,368,132	\$ 6,561,215	\$ 6,649,130	\$ 53,273,520

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."

Highline Water District's goal is to provide high quality and reliable water service to all customers in accordance with the rules and 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 the Board of Commissioners. The plan includes budgets for the proposed Capital Additions in 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** 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). If an unplanned project spans beyond the budget year, the project will be converted to a Capital Project in subsequent budgets. If unused, these funds remain in capital reserves.
- **Mitigation Improvements** improvements to District facilities to ward against manmade and natural disasters or security improvements in support of the Hazard Mitigation Plan and the Security Vulnerability Assessment.
- Meters/Hydrants/Services purchases of materials for the 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).

This document includes narratives for Capital Projects, Small Works/Emergency Projects and the Mitigation Improvement budgets. Each narrative includes a project description; the purpose; a budget allocation and/or estimated costs (if known from preliminary engineering at the time of budget preparation); a breakdown of funding sources; and an estimated project schedule. The annual *Operation and Maintenance Budget* and the *District's Goals and Objectives* 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 simultaneously with the annual Operations and Maintenance Budget for approval at a regularly scheduled meeting in December of each year.

Prioritization of Projects

Several issues confront water agencies when evaluating and comparing projects. When completing the District's Comprehensive Water System Plan, the Board of Commissioners,

management, staff and consultants review the needs of the water system. Specifically, the Washington State Department of Health (DOH) requires water agencies 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 sustainability.

DOH places a priority on deficiencies in source, treatment and storage. Generally, distribution mains are only required to be upgraded if they cannot provide adequate fire flow to support future development. Highline generally follows this priority strategy; however, the District emphasizes the need to improve the distribution system at a rate greater than the depreciation of the existing assets. In addition to fire flow limitations, Highline also considers historical issues of the water mains (main repairs, leaks, dead ends, water quality complaints, location, safety, looping, land use issues, etc.) when prioritizing replacement projects.

As of late, the District's primary factor in selecting projects is based on outside agencies impacting the existing water distribution system. Utilities must relocate their facilities to accommodate city-owned infrastructure and projects. In addition, many cities issue a moratorium on pavement cuts for up to five years after completion of a city project. It maximizes public value to replace water facilities with these road construction projects. Some projects included with city work may not be the District's highest replacement priority; however, partnering helps lower overall project costs and minimize public inconvenience during construction. The result is continued reinvestment into the water system at a lower cost and impact to the ratepayers.

Capital Addition Funding

Project funding is an important component in the process. Because of limited resources, the District cannot fund all projects contemplated in the Comprehensive Water System Plan. Capital Additions are typically funded by rates or other outside sources (General Facility Connection Charges [GFC], revenue bonds, low-interest loans, or developer contributions/reimbursements.) The estimated GFC revenue for 2020 is \$725,000 and \$600,000 for the proposed 2021 budget.

Public Works Trust Fund (PWTF) low interest loans are an excellent way to reinvest in infrastructure by reducing the financial burden to the ratepayers. Repayment periods are up to 30 years at interest rates as low as 1.5%, depending on the loan term, local funding match, and project completion incentives by the State. Typically, the District selects repayment schedules and local match funding to minimize interest over the life of the loan. However, due to fiscal constraints, the Washington State Legislature has reduced and/or eliminated funding for the PWTF. Future PWTF resources continue to remain uncertain.

Grant money opportunities for infrastructure projects are limited and extremely competitive. The District will pursue grant funding, if available. The District's association memberships help to inform agencies of possible grant opportunities.

Each year, staff works with the Board 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. 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 work:

- Staff may issue a Request for Proposals for more technically challenging projects or may review listed and/or requested information from consultants identified on the MRSC Consultant Roster.
- 2. Staff evaluates the consultant's general Statement of Qualifications (SOQ) and/or Request for Proposals (RFP), may request interviews, and will recommend to the Board the most competent consultant to complete the project design.
- 3. Staff negotiates the contract then presents the consultant's proposal to the Board for their review and approval.
- 4. Upon approval, the consultant begins working with staff to complete the design. At each regular meeting, the Board receives a brief 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 responsive, responsible bidder, in accordance with state public works statutes.
- 7. The recommendation to award/not award is brought before the Board along with an authorization to execute a construction contract 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 contract revisions over \$15,000 per contract unless contingency is authorized by resolution or included the contract.
- 10. Upon completion of the project, staff and the consultant make a recommendation to the Board to accept the project as complete. The recommendation is then considered 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.
- 12. Staff completes the necessary closeout paperwork.

2021 Capital Addition Budget

For 2021, the District's anticipated Capital Addition Budget is \$14.2 million. The figure includes budget to support the five Capital Addition components. The District will fund the 2021 CIP through water rates, capital reserves, connection charges, and developer reimbursements. Of the Capital Addition Budget, the District's contribution is approximately \$11.9 million. The remaining portion of the budget is from Sound Transit reimbursement for the Federal Way Link Light Rail Extension and other outside partnering agencies.

Please see Page 4 for a breakdown of the overall capital additions and funding sources.

2020 COMPLETED CAPITAL PROJECTS

Project 16-3 Mansion Hill Reservoir Relocation

In late 2015, Sound Transit (ST) selected the SR509/I-5 route for the Federal Way Link Light Rail Project. The proposed alignment passes adjacent to the District's 5.0 MG 490 Zone reservoir and 30-inch Transmission Main at the Mansion Hill Tank site. The proximity of the light rail required the relocation of the tank and transmission main.

The first phase of work included preliminary engineering, including survey, geotechnical investigation, planning, permitting and overall project scoping. The work also included contract negotiations with ST for cost reimbursement. In 2016, the



District executed an Interlocal Agreement for preliminary engineering with ST and a separate consultant contract with Stantec to determine the impacts to the water system and the preferred mitigation options.

From the preliminary engineering effort, the District identified the system conflicts and developed several methods to mitigate the impact. Each mitigation became a separate project: Project 16-3 Mansion Hill Reservoir Relocation; Project 16-4 Mansion Hill 30" Transmission Main Relocation;



and Project 16-6 Mansion Hill Pump Station Project (PS9). In 2018, the 30" Transmission Main project was reassigned to a Developer Extension due to Sound Transit's federal reimbursement requirements for work within public ROW. The transmission main was constructed in early 2020 by Sound Transit at their expense.

Project 16-3 included the construction of a new, 4.5 MG 490 Zone reservoir to replace the existing 5.0 MG reservoir; however, the new location conflicted with the existing 0.25 MG elevated tank. The project included the demolition of both tanks. The elevated tank will be replaced by the proposed pump station identified as Project 16-6.

The District executed a contract amendment with Stantec to perform final design services, permitting and contract document preparation for Project 16-3. Their effort was complete in 2018.

The District advertised and awarded the construction contract to T Bailey, Inc. on October 23, 2018. Notice to proceed for construction was issued in November 2018 and was deemed substantially complete in July 2020. There are a few cleanup items remaining with a final resolution to accept as complete to be presented to the Board later in 2020.





During construction, toxic soils containing arsenic and lead were encountered adjacent to the existing reservoir. The District retained the services of Shannon and Wilson to oversee the cleanup effort. A change order was executed with T Bailey who performed the cleanup in accordance to Department of Ecology requirements.

The total project cost for Project 16-3 was approximately \$9.4 million. The final construction cost was approximately \$7.8 million. Of the total project cost, \$7.6 million was eligible for reimbursement by Sound Transit. The remaining costs were betterments to improve security and for offsite water main work necessary to construct the reservoir project.

2021 CAPITAL PROJECT NARRATIVES

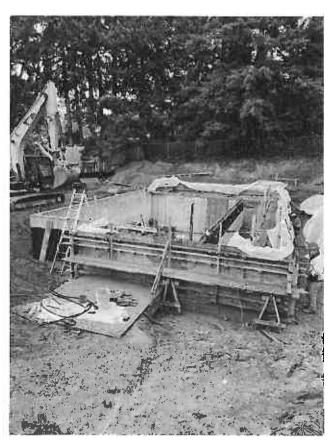
Each project narrative includes a project description; the purpose; a budget allocation and/or estimated project costs (if known from preliminary engineering at the time of budget preparation); a breakdown of funding sources; and an estimated project schedule. Not all projects will have specific breakdowns of project costs, only budget allocations. Upon completion of preliminary engineering, staff will refine these allocations into specific project costs and budgets.

The projects scheduled for work in 2021 include:

Project 16-2 George Landon Pump Station (PS8) Project 16-6 Pump Station No 9 (Mansion Hill Pump Station)

Highline Water District's majority storage facility serving the 560 Pressure Zone is the 7.6 MG Crestview Reservoir. Water stored in Crestview or source water from Seattle Public Utilities must pump through Pump Station 6 (PS6) to enter the 560 zone.

The 2016 Comprehensive Water System Plan identified the need for a second pump station to serve the 560 zone from SPU and Crestview. The project would improve redundancy and resiliency in the overall water system in the event of a failure of PS6. The new pump station (PS8) will use modern equipment and receive electrical service from Puget Sound Energy, a different electric utility than PS6 (Seattle City Light).



The District selected RH2 Engineering to perform the preliminary engineering services including evaluating local properties in the general area of S 160th St and 42nd Ave S for siting the station. The designers narrowed the search based on elevations, proximity to Crestview Reservoir and PS6, cost and adverse impacts to the neighborhood. RH2 completed the preliminary assessment in December 2016.

The District selected to site the station at the Harper property located at 16032 42nd Ave S. The property housed an existing derelict structure in foreclosure. The home was a source of criminal activity and was a nuisance for the surrounding properties. The District closed the sale in November 2016 and subsequently demolished the structure in early 2017.

RH2 Engineering evaluated several design concepts. The design includes a 5,000 GPM split-level pump station; pumps and piping are below ground and electrical and equipment storage in an above ground building. The

station will include the capability to discharge into a 600 Pressure Zone in the event the District decides to change the hydraulic grade line of the 560 Pressure Zone. RH2 retained Page and Beard Architects to design the above ground building to blend in with the surrounding properties.

Staff coordinated with the City of Tukwila and obtained the Unclassified Use Permit (UUP) in early 2018. The intake and outlet piping are within existing SeaTac right-of-way and will require a City issued ROW permit. All permits were obtained in 2019.

The District completed the design effort in spring 2019 but elected not to advertise the project due to lack of competition in the construction market. Staff recommended to the Board to postpone construction until the beginning of the 2020 construction season to obtain more favorable construction timing. In December 2019, the Board of Commissioners renamed the project to the George Landon Pump Station in honor of Commissioner George Landon's long-time service to the District.

In 2019, the District began design work for Project 16-6 Mansion Hill Pump Station (PS9). PS9 will replace the storage capacity for the 0.25 MG elevated tank removed at Mansion Hill to accommodate the FWLE project by Sound Transit. The base design will be for a triplex 3,000 GPM station pumping from the 490 Pressure Zone into the 560 Pressure Zone at the Mansion Hill tank site.

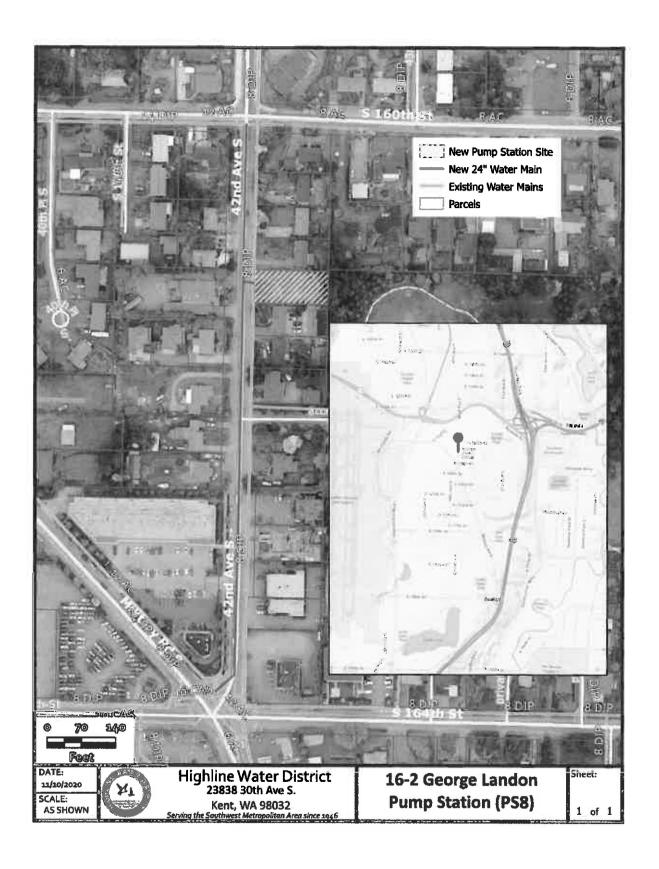
The project required the District to retain a consultant for design and construction administrative services. The District determined there would be significant economies-of-scale by adding Pump Station 8 and 9 into one construction contract. The District advertised the combined project in early 2020. Construction began July 2020 for both stations and expected to be complete by summer 2021.

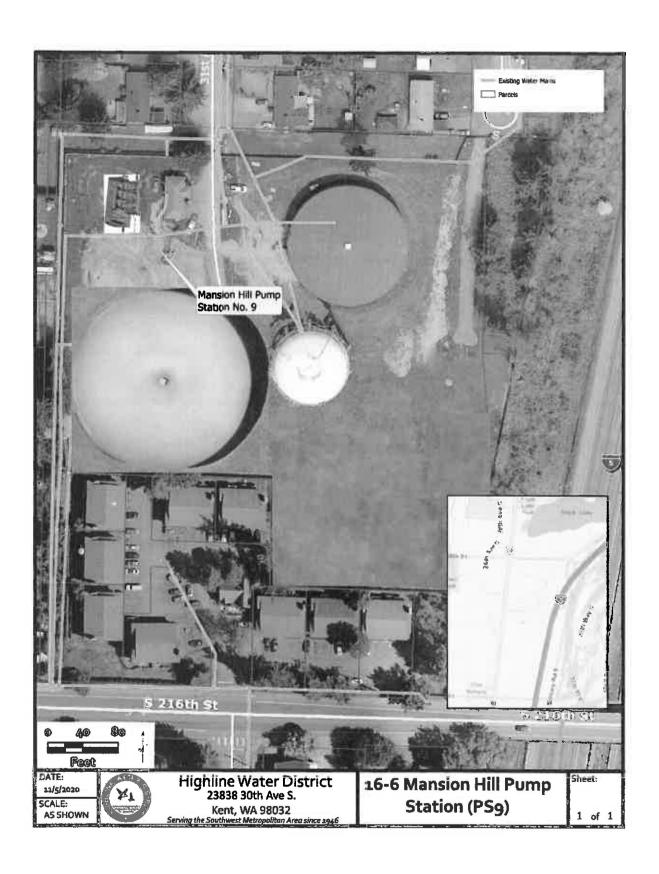
The District allocated \$4.3 million in the 2021 budget for Pump Station 8. The total anticipated project cost is \$6.5 million and funded by existing water rates and capital reserves.

For Project 16-6, the District budgeted \$1.3 million for 2021. The anticipated project cost is \$2.3 million. Sound Transit will reimburse the District for the pump station costs less any improvements considered betterments. The budget includes approximately \$175,000 in District capital reserve funding to upsize pumping capacity from 3,000 to 4,000 gpm and adding flexibility in the event the District



decides to change the 560 Pressure Zone into a 600 Pressure Zone. Upsizing is considered a betterment.





16-2 PUMP STATION No. 8 ESTIMATED PROJECT COSTS

CATEGORY	Prior Years			2020	2021			TOTAL
Engineering - Design/Construction Admin	\$	606,411	\$	140,000	\$	211,820	\$	958,231
Construction	\$	27,490	\$	1,050,000	\$	4,069,088	\$	5,146,578
Staff Labor and Benefits	\$	26,306	\$	2,500	\$	37,200	\$	66,006
Permitting	\$	21,376	\$	_	\$	15,000	\$	36,376
Property Acquisition	\$	238,763	\$		\$	_	\$	238,763
Miscellaneous / Other	\$	3,808	\$	1,500	\$	6,000	\$	11,308
Legal	\$	2,230	\$		\$	-	\$	2,230
TOTAL	\$	926,384	\$	1,194,000	\$	4,339,108	\$	6,459,492

FUNDING FOR PROJECT					
CATEGORY	Pr	ior Years	2020	2021	TOTAL
Rates/Reserves	\$	926,384	\$ 1,194,000	\$ 4,339,108	\$ 6,459,492
TOTAL	\$	926,384	\$1,194,000	\$4,339,108	\$6,459,492

ESTIMATED SCHEDULE FOR PROJECT COMPLETION								
Description Date								
Design Engineering (Complete)	March 2019							
Award Construction Contract	April 2020							
Begin Construction	July 2020							
Project Final Completion	July 2021							

16-6 PUMP STATION No. 9 ESTIMATED PROJECT COSTS

CATEGORY	F	Prior Years		2020		2021	TOTAL
Engineering - Design	\$	145,753	\$	143,000			\$ 288,753
Construction	\$	-	\$	720,000	\$	1,044,657	\$ 1,764,657
Construction Administration			\$	94,000	\$	141,000	\$ 235,000
Staff Labor and Benefits	\$	3,979	\$	6,000	\$	15,000	\$ 24,979
Permitting/Approvals	\$	4,838	\$	7,500	\$	12,500	\$ 24,838
Miscellaneous / Other	\$	618	\$	5,000	\$	2,500	\$ 8,118
TOTAL	\$	155,188	\$	975,500	\$	1,215,657	\$ 2,346,345

FUNDING FOR PROJECT					
CATEGORY	Pı	ior Years	2020	2021	TOTAL
Rates/Reserves	\$	-	\$ _	\$ 173,150	\$ 173,150
Sound Transit Reimbursement	\$	155,188	\$ 975,500	\$ 1,042,507	\$ 2,260,574
TOTAL	\$	155,188	\$ 975,500	\$ 1,215,657	\$ 2,433,724

ESTIMATED SCHEDULE FOR PROJECT COMPLETION								
Description	Date							
Design Engineering (Complete)	February 2020							
Award Construction Contract	April 2020							
Begin Construction	August 2020							
Project Final Completion	June 2021							

Project 18-2 International Blvd at SR509 Road Improvements

The Washington State Department of Transportation (WSDOT) proposes to extend the SR509 freeway from S 188th St to Interstate 5 as part of the Connecting Washington and the Puget Sound Gateway projects. WSDOT anticipates selecting a contractor by the end of 2020 who will design and construct the project. The overall project is scheduled for completion by 2026; however, the recent impact of Covid 19 may delay the State's schedule and/or reduce scope.

WSDOT's design requires a freeway overpass for International Blvd S (ILB) at SR509 near S 206th St. Sound Transit (ST) simultaneously plans for the Federal Way Link Light Rail to cross ILB in the same general vicinity. Because ST will construct their infrastructure first, WSDOT contracted with ST to construct the overpass on their behalf during the light rail construction. The effort help avoid multiple contractors working in the same general area on separate Public Works contracts.

Highline Water District has three water mains in the vicinity of the bridge. The District must relocate their infrastructure in advance of the bridge work and then affix the mains to the bridge after construction. The temporary relocation work was not included in the negotiation between WSDOT and ST. The District retained Pace Engineers to perform the preliminary planning work to identify all potential impacts of the project and measures to accommodate WSDOT.

Project 18-2 includes design and construction of the necessary improvements for the bridge work and crossing at International Blvd and for the other future SR509 impacts. The District entered into a Task Order Agreement with Sound Transit to construct the temporary bypass of the existing piping at SR99. The anticipated cost of the relocation is \$1.3 million. Construction will begin late 2020 and be complete in early 2021.

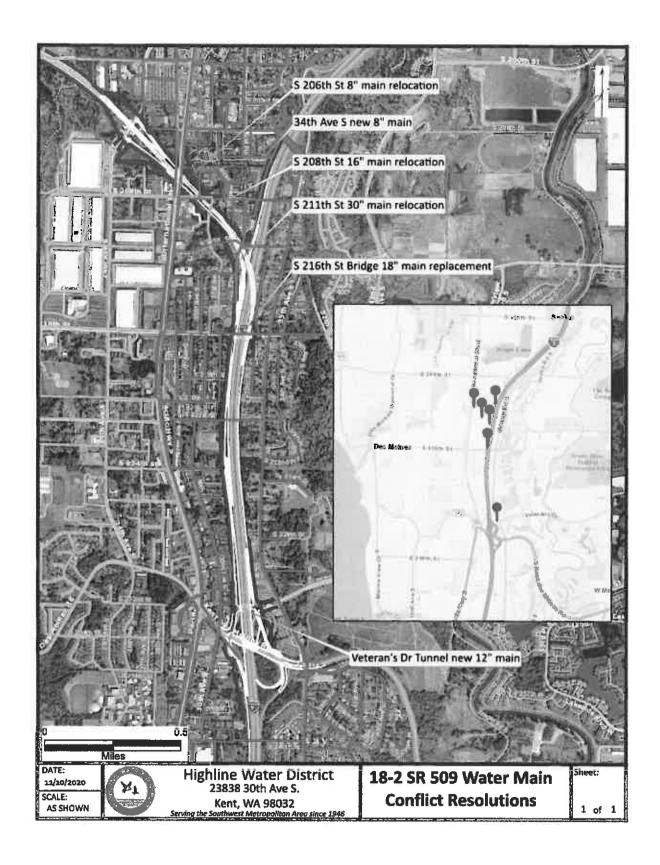
Other impacts to the District's infrastructure include: relocating the existing 30" transmission main across the new freeway alignment; replacing several mains along S 208th St between ILB and I5, a new distribution main along a future 34th Ave S from S 204th St to S 208th St; a new freeway crossing at a new bridge at S 216th St and I5; and other water improvements near KDM and I5.

In 2020, the District completed the evaluation, design alternatives and preliminary 30% design documents to be used by WSDOT for cost evaluation and contractor selection. The budget in 2021 includes a negotiated lump sum payment of \$3.2 million to WSDOT to construct the impacted District infrastructure along SR509. The District executed an ILA with WSDOT on May 20, 2020. The overall estimate to complete all SR509 work including the bridge bypass is \$5.5 million.

Staff will amend the budget with updated costs and schedule once the impacts of the project by WSDOT are fully determined.



SR 509 After



PROJECT 18-2 INTERNATIONAL BLVD @ SR-509 ROAD IMPROVEMENTS ESTIMATED PROJECT COSTS

CATEGORY	Pr	ior Years	2020		2021		2022		2023		2024		TOTAL
Engineering - Design	\$	179,166	\$ 40,000			Г						\$	219,166
WSDOT ILA Payment			\$ 55,000	\$	3,206,933	\$	160,333	\$	160,333	\$	160,333	\$	3,742,933
SR 509/Sound Transit TO4 Bridge Bypass			\$ 1,100,000	\$	126,440	Г						\$	1,226,440
Staff Labor and Benefits	\$	15,016	\$ 26,378	\$	30,000	\$	75,000	\$	75,000	\$	40,000	\$	261,394
Miscellaneous / Other	\$	8,222	\$ 7,500	\$	12,000	\$	12,000	\$	5,000	\$	25,000	\$	69,722
Legal	\$	1,557	\$ 2,500	\$	2,500	\$						\$	6,557
TOTAL	\$	203,961	\$ 1,231,378	\$	3,377,873	\$	247,333	\$	240,333	\$	225,333	\$	5,526,212

FUNDING FOR PROJECT									
CATEGORY	Pri	or Years	2020	2021	2022	2023	202	24	TOTAL
Rates/Reserves	\$	203,961	\$ 1,231,378	\$ 3,377,873	\$ 247,333	\$ 240,333	\$ 22	25,333	\$ 5,526,21
									\$
TOTAL	\$	203,961	\$ 1,231,378	\$3,377,873	\$247,333	\$ 240, 333	\$ 22	5,333	\$5,526,21

ESTIMATED SCHEDULE FOR PROJECT COMPLETION							
Description Date							
30% RFP Documents Complete	May 2020						
WSDOT RFP Advertisment	June 2020						
WSDOT Contractor Selection	December 2020						
WSDOT Contractor Retention	February 2021						
Begin Construction	TBD						
Project Final Completion	2024						

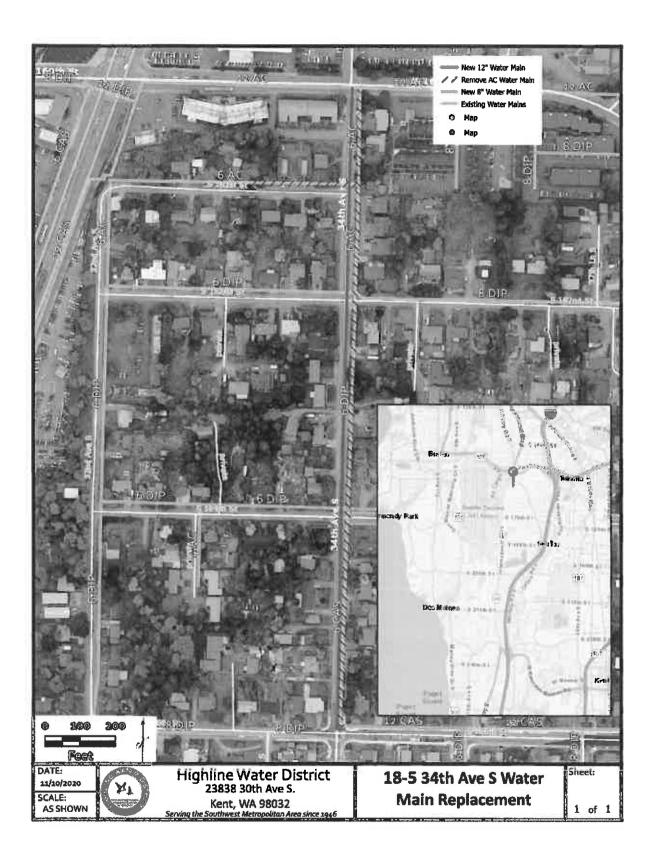
Project 18-5 34th Ave S Water Main Replacement

In August 2018, the City of SeaTac informed the District of their plans to improve the road along 34th Ave S from S 160th St to S 166th St. The City plans to install curb, gutter, sidewalk, new storm drainage and add on-street parking. The City will also overlay the road upon completion. Construction was originally scheduled for spring 2020 but was delayed due to Covid and ROW acquisition.

The District maintains approximately 1,850 LF of 6-inch AC water main within this section of road. The existing main conflicts with the City's improvements. The project includes replacing the existing main with a new 12-inch diameter DI pipe and connect an existing 12-inch main on each end of the project limits, thereby eliminating a bottleneck. In addition, by replacing this main, the District would eliminate additional aging AC pipes, prevent the need to disturb the newly constructed road, and avoid the cost of an overlay at the District's expense.

The District selected Parametrix, Inc. as the firm to design the water project. Parametrix was also selected by the City to design the road improvements. The City agreed to allow the District to partner on the project. The District work will be a separate schedule on the City contract and will enter into an ILA with the City. Design is complete and construction should begin early 2021 construction.

For the 2021 budget, the District allocated \$835,000 for construction and other allied costs. The total project cost is estimated at \$885,000. Highline will fund the project by existing rates and capital reserves.



PROJECT 18-5 34th AVE S WATER MAIN REPLACEMENT ESTIMATED PROJECT COSTS

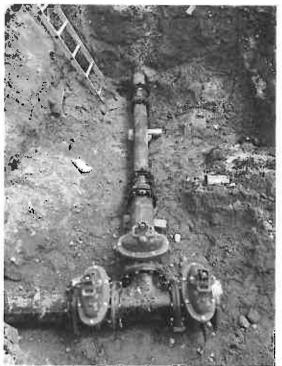
CATEGORY	Pri	or Years	2020	2021	TOTAL
Engineering - Design	\$	21,980	\$ 18,000	\$ 12,020	\$ 52,000
Construction	\$	-		\$ 710,000	\$ 710,000
Construction Administration (City)	\$	-	\$ 	\$ 71,000	\$ 71,000
Staff Labor and Benefits	\$	1,667	\$ 5,000	\$ 35,000	\$ 41,667
Miscellaneous / Other	\$			\$ 5,000	\$ 5,000
Legal			\$ _	\$ 3,000	\$ 3,000
TOTAL	\$	23,647	\$ 23,000	\$ 836,020	\$ 882,667

FUNDING FOR PROJECT			_	 	
CATEGORY	Pri	or Years	2020	2021	TOTAL
Rates/Reserves	\$	23,647	\$ 23,000	\$ 836,020	\$ 882,667
					\$ -
TOTAL	\$	23,647	\$ 23,000	\$ 836,020	\$ 882,667

ESTIMATED SCHEDULE FOR PROJECT COMPLETION					
Description	Date				
Design Engineering (Complete)	December 2020				
Award Construction Contract (SeaTac)	March 2021				
Begin Construction	May 2021				
Project Final Completion	October 2021				

Project 19-1 2019 AC Water Main Replacement

Highline Water District conducts an annual asbestos cement (AC) water main replacement with the goal of eliminating the aging mains over the next few decades. Each year the District identifies a project based on mitigating factors (for example: main repairs, leaks, partnering projects with other agencies, etc.) and prioritizes replacement projects. In 2019, the District selected areas on and around North Hill within the City of Des Moines.



The District owns and operates many small diameter AC water mains on North Hill. On June 12, 2018. Highline experienced a break in a 4-inch AC main on 3rd Ave S and S 214th St. Six homes were damaged. and several properties required extensive restoration. The District decided to replace these aging mains.

Project 19-1 is the first of several future main replacement projects with the goal to replace all aging small diameter AC mains on North Hill. The project will focus on the relatively higher pressure and steeper grade locations. All AC mains on the steep portion south of S 208th St between Marine View Dr. and Des Moines Memorial Drive will be replaced. In addition, the project will upgrade pipes in the higher-pressure areas along 1st Ave S and 2nd Ave S between S 200th St and S 208th St and along 9th Ave S and 10th Ave S, north of S 208th St. At the

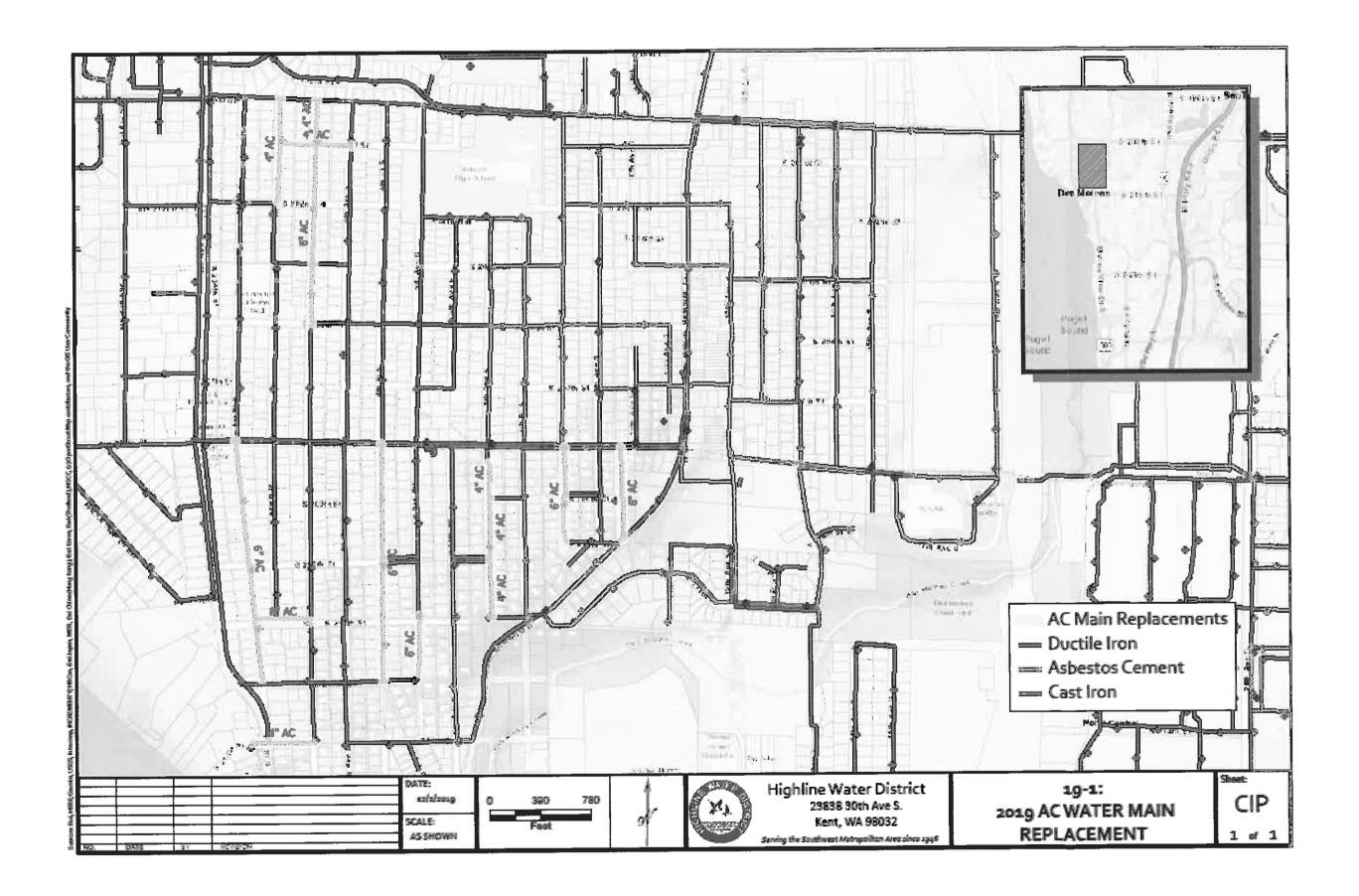
completion of the project, approximately 12,000 LF of AC will be replaced with ductile iron.

The City of Des Moines approached the District to partner for road restoration work in same the general area of Project 19-1. The City desires to repave several roads along the same alignment as some main replacement. The District executed and ILA with the City in November 2019. In addition, Midway Sewer District plans to replace approximately 930 LF of sewer main on 1st Pl S as part of the work.

The District advertised and awarded the project to KarVel Construction on March 3, 2020. Construction began in May and anticipated for completion early

spring 2021.

The estimated project cost for Project 19-1 is \$4.5 million, including approximately \$1.0 million in reimbursements from Des Moines and Midway Sewer. The District will fund their portion of the project by existing rates and capital reserves.



PROJECT 19-1 2019 AC WATER MAIN REPLACEMENT (NORTH HILL) ESTIMATED PROJECT COSTS

CATEGORY	2019	2020	2021	TOTAL
Engineering - Design/Const Admin	\$ 213,070	\$ 56,113	\$ 60,000	\$ 329,183
Construction		\$ 1,922,305	\$ 2,101,922	\$ 4,024,227
Staff Labor and Benefits	\$ 10,144	\$ 75,000	\$ 45,000	\$ 130,143
Miscellaneous / Other	\$ 222	\$ 2,563	\$ 2,500	\$ 5,285
Legal	\$ 813	\$ 1,500	\$ 1,000	\$ 3,313
TOTAL	\$ 224,248	\$ 2,057,480	\$ 2,210,422	\$ 4,492,150

FUNDING FOR PROJECT				
CATEGORY	2019	2020	2021	TOTAL
Rates/Reserves	\$ 224,248	\$ 1,664,960	\$ 1,654,515	\$ 3,543,723
Des Moines/Midway Sewer Reimb.		\$ 392,520	\$ 555,907	\$ 948,427
TOTAL	\$ 224,248	\$ 2,057,480	\$ 2,210,422	\$ 4,492,150

ESTIMATED SCHEDULE FOR PROJECT COMPLETION					
Description	Date				
Design Engineering (Complete)	January 2020				
Award Construction Contract	March 2020				
Begin Construction	April 2020				
Project Final Completion	May 2021				

Project 19-2 2020 Water Main Replacement (Manhattan CI Replacement)



Highline Water District maintains several small diameter cast iron (CI) water mains in the general location of 2nd Place SW between SW 171st St and SW 176th St in the Maple Lane subdivision of Normandy Park. Typically, CI mains are not the District's highest priority for replacement; however, these unlined, 6-inch diameter pipes were constructed in the late 1950's by the Normandy Park Water Company. Over the years, the inside of unlined pipe corrodes and the buildup of rust deposits (tubercles) causes flow restrictions and water quality issues. This area is one of the few locations of record where the District has unlined, cast iron pipes still in service.

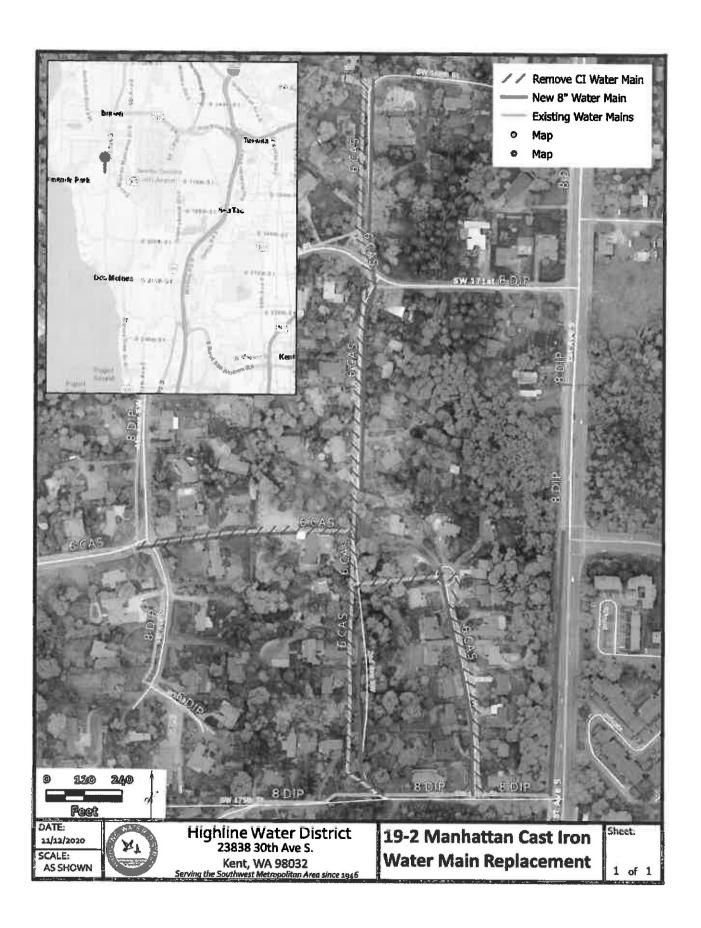
Most of these pipes are within easements in undeveloped, sensitive areas with limited valving and redundancy. One pipe crosses under a seasonal stream tributary to Miller Creek. Many pipes cross private property under steep banks, trees or retaining walls. The District experienced previous ruptures and the location complicates repairs due to limited access.

The total footage of pipe requiring replacement is approximately 5,400 LF. Due to complexity of access, the District must first study alternatives to determine the most feasible method replace the main. Solutions may include trenchless technologies, like pipe bursting or directional drilling, or more traditional open cut methods.

In 2020, the District began the planning effort. The District selected Carollo Engineers to perform the alternative analysis. They completed their work in early summer and provided several recommendations for design concepts.

Due to Covid related concerns, the addition of two unscheduled city projects to the CIP, and the goal of not raising water rates in 2021, the District will delay the design and construction efforts of the project to 2022 and beyond. Future budgets will include approximately \$1.7 million for design, construction and other expenditures in 2022 and 2023. A detailed budget will be prepared in subsequent years.





Project 20-1 Star Lake Military Road Water Main Replacement

Highline Water District owns an existing 12-inch cast-iron water main from S 272nd St to Star Lake Road along the west side of Interstate 5. The main is primarily on private property within easements granted to the District.

The proposed Sound Transit Link Light Rail Federal Way Extension conflicts with the existing main and will limit future access. Sound Transit did not include this work as part of their original DB Contract and requested the District to evaluate and propose acceptable alternatives to address the removal of this main.

The District determined the feasible and equitable replacement would be to install a new water main along Star Lake Road from S 272nd St to an existing main serving Club Palisades Apartments and to install a main along Star Lake Road/Military Road near the I5 undercrossing. The total length of the project is approximately 1,450 LF and will be constructed with 12-inch DI pipe. Sound Transit requested the District design and construct the work on their behalf and would reimburse the expenses.

Pace Engineers designed the replacement work. The project is currently designed and permitted awaiting authorization by Sound Transit to proceed. Construction is scheduled in early 2021. The estimated cost is \$676,000, including \$50,000 budgeted for District requested betterments. The remaining cost (\$626,000) will be reimbursed by Sound Transit. Work should be complete by Summer 2021.

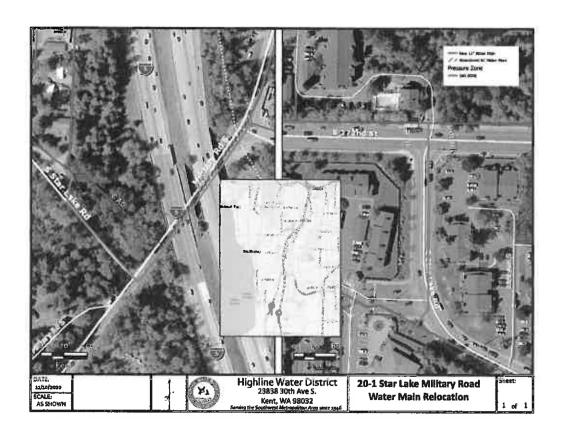
PROJECT 20-1 STAR LAKE/MILITARY ROAD S WATER MAIN REPLACEMENT ESTIMATED PROJECT COSTS

CATEGORY	2020		2021		TOTAL	
Engineering - Design/Const. Admin	\$	65,000	\$	15,000	\$	80,000
Construction			\$	475,000	\$	475,000
Staff Labor and Benefits	\$	4,500	\$	20,000	\$	24,500
Betterments* (if required)		_	\$	50,000	\$	50,000
Miscellaneous / Other	\$	1,500	\$	45,000	\$	46,500
Legal					\$	-
TOTAL	\$	71,000	\$	605,000	\$	676,000

FUNDING FOR PROJECT						
CATEGORY		2020		2021		TOTAL
Sound Transit Reimbursement	\$	71,000	\$	555,000	\$	626,000
Rates and Reserves			\$	50,000	\$	50,000
TOTAL	\$	71,000	\$	605,000	\$	676,000

^{*}Betterments are District enhancements that not eligible for reimbursement by Sound Transit

ESTIMATED SCHEDULE FOR PROJECT COMPLETION							
Description	Month	Year					
Design Engineering (Complete)	October	2020					
Award Construction Contract	January	2021					



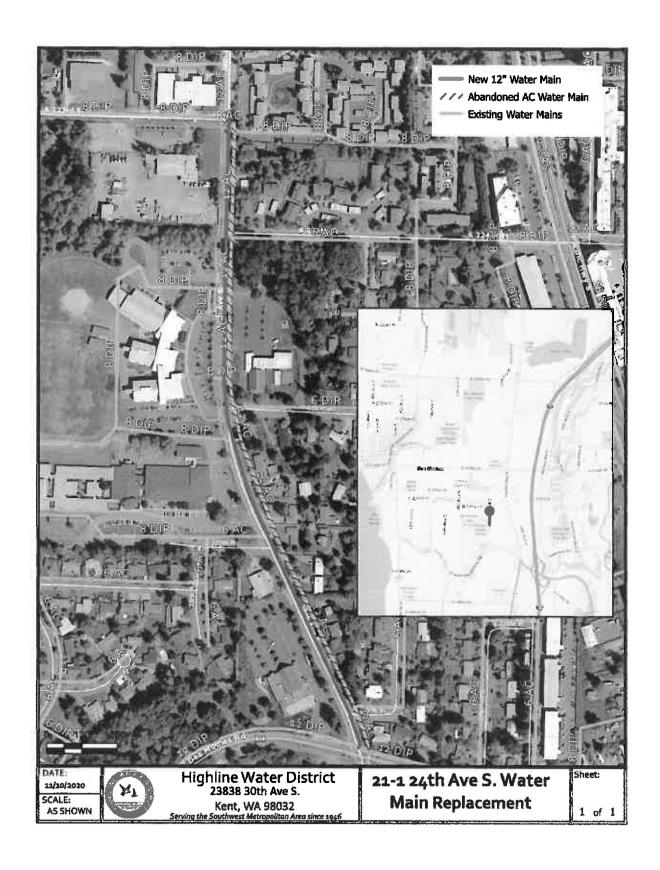
Project 21-1 24th Ave S Water Main Replacement (2022 AC Replacement Project)

The City of Des Moines informed the District that it proposes roadway improvements along 24th Ave S from S 223rd Street to Kent-Des Moines Road. The City plans to widen the road, install sidewalks and storm improvements on the east side of 24th Ave S. The proposed City schedule is for design and ROW acquisition in 2021 and construction beginning in early 2022.

The District maintains an existing 10-inch AC watermain along the section of road. The water main conflicts with the proposed road improvements. The District must relocate the main in accordance with the terms of the franchise agreement with the City. The proposed water work will include approximately 2,500 LF of 12-inch DI water main along with new hydrants and services.

The 2021 and 2022 budgets include \$85,000 and \$995,750 for design and construction, respectively. A more precise cost estimate will be prepared after discussion of the full scope with the City and prior to the 2022 budget preparation.

The City selected Parametrix as the design consultant and the District plans to piggyback and use the same consultant for the water design. The two agencies will negotiate and enter an Interlocal Agreement in 2021. The District will fund the project though existing water rates and capital reserves.



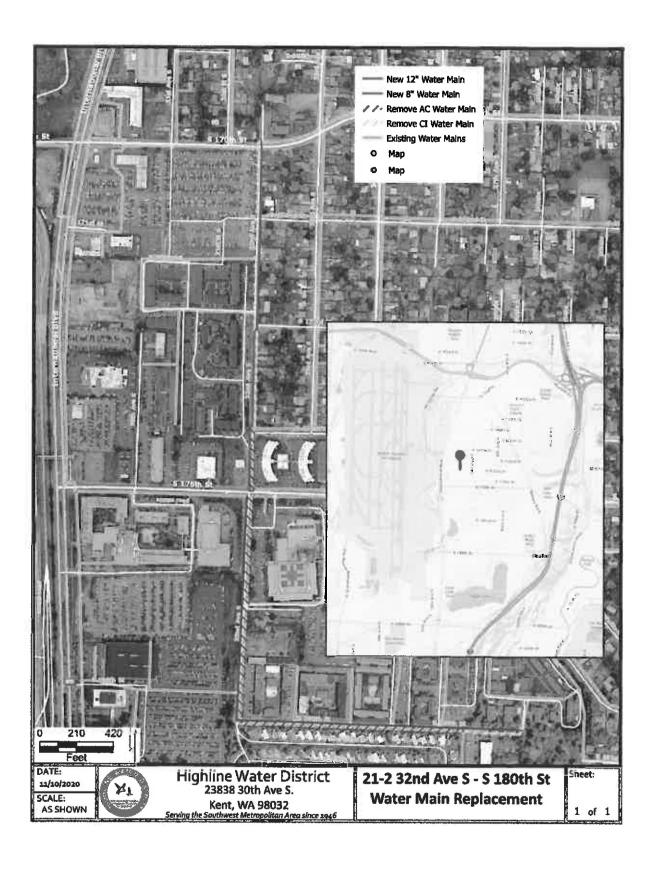
Project 21-2 32nd Ave S – S 180th St Water Main Replacement (City of SeaTac)

In late summer 2020, the City of SeaTac informed the District of an upcoming road improvement project scheduled for design and construction in the next two years. The project has two parts: roadway reconstruction and replacement of curb, gutter and sidewalk improvements along 32nd Ave S from S 170th St to S 176th St; and pedestrian improvements along 32nd Ave S from S 176th St to S 180th St and along S 180th St to the Bow Lake Trailer Park. The project is part of the City Council's goal to improve multimodal transportation within the City.

The District operates approximately 5,000 LF of various sized water mains throughout the corridor. The mains are either cast iron or AC and may prove beneficial for the District to replace the mains as part of the City's work. It is unclear of the magnitude of direct conflicts with District infrastructure as the City has only recently begun the planning and design stage. During the preparation of the budget, the City provided a limited description of their overall project scope. There is possibility of a reduction in the scope for the District work depending on the City's design.

For the 2021 budget, the District assumed all water mains within the project limits require replacement. The budget includes \$115,800 and \$2,102,550 for the costs of design and construction in the 2021 and 2022, respectively. A more detailed budget will be included as part of the 2022 budget preparation.

The District would require consultant selection in early 2021 to achieve the City's schedule. The project will be funded by existing water rates and reserves.



Project 21-3 Mansion Hill 2.5MG Reservoir Int./Ext. Recoat and Safety Improvements

The District will complete the Sound Transit improvements at the Mansion Hill tank site in 2021. The previous work included completion of the new, 4.5 MG reservoir and Pump Station No 9. The next phase of work will include retrofitting the existing 2.5 MG 490 Zone ground reservoir.

The existing 2.5MG reservoir was constructed in 1959. The tank was last coated in 2002 and the coatings are nearing the end of their useful life. The base layer of the exterior contains lead and has been top coated several times in the past. The recoating effort will require a complete removal of the exterior with lead abatement and surface preparation for a full recoat on the interior and exterior. The exterior color will match the new 4.5 MG reservoir.





In addition to the recoating, the District would benefit by installing safety and security improvements to the tank. The scope includes installing stairs to replace the existing ladder and safety cage to meet current safety regulations and installing a handrail around the perimeter roof. These measures will improve safety for District personnel.

The District budgeted \$75,000 for design in 2021 and \$2.05 million for construction in 2022. The project will be funded by existing water rates and capital reserves.

SMALL WORKS / EMERGENCY PROJECTS

The Small Works / Emergency Projects budget is an allocation of funds 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 2021, the District 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 2016 Comprehensive Water System Plan, the following needs were assessed:

1. <u>Source/Treatment:</u> The District's contract with SPU satisfactorily addresses source of supply needs through 2060.

The District will continue to explore the feasibility of purchasing water from Lakehaven Water and Sewer District (LWSD). LWSD is a stakeholder in the Tacoma Public Utilities filtration plant that became operational in 2015. LWSD has approximately 2.0 MGD excess water supply available for purchase. The District selected Carollo Engineers to study the potential source in 2020. Their report should be complete first quarter of 2021.

The District plans to add backup power generation at the Angle Lake Well and Des Moines Treatment Plant/Pump Station 2 site. The work will be identified as a future CIP.

- 2. <u>Storage</u>: There are no significant short-term storage deficits. The City of Tukwila and KCWD 54 expressed interest in purchasing or leasing additional storage from Highline.
- 3. <u>Distribution System</u>: 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 2020 but subsequently delayed due to the required Vulnerability Assessment and Emergency Response Plan updates as required by EPA.

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 continue to 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 work with Cities to replace water mains in consort with City projects to reduce costs. Future budgets include allocation of funds for this effort.

The District will explore the feasibility of changing the 560 Pressure Zone into a 600 Pressure Zone. The effort will increase lower pressures around Mansion Hill, eliminate some aging infrastructure and improve reliability and redundancy. The District will proceed with a feasibility study in the next few years.

The District will allow look at adding pressure monitoring to existing PRV stations to provide for real time monitoring through SCADA of pressure zones. This effort will help assist staff monitor the system in the event of pressure fluctuations or surge and during a main failure event.

MITIGATION IMPROVEMENTS FOR 2021

The District allocates funding for improvements to District facilities to ward against man-made and natural disasters. Improvements include security cameras and technologies, fencing, security software, access control devices and other types of security improvements. The budget for 2021 includes \$40,000 for mitigation improvements.

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 pipes, meters, hydrants and/or water services. For example, the budget would fund a small water main replacement project by District crews. The costs are 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 2021, the budget includes \$500,000 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. Please see the **2021 Goals and Objectives** document for more specific information on specific goals by the field crews for capital improvements.

Agenda Item No.: _

5.2

Agenda Date:

12/16/20

Reviewed By:

12()

Subject: Adopt 2021 Capital Improvement Program

CATEGORY			
Executive			
Administrative			
Engineering/Operations	x		

FINANCIAL					
Expenditures?	Yes No N/A				
Budgeted?	Yes No N/A				
	Amount: \$				
	Plus WSST				

ATTACHMENTS:

- 1. Resolution #20-12-16B
- 2. Exhibit A 2021 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).

Revised: 3/10/2010

Staff recommends approval of this resolution.