# HIGHLINE WATER DISTRICT King County, Washington

# **RESOLUTION 21-12-15B**

# RESOLUTION ADOPTING THE 2022 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:

Kathleen Quong-Vermeire, Commissioner

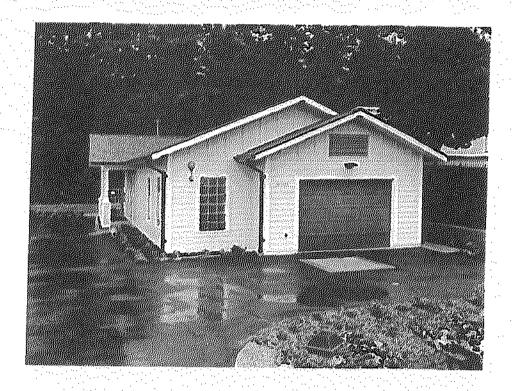
The Board of Commissioners hereby adopts the 2022 Capital Improvement Program, attached as Exhibit A, and incorporated herein by this reference.

ADOPTED BY THE BOARD OF COMMISSIONERS of Highline Water District, King County, Washington, at an open public meeting held this 15th day of December 2021.

Deculipmed by: BOARD OF CC	) mmissioners
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Todd Fultz, President	Polly Daigle, Secretary
Paniel Johnson	Vince koester
Daniel Johnson, Commissioner	Vince Koester, Commissioner
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**EXHIBIT A** 



# 2022 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.

By the close of 2021, the District will be substantially complete with three capital projects: Project 16-1 George Landon Pump Station; Project 16-6 Mansion Hill Pump Station; and Project 19-1 North Hill Water Main Replacement. The proposed 2022 CIP includes ten identified projects in various phases of planning, design, and construction. Two of these projects will be postponed until a subsequent year CIP due to availability and other related factors. The 2022 projects include:

- Project 18-2 International Blvd S at SR 509 Road Improvements
- Project 18-5 34th Ave S Water Main Replacement
- Project 19-2 Manhattan Cast Iron Water Main 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 32<sup>nd</sup> Ave S Water Main Replacement (City of SeaTac)
- Project 21-3 Mansion Hill 2.5MG Reservoir Int./Ext. Recoat and Safety Improvements\*\*
- Project 22-1 King County Lake to Sound Trail Relocation
- Project 22-2 2023 AC Water Main Replacement (Huntington Park)
- Project 22-3 SR509 Phase 2 Water Main Relocation
  - \* Project 19-2 design delayed until 2024 and will be reassigned a new Project number

\*\* Project 21-3 will have construction delayed until 2023

The estimated Total Capital Additions (expenditures) for 2021 is \$12.1 million, including an estimated \$2.7 million reimbursement from Sound Transit to accommodate the Federal Way Link Light Rail Extension (FWLE) and from other outside sources. Debt service for 2021 was \$585,000.

For 2022, the Total Capital Additions is estimated at \$6.0 million. The District will fund the CIP through a combination of water rates, capital reserves, development connection charges and partner agency reimbursements. The effective Capital Additions based on District contributions (rates, connection charges and capital reserves) is \$5.7 million. The remaining funding is from Sound Transit for the FWLE and other agency reimbursements. Debt service reduces to \$490,000 in 2022, 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.

# CAPITAL PROJECTS

Prior

George Landon Pump Station (PSB)

# 2022 CIP - OUTSTANDING FUNDING & DEBT SERVICE (2021-2025)

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## 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 2021 is \$300,000 and \$500,000 for the proposed 2022 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 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 and/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.
- Staff completes the necessary closeout paperwork.

## 2022 Capital Addition Budget

For 2022, the District's anticipated Capital Addition Budget is \$6.0 million. The figure includes budget to support the five Capital Addition components. The District will fund the 2022 CIP through water rates, capital reserves, connection charges, and developer reimbursements. Of the Capital Addition Budget, the District's contribution is approximately \$5.7 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.

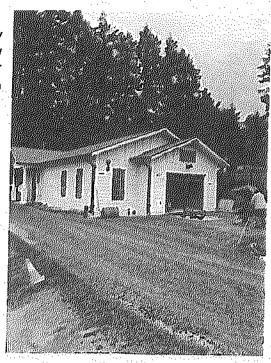
Please see Page 4 for a breakdown of the overall capital additions and funding sources.

### 2021 COMPLETED CAPITAL PROJECTS

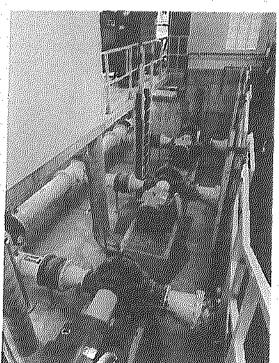
Project 16-2 George Landon Pump Station (PS8)
Highline Water District's majority storage facility serving the 560 Pressure Zone is the 7.6 MG Crestview Reservoir. Water stored in Crestview or source water from Seattle Public Utilities must pump through Pump Station 6 (PS6) to enter the 560 zone.

The 2016 Comprehensive Water System Plan identified the need for a second pump station to improve redundancy and resiliency serving the 560 zone from SPU and Crestview. 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 and siting the station in early 2016. The District selected the property located at 16032 42nd Ave S to site the station. The property housed an existing derelict structure in foreclosure. The District closed the sale in November 2016 and subsequently demolished the structure in early 2017.



RH2's station design included 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 included the capability to discharge into a 600 Pressure Zone if 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.

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.

The District advertised and awarded the project to McClure and Sons, Inc. Work was combined with Project 16-6 Mansion Hill Pump Station for one contractor to construct both projects. Construction began in early 2020 and was impacted by Covid and supply chain related delays. The project will be substantially complete by the end of 2021.

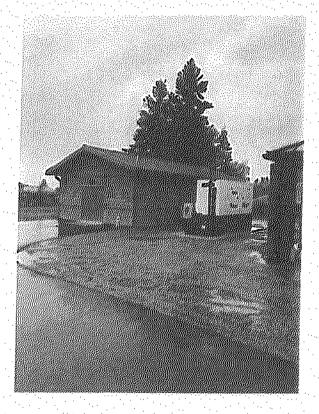
The total project cost, including property acquisition, design, construction, and administration, is estimated at \$6.4 million. The project was funded by existing water rates and capital reserves.

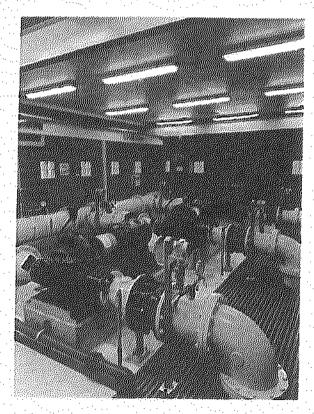
# Project 16-6 Pump Station No 9 (Mansion Hill Pump Station)

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

The District determined there would be significant economies-of-scale by combining Pump Station 8 and 9 into one construction contract. The District selected RH2 Engineering to design the station. The project advertised in early 2020 and awarded to McClure and Sons as part of the combined construction contract. Construction began July 2020 for both stations and will be substantially complete by the end of 2021.

For Project 16-6, the total project cost was \$2.3 million. Sound Transit reimbursed the District for the pump station costs, less \$140,000 for project improvements considered betterments. The station was designed for the capability to pump into a future 600 Pressure Zone if the District decides to modify the 560 Pressure Zone.



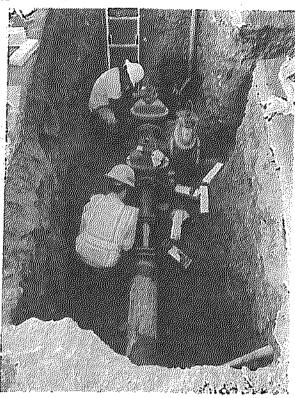


Project 19-1 2019 AC Water Main Replacement

Highline Water District conducts an annual 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 many small diameter AC water mains on North Hill in Des Moines. On June 12, 2018, Highline experienced a break in a 4-inch AC main on 3<sup>rd</sup> Ave S and S 214<sup>th</sup> 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 focused on the relatively higher pressure and steeper grade locations. All AC mains on the steep portion south of S 208th St



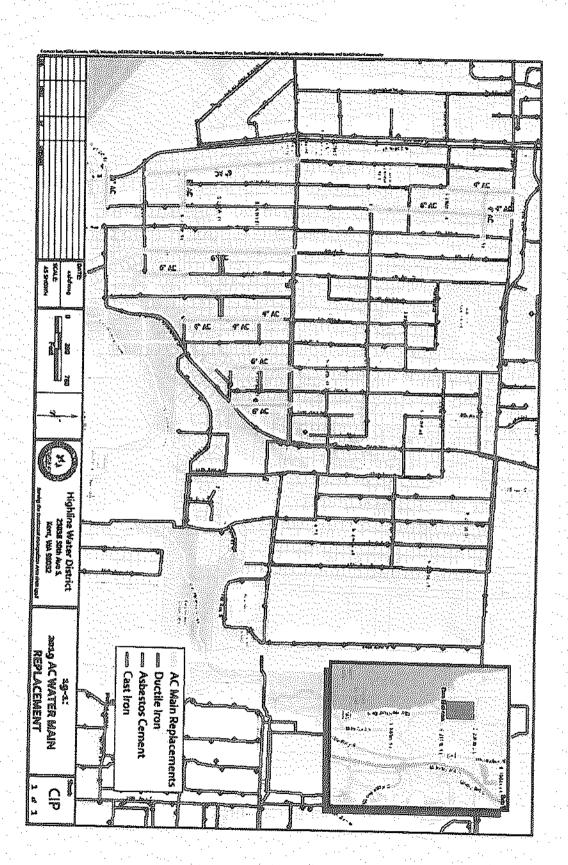
between Marine View Dr. and Des Moines Memorial Drive was replaced. In addition, the project upgraded pipes in the higher-pressure areas along 1st Ave S and 2nd Ave S between S 200th St and S 208th St. At completion of the project, approximately 12,000 LF of AC was replaced with ductile iron.

During design, the City of Des Moines approached the District to partner for road overlay work in same the general area of Project 19-1. The District executed an ILA with the City in November 2019. Additionally, Midway Sewer District desired to replace approximately 930 LF of sewer main on 1st Pl S as part of the work. Highline and Midway entered an ILA in January 2020,

The District advertised and awarded the project to Kar-Vel Construction on March 3, 2020. Construction began in May and was anticipated for completion late 2020. Because of Covid, supply chain, and other related delays, water work will not be complete until the end of 2021. The final overlay of approximately 2,500 LF of road will be finalized in spring 2022 when weather is more conducive for paving.

In August 2021 the District experienced a water main break in a 4-inch AC main along 1st Pt S and S 202nd St. A few days later a second break occurred. The Board of Commissioners declared an emergency authorizing staff to proceed with the replacement of approximately 400LF of 4-inch AC main. Staff added the work to Kar-Vel's contract via change order.

The estimated project cost for Project 19-1 is \$4.6 million, including approximately \$800,000 in reimbursements from Des Moines and Midway Sewer. The District funded their portion of the project by existing rates and capital reserves.



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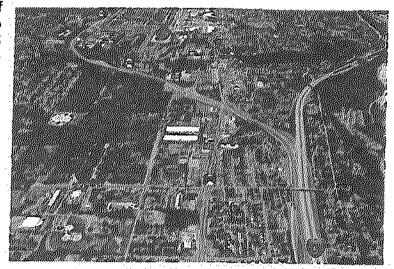
### 2022 CAPITAL PROJECT NARRATIVES

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 2022 include:

# Project 18-2 International Blvd at SR509 Road Improvements (Phase 1B)

The Washington State Department of Transportation (WSDOT) proposes to extend the SRS09 freeway from S 188th St to Interstate 5 as part of the Connecting Washington and the Puget Sound Gateway projects. Phase 1B will be the first section constructed starting from Kent-Des Moines Road and Interstate 5 and stopping at 24th Ave S in SeaTac. Subsequent phases include extending the road from 24th Ave S through the Tyee Golf Course to S 188th St and the existing SR509. WSDOT selected Atkinson Construction to be the Design-Build Contractor for Phase 1B (Interstate 5 to 24th Ave S).



SR 509 After

WSDOT's design of Phase 1B 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.

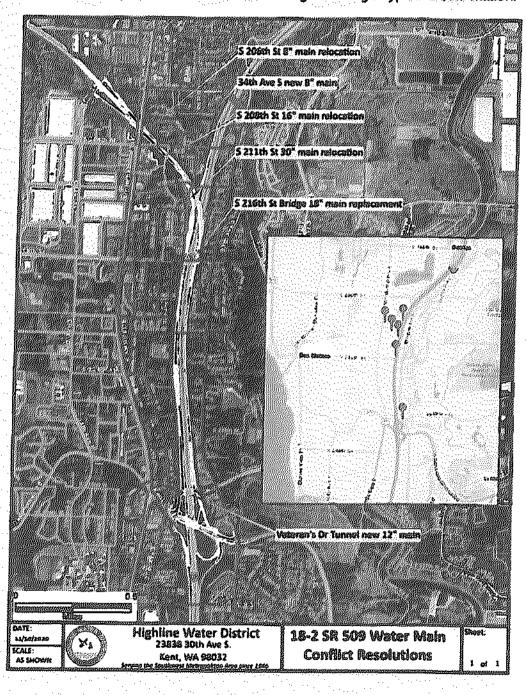
Highline has three water mains in the vicinity of the bridge. The District must relocate their infrastructure in advance of the bridge work and then affix the mains to the bridge after construction. The temporary relocation work was not included in the negotiation between WSDOT and ST.

Project 18-2 includes design and construction of the necessary improvements for the bridge work and crossing at International Blvd and for the other SR509 impacts identified for Phase 1B. 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 of the bypass began late 2020 and was complete in early 2021.

Other impacts to the District's infrastructure for Phase 1B include: relocating the existing 30" transmission main across the new freeway alignment; replacing several mains along \$ 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. At the end of 2021, the project is currently in design by the Design-Build contractor.

The District executed an ILA with WSDOT on May 20, 2020. The ILA included a negotiated lump sum payment to WSDOT for the water work. In 2021, the District paid the lump sum payment of \$3.2 million. The ILA allows for a contingency of up to 15% for WSDOT identified changes. The overall estimate to complete all SR509 work including the bridge bypass is \$5.5 million.



# PROJECT 18-2 INTERNATIONAL BLVD @ SR-SD9 ROAD IMPROVEMENTS ESTIMATED PROJECT COSTS

CATEGORY	Þ	ior Years	Г	2021	Γ	2022		2023	Г	2024	Ţ	TOTAL
Engineering - Design	5	192,475	3	8,700	3	10.000	3	1,000	\$	35.000	\$	247,175
WSDOT ILA Payment	1		\$	3,207,000	5	160,000	ī	160,000	3	160,000	3	3,687,000
SR 509/Sound Transit TO4 Bridge Bypass			ļ	*******	5	1,300,000	_				3	1,300,000
Staff Labor and Benefits	\$	37,D96	ş	15,000	\$	75,000	ſ	75,000	s	25.000	1	227.096
Miscellaneous / Other	\$	14,406	\$	5.000	s	10.000	\$	10.000	\$	10,000	1	49,406
Legal	ı	1,557	\$	-			\$			-	1	1,557
TOTAL	3	245,534	\$	3,235,700	\$	1,555,000	3	246,000	3	230.000		5.512.234

	FUNDING FOR PROJECT	·····					······	
	CATEGORY	Prio	r Voars	2020	2021	2022	2023	TOTAL
••	Rates/Reserves	\$	245,534	\$ 3,235,700	\$ 1,555,000	\$ 246,000	\$ 230,000	\$ 5,512,234
٠								<u>s</u> -
	TOTAL	\$	245,534	\$3,235,700	\$1,555,000	\$ 246,000	\$230,000	\$5,512,234

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	Spring 2022
Project Final Completion	2024

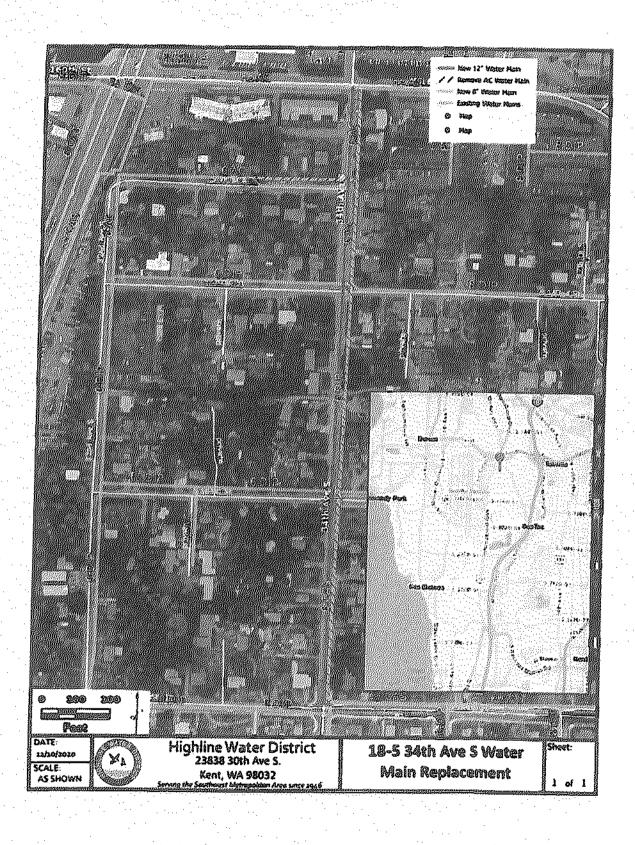
Project 18-5 34th Ave S Water Main Replacement

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 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 to 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 through an ILA that was executed in September 2021. The City advertised and awarded the project to Aila Construction. The bid for the District schedule was \$770,000. Water work will begin Spring 2022.

For the 2022 budget, the District allocated \$1.06 million for design, construction, and other allied costs. Highline will fund the project by existing rates and capital reserves.



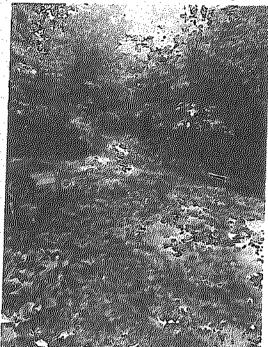
# PROJECT 18-5 34th AVE S WATER MAIN REPLACEMENT ESTIMATED PROJECT COSTS

CATEGORY	Pr	or Years		2021	П	2022	1	TOTAL
Engineering - Design	S	35,192	\$	25,000			5	60.192
Construction	\$	~ :			ī	847,000	5	847,000
Construction Administration (City)	S	-	5	-	3	84,700	5	84,700
Staff Labor and Benefits	5	4,197	\$	7,500	5	45,000	5	56,697
Miscellaneous / Other	\$	+	\$	1,500	s	10,000	\$	11,500
TOTAL	\$	39,389	\$	34,000	\$	986,700	\$	1.060.089

FUNDING FOR PROJECT								
CATEGORY	Pı	rior Years	Γ	2021	r—	2022	F	TOTAL
Rates/Reserves	\$	39,389	\$	34,000	\$	986,700	\$	1,060,089
	1	,,	L				\$	
TOTAL	\$	39,389	\$	34,000	\$	986,700	\$	1,060,089

ESTIMATED SCHEDULE FOR PROJEC	T COMPLETION
Description	Date
Design Engineering (Complete)	December 2020
Award Construction Contract (SeaTac)	August 2021
Begin Construction (Water)	March 2022
Project Final Completion	December 2022

# Project 19-2 2020 Water Main Replacement (Manhattan Cl Replacement)



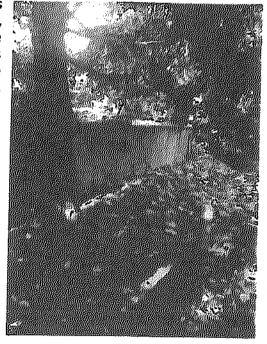
Highline Water District maintains several small diameter cast iron (CI) water mains in the general location of 2<sup>nd</sup> Place SW between SW 171<sup>st</sup> St and SW 176<sup>th</sup> St in the Maple Lane subdivision of Normandy Park. Typically, CI mains are not the District's highest priority 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) potentially 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 are on private property under steep banks, trees or retaining walls. The District experienced previous ruptures and the location complicates repairs due to limited access.

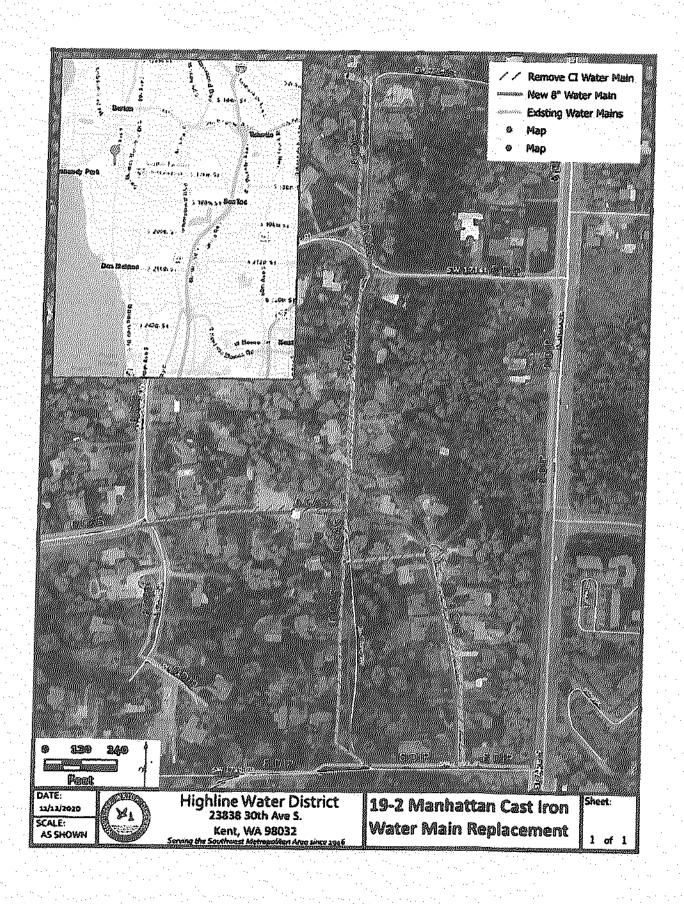
The total footage of pipe requiring replacement is approximately 5,400 LF. Due to complexity of access, the District must first study alternatives to determine the most feasible method replace the main. Solutions may include trenchless technologies, like pipe bursting or directional drilling, or more 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 delayed the design and construction efforts of the project to 2022. Because of several unscheduled projects developing in 2021, including Huntington Park, SR509 Phase 2, and King County Lake to Sound Trail all requiring



replacement work, this project will be delayed to beyond 2023. A detailed budget will be prepared in subsequent years and the project number will be updated to reflect the future CIP.



# Project 20-1 Star Lake Military Road Water Main Replacement

Highline Water District owns an existing 12-inch cast-iron water main from S 272<sup>nd</sup> 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.

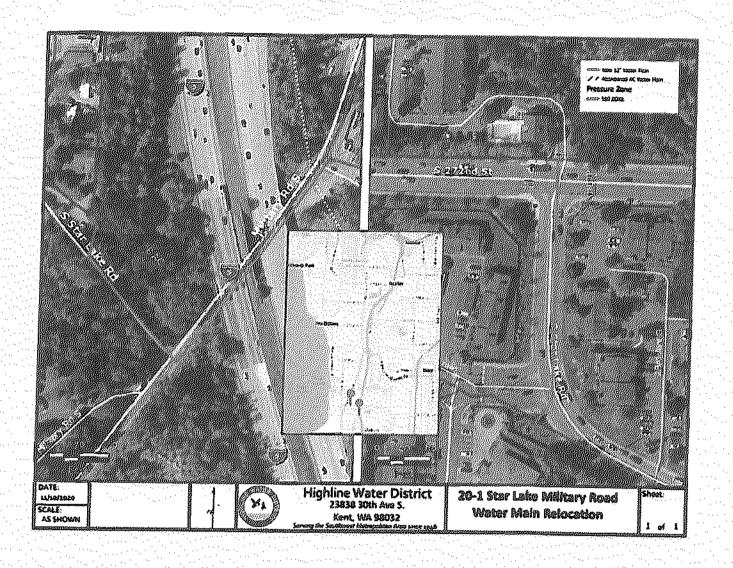
The proposed Sound Transit Link Light Rail Federal Way Extension conflicts with the existing main. Sound Transit did not include this work as part of their original Design-Build Contract and requested the District to evaluate and propose acceptable alternatives to address the removal of this main.

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 15 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 District advertised and rejected all bids for the work due to the low bidder claiming an error in their bid and the subsequent bidders exceeding the authorized budget. Because of the potential damages caused by the delay of the project, the Board of Commissioners declared an emergency exists and authorized staff to proceed with the work waiving competitive bidding requirements. District crews proceeded to perform the replacement work.

The District crews replaced the water main along Star Lake Road and Military Road allowing for the removal of the existing main. The work on Star Lake Road and S 272nd St remains. Crews will complete the work in early 2022 upon approval of a budget amendment with Sound Transit.

The estimated cost of the project is \$935,949, including \$100,000 budgeted for District requested betterments. The remaining cost will be reimbursed by Sound Transit. Work should be complete by Spring 2022.

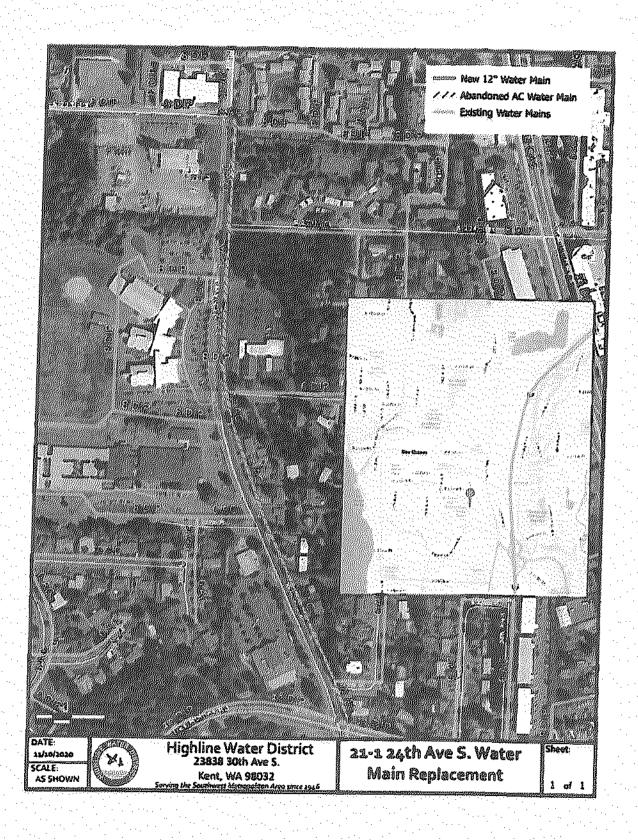


Project 21-1 24th Ave S Water Main Replacement (2022 AC Replacement Project)

The City of Des Moines informed the District that it proposes roadway improvements along 24th Ave S from S 223td 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 2022. The City is in negotiations with other utilities and may cause construction to be postponed into 2023.

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 City selected Parametrix as the design consultant and the District will piggyback for the water design. The two agencies will negotiate and enter an Interlocal Agreement in 2022. The 2022 and 2023 budgets include \$725,000 and \$580,000 for design and construction, respectively. The District will fund the project though existing water rates and capital reserves.



# PROJECT 21-1 24th Ave S WATER MAIN REPLACEMENT ESTIMATED PROJECT COSTS

CATEGORY		2021	Γ	2022	2023	T	TOTAL
Engineering - Design	\$	10,000	\$	65,000		\$	75,000
Construction	\$	-	\$	575,000	\$ 500,000	\$	1,075,000
Construction Administration	\$	-	\$	57,500	\$ 50,000	\$	107,500
Staff Labor and Benefits	\$	1,500	\$	20,000	\$ 25,000	\$	46,500
Miscellaneous / Other	\$	-	\$	5,000	\$ 5,000	\$	10,000
TOTAL	<b>5</b>	71,500	\$	722,500	\$ 580,000	\$	1.314.000

FUNDING FOR PROJECT	·····			· · · · · · · · · · · · · · · · · · ·
CATEGORY	2021	2022	2023	TOTAL
Rates and Reserves	\$ 11,500		\$ 580,000	\$ 1,314,000
TOTAL	\$ 11,500		\$ 580,000	\$ 1,314,000

ESTIMATED SCHEDULE FOR	PROJECT COMPLETION	
Description	Month	Year
Design Engineering (Complete)	March	2022
Award Construction Contract	Summer	2022
Begin Construction	Fall	2022
Project Final Completion	Spring	2023

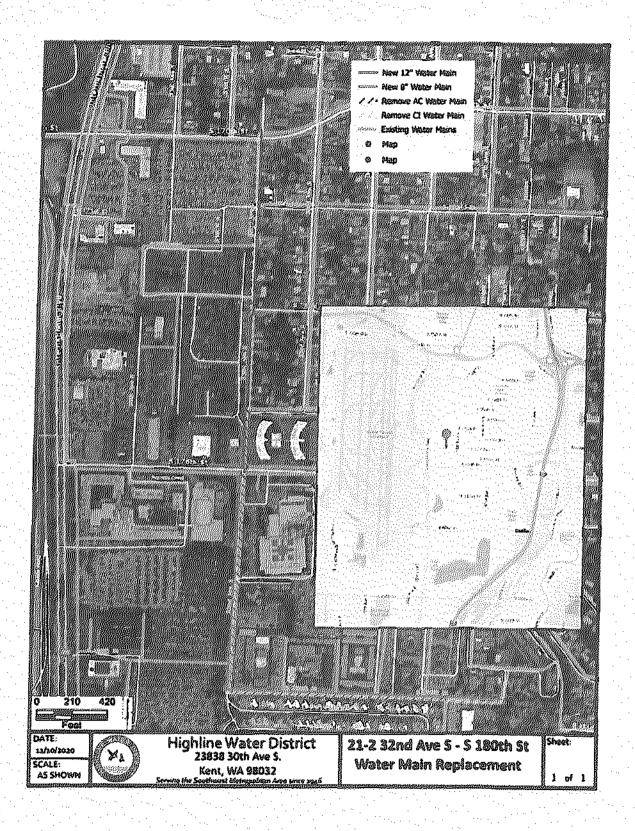
# Project 21-2 32nd Ave S - 5 180th St Water Main Replacement (City of SeaTac)

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 32<sup>nd</sup> Ave S from S 170<sup>th</sup> St to S 176<sup>th</sup> St; and pedestrian improvements along 32<sup>nd</sup> Ave S from S 176<sup>th</sup> St to S 180<sup>th</sup> St and along S 180<sup>th</sup> 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 2022 budget, the District assumed all water mains within the project limits require replacement. The budget includes \$75,000, \$75,000, and \$2,000,000 for the costs of design and construction in the 2022, 2023, and 2024 respectively. A more detailed budget will be prepared prior to construction in 2023.

The District will select a consultant in early 2022 to achieve the City's schedule. The project will be funded by existing water rates and reserves.

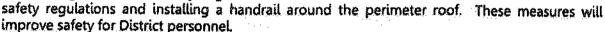


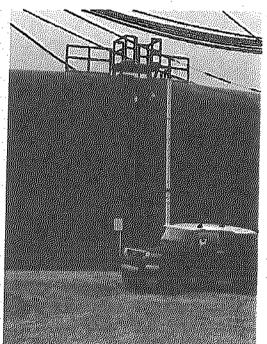
Project 21-3 Mansion Hill 2.5MG Reservoir Int./Ext. Recoat and Safety Improvements

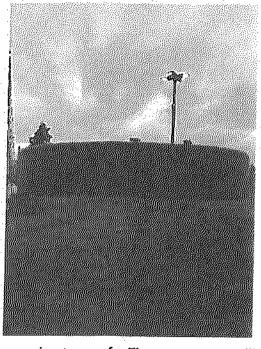
The District completed the Sound Transit improvements at the Mansion Hill tank site in 2021. The previous work included completion of the new, 4.5 MG reservoir and Pump Station No 9. The next phase of work will include retrofitting the existing 2.5 MG 490 Zone ground reservoir.

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







The project was scheduled for construction in 2022. Due to Covid and other impacts, the District will postpone the project until 2023.

The District budgeted \$25,000 for design in 2022 and \$2.6 million for construction in 2023. The project will be funded by existing water rates and capital reserves.

# PROJECT 21-3 MANSION MILL 2.5 MG RESERVOIR INTERIOR/EXTERIOR RECOAT AND SAFETY IMPROVEMENTS ESTIMATED PROJECT COSTS

CATEGORY		2021	2022		2023	Ι	TOTAL
Engineering - Design	\$	75,000	\$ 20,000			5	95,000
Construction				5	2.481,000	s	2,481,000
Construction Administration				\$	148,860	\$	148,860
Staff Labor and Benefits	5	5,500	\$ 5,000	5	15,000	3	25,500
Miscellaneous / Other	\$	1,500	\$ -	\$	5,000	S	6,900
TOTAL	\$	82,000	\$ 25,000	\$	2.649.860	\$	2.756.860

٠.	FUNDING FOR PROJECT		······································	 	 ······································		
	CATEGORY	T	2023	2022	 2023	Γ	TOTAL
	Rates and Reserves	\$	82,000	\$ 25,000	\$ 2,649,860	5	2,756,860
						\$	-
	TOTAL	5	82,000	\$ 25,000	\$ 2,649,860	\$	2,756,860

ESTIMATED SCHEDULE FOR PROJECT COMPLETION						
Description	Month	Year				
Design Engineering (Complete)	October	2022				
Award Construction Contract	January	2023				
Begin Construction	Aprsi	2023				
Project Final Completion	December	2023				

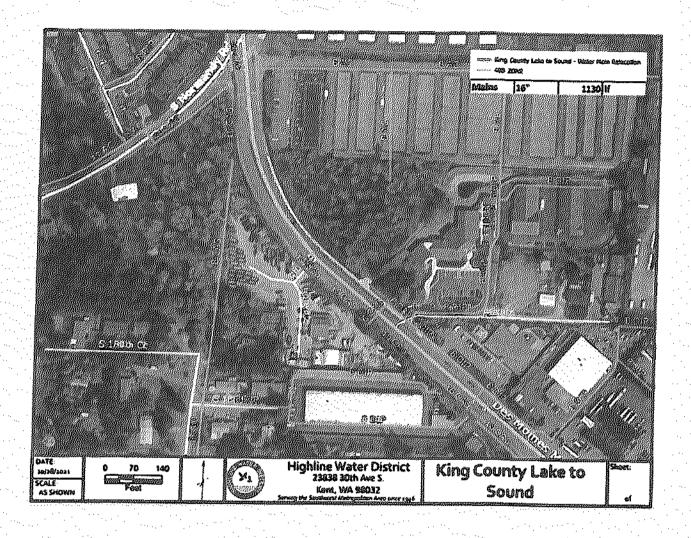
# Project 22-1 King County Lake to Sound Trail Relocation

King County, in partnership with the cities of Burien and SeaTac, plans to construct a new trail from 5 200th St to S Normandy Road and Des Moines Memorial Drive. The trail will connect the Des Moines Creek trail to the regional trail network operated by King County.

In early 2021, the District received notice by the City of Burien to relocate an approximately 1,200 LF of existing 16-inch cast iron water main in conflict with several retaining walls. The proximity of the main prevents the excavation to form the wall foundations.

The District retained Parametrix, the same consultant who is designing the trail, to facilitate design of the relocation. The work will be a bid schedule on the County construction contract. In early 2022, Highline and King County will need to negotiate an ILA to include the work.

The anticipated project cost is \$805,000; however, the full scope of the necessary work is still in development. Work is tentatively scheduled for 2022; however, King County may delay the project until the 2023 construction season. A detailed budget will be prepared prior to construction. The work will be funded by existing rates and capital reserves.



# Project 22-2 2023 Water Main Replacement (Huntington Park)

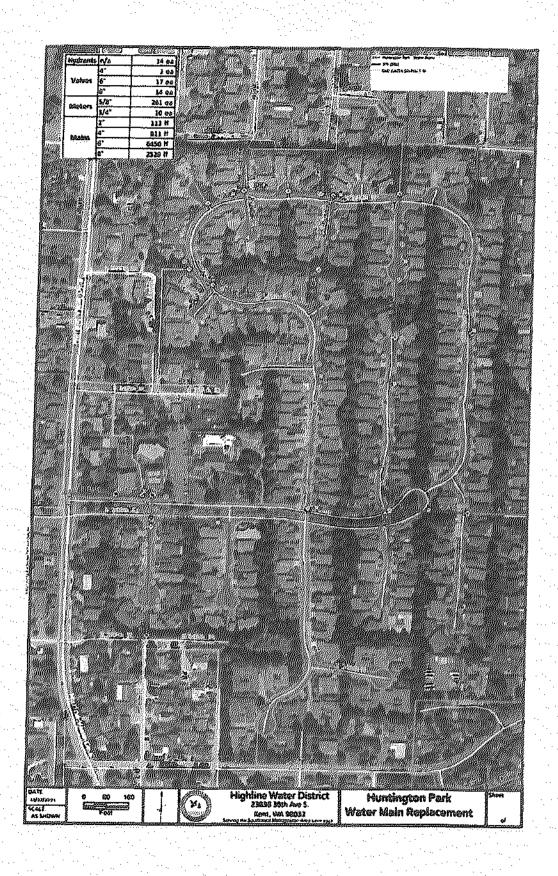
Huntington Park is a private community, condominium-type property located in Des Moines. The Huntington Park Homeowners Association reached out to the District inquiring our intent to replace existing water infrastructure in the future. The Association plans to overlay the existing roads in the next several years.

The District owns and operates several small diameter AC water mains in Huntington Park. Highline inherited these mains when Water District No 56 dissolved and was incorporated into the District. The neighborhood is located on several tax lots and the existing water mains are within inherited easements.

The District has an excellent opportunity to replace the aging infrastructure in partnership with the Homeowner's Association. It allows for updating the existing easements and upgrade the water system with modern materials and construction techniques.

The project includes replacing approximately 10,000 LF of AC mains, including valves, hydrants, and services. Design and easement acquisition would commence in 2022, with construction following in 2023-2024.

Project 22-2 includes \$200,000, \$2,400,000, and \$800,000 for years 2022 and 2023 and 2024, respectively. A detailed budget will be prepared once the project is fully scoped in design. The District will fund the project by rates and capital reserves.



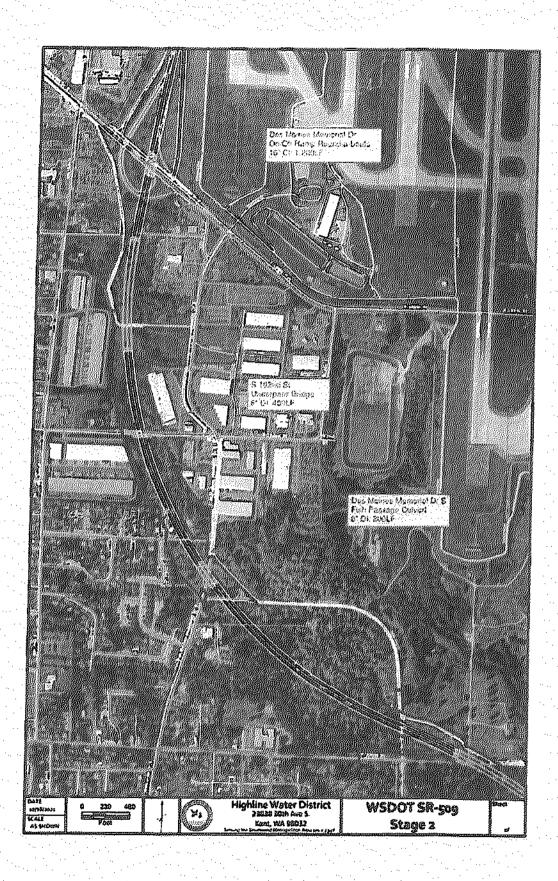
# Project 22-3 SR509 Phase 2 Water Main Relocation

As part of the Connecting Washington and Puget Sound Gateway Project, WSDOT proposes to construct a new tollway connecting Interstate 5 and SR509. Phase 1 (Project 18-2) includes constructing a 4-lane highway between Interstate 5 and 24th Ave S in SeaTac. The second phase (this project) includes completing the freeway from 24th Ave S to Des Moines Memorial Dr and S 188th St where SR509 currently ends.

The District has identified three locations of potential conflict with the new tollway:

- At Des Moines Memorial Drive and S 188th St, WSDOT proposes two onramps/offramps/round-a-bouts that conflict with an existing 16-inch cast-iron water main.
- At S 192<sup>nd</sup> St near Des Moines Memorial Drive, WSDOT will construct a new overpass for the city street, severing an existing 8-inch water main and requiring it to be affixed to the new bridge.
- At Des Moines Memorial Drive near S 196th St, a new stream culvert will require an 8inch water main to be relocated.

The full scope, budget and schedule for the project has yet to be determined. The District included \$25,000 for design services in 2022 and allocated \$1.55M in subsequent years. A full scope and budget will be prepared once additional details are provided by WSDOT.



# 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 2022, 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. Source/Treatment: The District's contract with SPU satisfactorily addresses source of supply needs through 2060. SPU and HWD are discussing amendments to the source contract during the current 20-year renegotiation provision.

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 and their report was complete in 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. Storage: 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 (AMP) 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. We will reevaluate the AMP in a subsequent year.

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.

Another future improvement 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 2022

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 2022 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 2022, the budget includes \$500,000 for the meters, hydrants, and services. The budget includes materials for the replacement of approximately 25 hydrants, 50 water services, and three (3) small water main replacement projects for the field crew. There are several projects identified for the service crews to replace mains for upcoming city projects in 2022. Please see the 2022 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: 12/15/21 Reviewed By: 70
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Subject: Ador	n 2022 Capita	ımprov	/ement Program
CATEGO	DRY		FINANCIAL
Executive  Administrative			Expenditures? Yes No N/A Budgeted? Yes No N/A
Engineering/Opera	tions 🕱		Amount: \$

# ATTACHMENTS:

- 1. Resolution #21-12-15B
- 2. Exhibit A 2022 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.