



23828 30th Avenue South, Kent, Washington
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2020 Annual Report

Executive Summary

Water Sources

Seattle Public Utilities supplied approximately 70% of our water from three metered locations; the remaining 30% was sourced from four District-owned groundwater wells with three treatment facilities. The District supplied approximately 2.3 billion gallons of water in 2020.

System Inventory

Pump Stations	6
Water Storage Facilities	8
Pressure Zones	12
Pressure Reducing Stations	29
Emergency Interties	10
Miles of Water Main (from 2" to 36" diameter).....	> 305
Active Meters*	18,822

*Ranging in size from 5/8" to 8", including one hundred and twelve 3" and larger meters.

Miles of Water Main by Type

Ductile Iron	191.1
Asbestos Cement	65.1
Cast Iron	44.6
Other	4.0

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Operations Overview

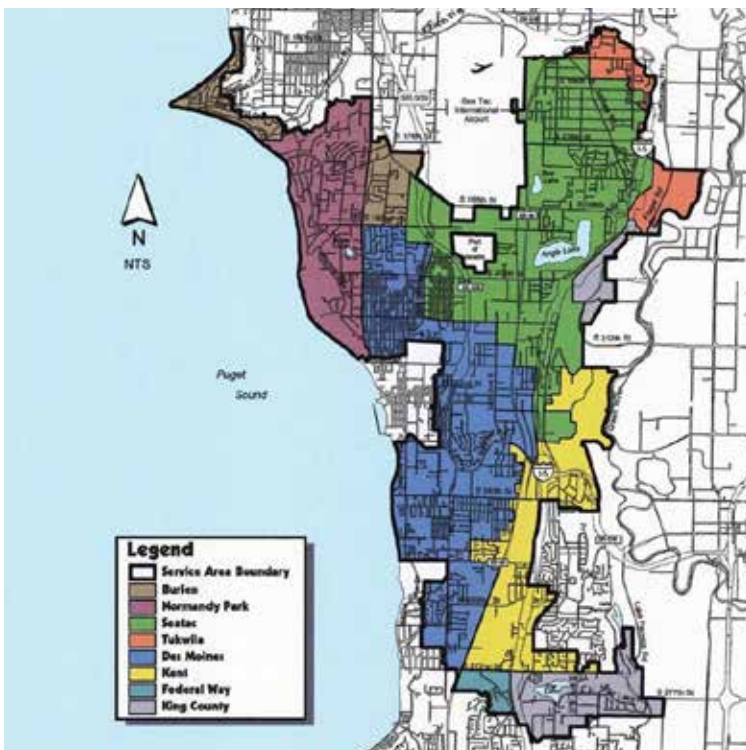
2020 brought unprecedented change for District operations. Covid-19 required Highline to reevaluate existing procedures to ensure continuity of operations while reducing risk of exposure to the public and staff. Changes included limiting public access to the District Headquarters, modifying work schedules, duties, and workspaces to avoid close contact. The District ceased locking delinquent accounts and suspended late fees.

Despite the pandemic, field crews managed to install 74 new or replaced services and performed two water main replacement projects. The District will continue to dynamically respond to the changing situation as Covid evolves into 2021.

Infrastructure Overview

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 related factors. These projects will continue into 2021.

The estimated 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.



Operations: Water Production and Quality

Water Production

The annual goal for water production from the District's four wells was 765,000 CCF; actual production in 2020 was 937,455 CCF, equal to about 700 million gallons. The remaining water was sourced from Seattle Public Utilities, for a total combined water production of 2.3 billion gallons. Unaccounted water loss in 2020 was 8.97%.

Water Sales		
Year	Meters	Billed (CCF)
2016	18,498	2,850,950
2017	18,600	2,869,021
2018	18,750	3,182,752
2019	18,794	2,847,942
2020	18,822	3,152,690

Water Quality

Highline continued to provide high quality water that meets or exceeds applicable state and federal standards for safe drinking water. The 2019 Consumer Confidence Report (CCR) was offered to District consumers in three formats: 1) on our website (as a PDF); 2) by email; or 3) as a printed copy by request. The District sent 12,759 postcards and 18,822 water bill messages outlining methods of obtaining the CCR to customers within the District's service area. The 2020 CCR will be available mid-2021. The 2019 CCR is on our website at:

www.highlinewater.org/media/74147/2019_ccr.pdf

In 2020, the District collected samples for the Unregulated Contaminant Monitoring Rule 4 (UCMR4) as required by the EPA. The UCMR is a program to collect data for contaminants that are suspected to be present in drinking water but do not have health-based standards set under the Safe Drinking Water Act (SDWA). We also tested for Nitrates, Herbicides and Pesticides. All testing was compliant with mandated water quality regulations.

Water Quality Goals

Provide High Quality Water

- Complied with DOH WAC 246-290 monitoring requirements.

- Maintained Cross-Connection Control Program per State and District Standards.

Be Responsive to Customer Needs

Customer concerns regarding water quality remained a priority for our staff. The District's goal is to respond to water quality inquiries within one hour. During 2020, we responded to the following 20 water quality inquiries:

10 Miscellaneous	5 Taste
5 Color	0 Odor

Each of these inquiries prompted a site visit, evaluation by District staff, and follow-up communications to inform our customers of our findings and/or any remedial action taken.

Perform Routine Water Main Flushing and Tank Cleaning

- Flushed 28.7 miles in 2020. The goal is to flush all small diameter distribution mains every five years (59 miles annually).*
- Flushed approximately 425 dead-end mains annually.
- Maintained chlorine residual in the distribution system between 0.20 mg/L and 1.70 mg/L.
- Cleaned and disinfected each of the District's tanks on a 5-year rotating schedule.

**Covid-19 and personnel availability prohibited achieving the annual goal.*

Maintain Water Treatment Goals

- Removed a minimum of 90% iron and manganese at treatment plants.
- Managed tank water levels to maximize water turnover.
- Ensured proper pH, chlorine, and fluoride levels in accordance with regulatory guidelines.
- Maintained Wellhead Protection Plan.

Operations: Preventative Maintenance

Preventative Maintenance Goals

Services

- Installed 25 new, replaced 49, and repaired 81 deficient services in 2020.

Hydrants

- Continued aggressive policy of policing or monitoring hydrant use by third parties to prevent unauthorized or improper use.
- Clean and paint 600 hydrants each year: *completed 526 in 2020.*
- Fire hydrant maintenance: *Replaced 9, repaired 36, relocated 7, installed 3 new hydrants.*
- Continued to monitor hydrants to ensure proper use with District authorization.

Valves

- Operate/maintain approximately 2,200 smaller diameter valves each year (on a 5 year cycle): *completed 2,033 in 2020.*
- Operate/maintain approximately 252 Air/Vacs each year: *completed 55 in 2020.*

Meters

- Replaced 56 large and small diameter meters by work order.
- Continued GPS locating of meters, hydrants and valves for the Geographic Information System (GIS): *completed 595 in 2020.*

Treatment and Pump Stations

- Performed daily facility checks and inspections
- Replace routine wearing parts on annual basis
- Clean backwash tanks and recharge filter vessels annually.

Easements

- Checked 218 out of 1193 District easements for encroachments (on a 5-year cycle) in 2020.

Pressure Reducing Valves (PRV)

- Checked PRV Stations monthly; cleaned annually.
- Rebuilt valves at PRV Stations #13, #27, #28, and #29

Field Crew Water Mains Projects

Main Replacements

- Replaced 476 LF 4" AC with 4" DI along 33rd Avenue S and S 268th Street.
- Replaced 272 LF of 10" AC with 8" DI along S 201st Street between 14th and 15th Avenue S.

Main Crossings for City Overlays

- Installed 8" DI crossing at SW 186th Street & 4th Avenue SW.
- Installed 8" DI crossing at SW 189th Street & 4th Avenue SW.
- Installed 8" DI crossing at Des Moines Memorial Drive & S 204th Street.

Main Installations and Relocations

- City of Normandy Park: installed 273' of 8" DI Main on 1st Avenue S at S 171 Street to prepare for overlay program.
- Relocated 162' 8" DI at 12th Avenue S at S 251st Street for a sewer main project in Des Moines.



Operations: Preventative Maintenance, continued

Breaks, Leaks, Unexpected Shutdowns, and Water Loss

Between 2007 and 2020, the District experienced an average of nine (9) water main breaks per year. During 2020, there were a total of five (5) breaks. These breaks were caused by pipe age, from natural causes like ground settlement or tree roots, or unknown causes. When a water main break occurs, our goal is to have the water service restored within an average of eight hours or less.

Leak Detection and Water Loss

- Keep unaccounted water usage below 10% (as per WSDOH Water Use Efficiency Requirements): our unaccounted-for water was 8.97% in 2020.
- Continue monitoring for unmetered water connections / uses.
- Perform annual leak detection on 98 miles of main line and services (except during summer months): we detected 39.2 miles in 2020.
- District crews prioritize leak detection in mains, services and hydrants with the goal of preventing larger problems and saving water from being wasted.

**One gallon per minute leak
= 525,000 gallons per year**

Parts Inventory

- At the end of 2020, there was a net \$3,201.51 gain in inventory of an overall value of \$895,783.85.

Vehicles and Equipment

- Purchased 2020 Ford F150 Pick-Up (#91).
- Purchased 2021 Ford F750 truck (#99).
- Surplused 2001 Ford F250 4x4 Pick-Up (#30).
- Surplused 2004 Chevrolet Silverado Truck (#64).

Emergency Management and Mitigation

- Replaced Fire alarm panel and monitoring points at the District Headquarters.
- Added new cameras at Star Lake Tank to improve security.
- Upgraded video surveillance recording system at Des Moines Treatment Plant & Tyee.
- Completed the 2020 Vulnerability Assessment per the American Water Infrastructure Act.
- Began update of the Emergency Response Plan (to be completed June 2021)

Safety

Highline Water District had five (5) reportable injuries in 2020. Of those injuries, four (4) resulted in time loss totaling 184 hours on the job. The L&I experience factor was 0.61 for 2020.

Completed Training

- Annual fit tests for Personal Protective Masks.
- Asbestos Pipe Handling.
- Heat Stress First Aid.
- Annual Hearing Testing.
- Confined Space Training.
- Forklift Training.
- Flagger Certification Training.
- Fire Extinguisher Training.

Hazard/Safety Committee Goals

- Develop Tabletop Exercises for training purposes.
- Maintain current Incident Action Plan (IAP) contact information.
- Continue Hazard/Safety Committee meetings.
- Target minimal L&I incidents and no time loss due to on-the-job injuries.
- Hazard/Safety Committee meetings suspended during Covid-19.
- Begin implementation of the recommendations identified in the Vulnerability Assessment.

Operations: Utility Location Requests

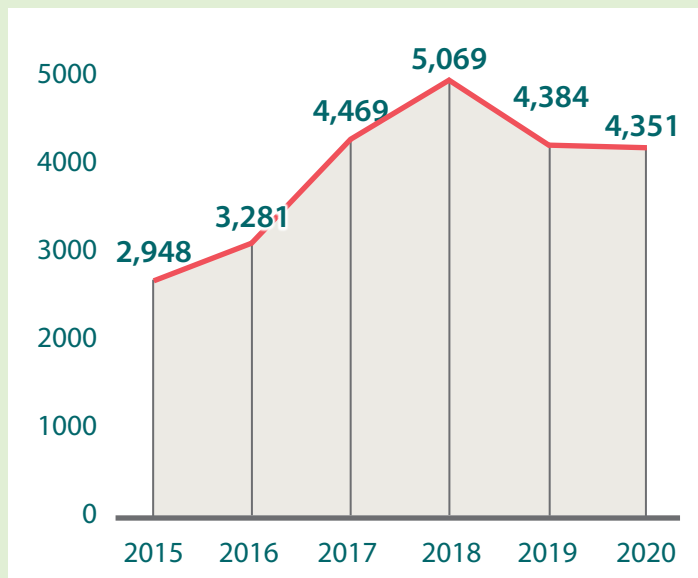


Location requests are an important role in District Operations. Chapter 19.122 RCW outlines the requirements underground utilities must comply to ensure safe excavation around their infrastructure.

The District must respond to locate requests within 2 full business days. Failure to comply with these requests may result in a civil penalty of not more than \$1000 for the initial violation, and not more than \$5000 for each subsequent violation within a three year period.

The District received a total of 4,351 line location requests in 2020; 806 of those requests required a site visit.

Location Requests by Year



Paint Colors Used in Location Requests

Proposed Excavation
Temporary Survey
Electric Power
Gas, Oil, Steam, Petroleum
Communications, Alarm or Signal, Cables or Conduit
Potable Water
Reclaimed Water, Irrigation, Slurry Lines
Sewer and Drain Lines

Location Requests by Type

Mismarked	0
Emergency	209
Real Estate Signs	711
Out of District	319
No Highline Water	561
Other	460
Marked (field visits)	806
Private Property	1,285



Don't Forget to Call!

If you're planning an outdoor project such as a new deck or fence, planting trees and shrubs, installing drainage, removing an old tree stump, or anything that requires you dig 12" or more in depth, be sure to call 811—the Call Before You Dig Hotline—or visit their website at washington811.com.

Per Washington State RCW 19.122, anyone proposing excavation is required to call 811 to inform Utilities to come mark the location of their pipes or lines in order to avoid striking or digging them up. This service is free to homeowners and contractors.

Administrative

2020 brought changes in leadership for the Administrative and Customer Service department. Debbie Prior, Administrative Manager retired in late 2020 after 26 years of service to the District. Anne Paige was hired as the new manager in July.

The District continued with Laserfiche records management software implementation, including the creation of user accounts and security groups. At the end of 2020, staff completed approximately 75% of the Laserfiche integration with the Lucy asset management software.

The Department continues to comply with the Governmental Accounting Standards Board (GASB) and the Washington State Auditor, including:

- Communicate the District’s Ethics policies to staff and Board annually and provide an ethical work environment.
- Create quarterly and year-end financial reports for the Board in a timely manner.
- The District received another clean Audit for 2019.
- Maintain GAAP procedures and internal controls
- Economic Stability: maintain rates < 1% of median household income

Customer Service

During 2020, Customer Service staff answered over 20,000 phone calls, and our Field Staff went out on approximately 2,000 field calls to assist customers with various questions.

Customers continue to utilize the District’s online account access. 4,500 have chosen paperless billing, and 4,600 are using the autopay feature.

Billings	2018	2019	2020
Regular Bills	114,000	113,300	113,100
Electronic	18%	19%	19%
Final Bills	1,760	1,640	1,475
Tenant Accounts	1,515	1,500	1,480

COVID-19 Response



On March 16, 2020, the Board of Commissioners passed Resolution 20-3-16A declaring an emergency related to Covid-19, and authorized the General Manager to implement policies and procedures to respond to the virus. The Board suspended late charges and service disconnects for delinquent accounts during the pandemic, and adopted the requirements of the Family First Coronavirus Response Act.

Covid-19 required the District reevaluate existing procedures to ensure continuity of operations while reducing risk of exposure to the public and staff. During the initial pandemic, Management instituted rotating shifts and standby policies to maintain a stable work force in the event of an outbreak in the office. The District also implemented mandatory social distancing and masks for all employees.

All non-essential face-to-face public contact was discontinued during the pandemic. Commissioner meetings were made available by telephone since the public could not attend in-person meetings.

Other Covid responses include:

- Limiting vehicle use to single occupancy only.
- Allow remote Work from home, where available and practical.
- Mandatory temperature checks and sign-ins prior to work shift.
- Canceling large group and nonessential meetings.
- Restrict offsite travel.
- Providing plastic barriers around office spaces and cubicles to limit exposure.
- Installation of customer drop off location for payments .
- Increase periodic sanitation of office spaces and vehicles.

The District will continue to evaluate and respond to the Covid situation as it develops into 2021.

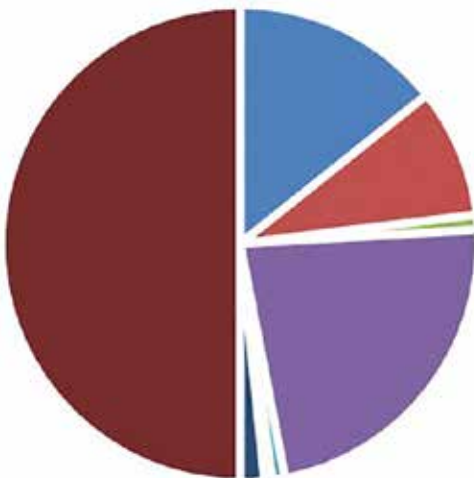
Operations: Financials

2021 Sources of Funds



■ Rates (\$17,435,431)
■ Other Revenues (\$1,853,357)
■ General Facility Charges (\$600,000)
■ Other Funding Sources (\$2,153,414)
■ Reserve Accounts (\$6,876,151)

2021 Uses of Funds



■ Operation & Maintenance (\$8,260,435)
■ Water Supply (\$28,918,353)
■ Debt Service (\$585,024)
■ Capital Projects (\$13,249,880)
■ Meters / Hydrants / Services (\$500,000)
■ Capital Asset Purchases (\$297,330)
■ B&O Tax (\$952,659)

2020 Budget Recap

Sources of Funds	Budget	Actual	% of Budget
Rates	\$ 17,395,436	\$ 16,813,912	96.7%
Other Revenues	2,315,507	1,927,252	83.2%
General Facility Charges	700,000	828,000	118.3%
Other Funding Sources	3,670,067	2,963,592	80.8%
Reserve Accounts	8,370,995	(793,828)	-9.5%
TOTAL SOURCES OF FUNDS	32,452,005	21,738,928	67.0%

Uses of Funds	Budget	Actual	% of Budget
Operations & Maintenance	\$ 7,980,480	8,008,731	100.4%
Water Supply	5,058,686	4,811,731	95.1%
Debt Service	708,087	708,087	100.0%
Capital Projects	16,803,139	6,517,855	38.8%
Meters/ Hydrants/ Services	600,000	581,064	96.8%
Capital Asset Purchases	321,908	224,435	69.7%
B&O Tax	979,705	887,027	90.5%
TOTAL USES OF FUNDS	\$ 32,452,005	21,738,928	67.0%

2021 Board-Approved Budget

Sources of Funds	Budget	% of Budget
Rates	\$ 17,435,431	60.3%
Other Revenues	1,853,357	6.4%
General Facility Charges	600,000	2.1%
Other Funding Sources	2,153,414	7.4%
Reserve Accounts	6,876,151	23.8%
TOTAL SOURCES OF FUNDS	\$ 28,918,353	100.0%

Uses of Funds	Budget	% of Budget
Operations & Maintenance	\$ 8,260,435	28.6%
Water Supply	5,073,025	17.5%
Debt Service	585,024	2.0%
Capital Projects	13,249,880	45.8%
Meters/ Hydrants/ Services	500,000	1.7%
Capital Asset Purchases	297,330	1.0%
B&O Tax	952,659	3.3%
TOTAL USES OF FUNDS	\$ 28,918,353	100%

Infrastructure: 2020 Capital Improvement Projects - Completed



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 District identified the system conflicts and developed several alternatives 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, Project 16-4 became a Developer Extension. 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 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. The District accepted the project as complete in December 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 with Department of Ecology requirements.

The total project cost for Project 16-3 was approximately \$9.4 million. The final construction cost was \$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.



Project#
16-3

Start Date:
2015

Complete:
Q4 2020

Cost:
\$9.4M total construction

Funding:
Sound Transit reimbursement and capital reserves

Design: Stantec

Contractor: Gray and Osborne

Infrastructure: 2020 Capital Improvement Projects - Ongoing

George Landon Pump Station (PS8) and Pump Station No. 9 (PS9) / Mansion Hill Pump Station Combined into one construction project

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 Pump Station 6.

The District selected RH2 Engineering to perform the preliminary engineering services including evaluating local properties. The District selected to site the station at 16032 42nd Avenue S, which housed an existing derelict structure in foreclosure. The District closed the sale in November 2016 and subsequently demolished the structure in early 2017.

The pump station 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.

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 PS8 project to the George Landon Pump Station in honor of Commissioner Landon's long-time service to the District.

For Pump Station 8, the total anticipated project cost is \$6.5 million and funded by existing water rates and capital reserves. At the end of 2020, the project is approximately 30% complete. The project is scheduled for completion summer 2021.

(continued on page 11)



Project#	16-2
Start Date:	Q1 2016
Complete:	Q3 2021
Cost:	\$6.5M total construction
Funding:	Rates / capital reserves
Engineer:	RH2 Engineering
Contractor:	McClure and Sons, Inc.

Infrastructure: 2020 Capital Improvement Projects - Ongoing (continued)

George Landon Pump Station (PS8) and Pump Station No. 9 (PS9) / Mansion Hill Pump Station Combined into one construction project; continued from page 9





George Landon Pump Station (PS8) and Pump Station No. 9 (PS9) / Mansion Hill Pump Station

Combined into one construction project continued from page 9

Meanwhile in 2019, the District began design work for a separate project# 16-6: Pump Station No. 9 (PS9) / Mansion Hill Pump Station.

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. RH2 was contracted to perform the design 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. McClure and Sons, Inc. was hired, and construction for both stations began July 2020.

For Pump Station 9, 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 District anticipates 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.

As of the end of 2020, PS9 was approximately 50% complete with final completion scheduled for spring 2021.

Project#	16-6
Start Date:	Q2 2019
Complete:	Q2 2021
Cost:	\$2.3M total construction
Funding:	Sound Transit reimbursement (less any improvements considered betterments)
Engineer:	RH2 Engineering
Contractor:	McClure and Sons, Inc.

Infrastructure: 2020 Capital Improvement Projects - Ongoing (continued)

George Landon Pump Station (PS8) and Pump Station No. 9 (PS9) / Mansion Hill Pump Station Combined into one construction project; continued from page 9



Infrastructure: 2020 Capital Improvement Projects - Ongoing (continued)

Road Improvements to International Blvd. at SR509

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 selected Atkinson Construction to design and construct the project. The overall project is scheduled for completion by 2024; 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 Boulevard 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. This helped to 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 this 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 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 began in 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 I-5, 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 I-5; and other water improvements near Kent Des Moines Rd. and I-5.

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 District

executed an ILA with WSDOT on May 20, 2020. In 2021, the District will pay a negotiated lump sum payment of \$3.2 million to WSDOT to construct the impacted District infrastructure along SR509. The overall estimate to complete all SR509 work including the bridge bypass is \$5.5 million.

Project#	18-2
Start Date:	Q1 2018 engineering Q1 2022 construction
Complete:	2024
Cost:	\$5.5M total construction
Funding:	Water rates and capital reserves
Engineer:	Pace Engineers
Contractor:	Atkinson Construction

Water Main Replacement on 34th Avenue S

In August 2018, the City of SeaTac informed the District of their plans to improve 34th Avenue S from S 160th Street to S 166th Street with new sidewalks, storm drainage, and on-street parking, and road overlay upon completion. Construction was originally scheduled for spring 2020, but was delayed due to Covid-19 and ROW acquisition.

The District maintains approximately 1,850 LF of 6-inch AC water main within this section of road, which 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 under an ILA with the City.



Design is complete and construction should begin early 2021.

The total project cost is estimated at \$885,000. Highline will fund the project by existing rates and capital reserves.

Project#	18-5
Start Date:	Q3 2018 engineering Q2 2021 construction
Complete:	Q4 2021
Cost:	\$885k total project
Funding:	Existing rates and capital reserves
Engineer:	Parametrix, Inc.
Contractor:	TBD

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 (e.g., main repairs, leaks, partnering projects with other agencies, etc.) in order to prioritize 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 Avenue S and S 214th Street. Six homes were damaged, and several properties required extensive restoration. The District chose to replace these aging mains.

Project 19-1 is the first of several future main replacement projects with the goal of replacing 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 Street between Marine View Drive and Des Moines Memorial Drive will be replaced. In addition, the project will upgrade pipes in the higher-pressure areas along 1st and 2nd Ave S between S 200th Street and S 208th Street, and along 9th and 10th Avenue S, north of S 208th Street. 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 the same general area of this project, as they intended to repave several roads along the same alignment as some of our water main replacements. The District executed an ILA with the City in November 2019. Midway Sewer District also plans to replace approximately 930 LF of sewer main on 1st Place 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 spring 2021. At the end of 2020, approximately 70% of the work is complete.

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
Start Date:	Q1 2019 engineering Q2 2020 construction
Complete:	Q2 2021
Cost:	\$4.5M total construction
Funding:	Existing rates and capital reserves, after an approximate \$1.0M reimbursement from the City of Des Moines and Midway Sewer
Engineer:	Murray Smith
Contractor:	KarVel Construction

2020 Manhattan Cast Iron Water Main Replacement Planning, Analysis, and Design Recommendations

Highline Water District maintains several small diameter, cast iron (CI) water mains in the Maple Lane subdivision of Normandy Park (2nd Place SW between SW 171st Street and SW 176th Street). Typically, CI mains are not the highest priority for replacement, however, these unlined, 6-inch diameter “Manhattan cast iron” pipes were constructed in the late 1950s by the Normandy Park Water Company. Over the years, the inside of these types of CI pipes corrodes and the buildup of rust deposits (tubercles) causes flow restrictions and water quality issues. This location is one of the few on record with 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 has experienced previous ruptures in this area and repairs are complicated 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 mains. 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, selecting 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 2021 CIP, and the goal of not raising water rates in 2021, the District has delayed 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#	19-2
Start Date:	Q1 2020 engineering
Complete:	Q3 2020 engineering
Cost:	\$85k engineering
Funding:	Existing rates and capital reserves
Engineer:	Carollo Engineers

Infrastructure: 2020 Capital Improvement Projects - Ongoing (continued)

**2020 Manhattan
Cast Iron Water
Main Replacement
Planning, Analysis,
and Design
Recommendations**
continued from page 16





Star Lake Military Road Water Main Replacement

Highline Water District owns an existing 12-inch cast iron water main along the west side of I-5, from S 272nd Street to Star Lake Road. 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 this 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 Street to an existing main serving Club Palisades Apartments, and to install a new main along Star Lake Road/Military Road near the I-5 undercrossing. The total length of the project is approximately 1,450 LF and will be constructed with 12-inch ductile iron (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. 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
Start Date:	Q2 2020 engineering Q1 2021 construction
Complete:	Q3 2021
Cost:	\$1.3M total construction
Funding:	Sound Transit reimbursement (less any improvements considered betterments)
Engineer:	Pace Engineers
Contractor:	TBD

Infrastructure: Developer Extensions

- Completed
- Ongoing
- New

Completed

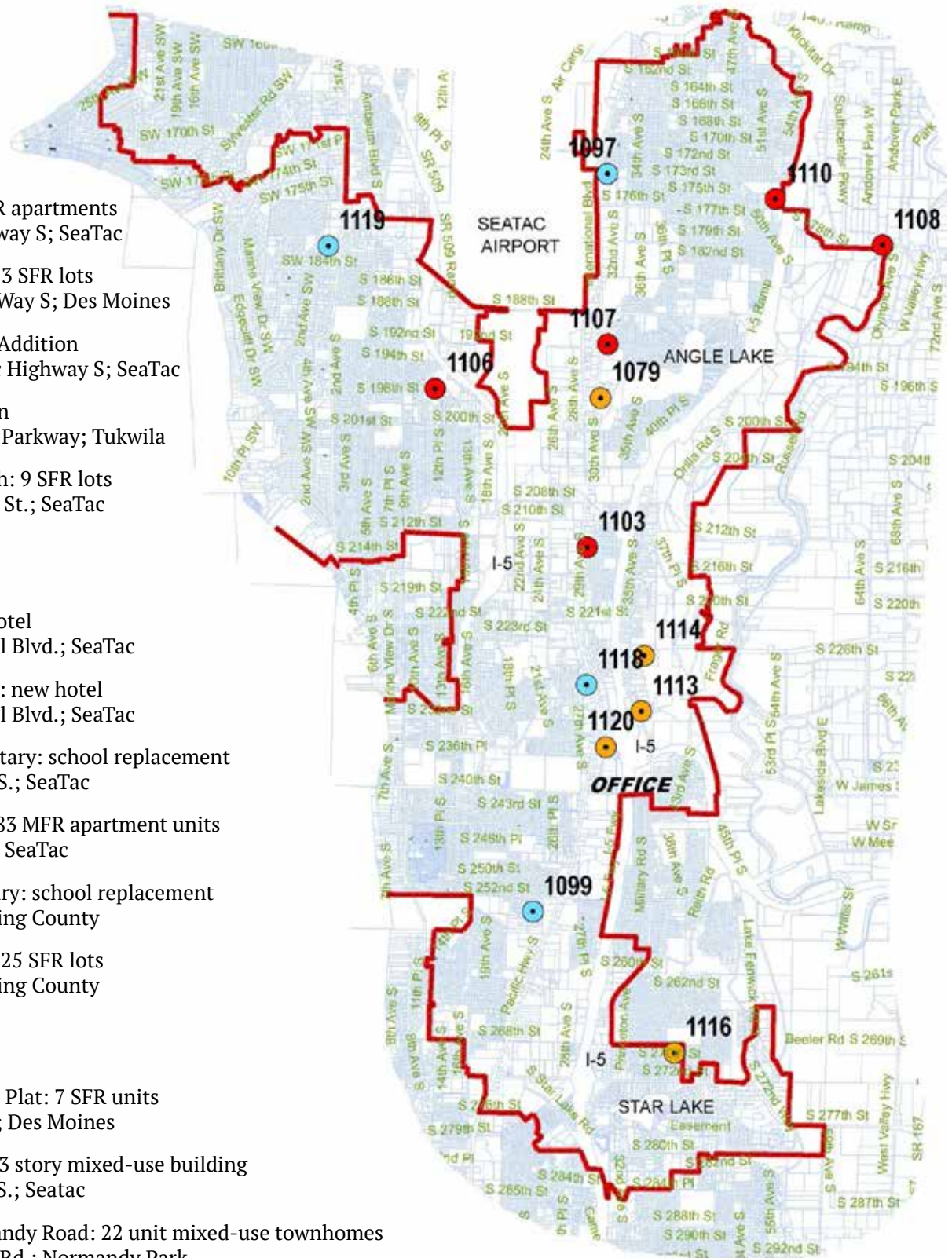
- 1103** Vintage Hotel: MFR apartments
21212 Pacific Highway S; SeaTac
- 1106** Blueberry Lane III: 3 SFR lots
19603 Des Moines Way S; Des Moines
- 1107** Country Inn Hotel Addition
S 192nd and Pacific Highway S; SeaTac
- 1108** Tukwila Fire Station
17951 Southcenter Parkway; Tukwila
- 1110** Sapphire on S 175th: 9 SFR lots
5102–5123 S 175th St.; SeaTac

Ongoing

- 1079** Hyatt Place: new hotel
19518 International Blvd.; SeaTac
- 1097** SeaTac Hyatt Hotel: new hotel
17300 International Blvd.; SeaTac
- 1114** New Valley Elementary: school replacement
22420 Military Rd. S.; SeaTac
- 1115** Alexan Gateway: 283 MFR apartment units
23000 Military Rd.; SeaTac
- 1116** Star Lake Elementary: school replacement
4014 S 270th St.; King County
- 1117** Stafford Meadows: 25 SFR lots
4005 S 280th St.; King County

New

- 1099** Breckenridge Short Plat: 7 SFR units
2200 S 253rd Place; Des Moines
- 1118** Pointe by Vintage: 3 story mixed-use building
22837 Pacific Hwy S.; Seatac
- 1119** Sapphire on Normandy Road: 22 unit mixed-use townhomes
117 SW Normandy Rd.; Normandy Park





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.

This Annual Report is proudly provided by Highline Water District

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Todd Fultz (Secretary)
Polly Daigle
Daniel Johnson
Kathleen Quong-Vermeire

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