

Skyway Water and Sewer District Plan Annex

Introduction

Skyway Water and Sewer District (WSD) is located in unincorporated King County between the Cities of Seattle, Renton and Tukwila, with the Duwamish Valley to the south and west, the Renton Municipal Airport and Cedar River to the east, and Lake Washington to the northeast. The jurisdiction is best classified as urban residential and encompasses the areas commonly known as Skyway Hill, Bryn Mawr, and Lakeridge.

Skyway WSD is authorized to operate as a public utility system by the State of Washington under the Revised Code of Washington (RCW) Title 57 (Water and Sewer Districts). The District functions under a three-commissioner system, whereby the citizens of the District elect the commissioners. Resolutions and motions adopted by the Board make and establish policies that govern its operations.

The District's 1.8 square mile water service area serves 3,350 rate payers and generally extends from South Ryan Street in the north, Beacon Coal Mine Road and South Langston Road in the south, Beacon Avenue in the west, and Lake Washington, Rainier Avenue South and 84th Avenue South in the east. The District benefits from having independent groundwater wells, as well as long term supply contracts with the City of Renton and the Cascade Water Alliance (supplied by SPU).

Historically, most of the water supply to the District has been delivered through a consortium of water purveyors that worked together to negotiate water supply contracts with Seattle and Tacoma and develop alternative water supply solutions, including Lake Taps. In recent years, the District has improved its own water supply by installing new groundwater wells and improving water treatment facilities. These improvements benefit the District by reducing dependence on the regional system, providing a reliable local source of water, and reducing water supply costs. Joint use facilities with Renton were constructed in 1985 and groundwater from Renton wells supply two of the District's pressure zones through shared water transmission and storage facilities. While today 10% of the District's water supply is sourced from its own groundwater wells, with 55% purchased through the Cascade Water Alliance and 35% through the City of Renton, the percentage of water supplied by the District itself is expected to increase over the next few years as well source use expands.

The 2.7 square mile sewer service area serves 4,050 rate payers, is bound by Renton, Tukwila, and Seattle on the outer boundaries, and generally extends from South 112th Street and South 116th Street in the north, South 137th Street in the south, Interstate 5 and 59th Avenue South in the west, and 84th Avenue South and 76th Avenue South in the east. The current sewer service area is the result of several previous mergers

Skyway Water and Sewer District Profile

- **Skyway WSD** is a Special Purpose District governed by an elected three-member board
- **Population Served:** 9,890 within the water service area; 16,210 within the sewer service area as of 2013
- **Service Connections:** 3,350 water customers; 4,050 sewer customers
- **Land Area Served:** Water service area is about 1,152 acres; sewer service area is about 1,728 acres
- **Average Water Use:** 1.17 million gallons per day (2010- 2015)
- **Location Boundries:** *east* of the Duwamish River, *west* of Cedar River, *south* of Lake Washington, *north* of Southwest Sunset Boulevard
- **Total Capital Assets (2019):** \$18,266,959





of public sanitary sewer systems. Sewage from the District sewer service area is treated at the King County Wastewater Treatment Division’s South and West point treatment plants.

Land use within the District is mostly single family residential, with multi-family residential and commercial areas located along major thoroughfares (Beacon Ave S, Renton Ave S, Rainier Ave N) and a large industrial area located in the southwest corner of the District’s water and sewer service area, concentrated along State Route 900. Additional multi-family uses are located around Skyway Park.

Development Trends

In September 2019, King County staff issued an Executive Recommended Plan to the County Council for the Skyway-West Hill Land Use Subarea Plan. This plan was the culmination of two years of planning between the community stakeholders for future land use in the unincorporated community of Skyway. The Skyway-West Hill subarea matches very closely with the District boundary and general development trends determined for this plan would equate to the same trends for the District. In the Skyway-West Hill subarea two-thirds of residents reside in single-family detached houses. The housing stock in Skyway-West Hill is generally older than King County as a whole; nearly 75 percent of units are at least 40 years old. The land use within the Skyway area is designated for medium to high density residential development, which covers approximately over 91 percent of the total area of the Skyway-West Hill subarea. The typical land use pattern in Skyway is single-family detached residential, with many blocks containing a variety of housing types and densities, including attached townhomes, duplexes, triplexes, apartments, and multi-story construction.

Between 2000 and 2017, the Skyway-West Hill area experienced significant growth. In that time, the total population of the Skyway-West Hill area increased by 31 percent to over 18,000 residents. Skyway-West Hill is one of three communities in King County in which people of color constitute a majority of the population (along with the cities of SeaTac and Tukwila). Skyway has the fourth-highest proportion of Asian residents (33 percent, the majority of whom are Vietnamese) of any community in Washington. White residents represent 29 percent of the community (the lowest percentage of any community in King County), African-Americans represent 24 percent (the highest percentage of any community in Washington), and Hispanic/Latino residents represent ten percent.

Growth within the District is relatively uniform and follows the growth patterns described in zoning and land use designations. The Skyway Water and Sewer District Comprehensive Plan of 2013 indicates a pattern of modest but persistent growth within the District’s service area boundaries. Based on 2010 census data obtained at the block level, projections made in 2013 by the Puget Sound Regional Council (PSRC), the District is estimated to achieve an average population growth rate of 1.3% annually from 2013-2033, with approximately two-thirds of total growth for the period expected to take place in the first 10-year period (2013-2023).

As of 2019, the District served approximately 10,870 people in their water service area. The District’s sewer system plan estimated a sewer population in 2019 of 18,010. Utilizing population and employment projections from PSRC, the District’s system plans estimated that by the year 2033 the District will serve about 12,390 water service people and about 20,200 sewer service customers.

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Annexation of the unincorporated West Hill / Skyway area has been studied extensively in recent years, most recently in relation to a proposal for annexation by the City of Renton. In November 2012, a vote to annex the area to Renton failed to obtain the required margin and the area remains unincorporated.

Based on the District’s population and demand projections and the regional vision for development in the area of King County served by The District, it is believed that moderate population growth will occur in tangent with modest up-zoning from single-family to multi-family residential. This shift towards multi-family residential is concentrated along major thoroughfares and around Skyway Park, increasing the number of residents living within the “very high” liquefaction potential zone centered on Skyway Park (see fig. 6) and thereby increasing hazard risk .

Skyway Water and Sewer District Risk Summary

The following is a summary of the natural hazards that were reviewed. References are made to the District’s 2013 Comprehensive Plan and prior Hazard Mitigation Plan, both adopted in 2014.

<i>Hazard Risk and Vulnerability Summary</i>			
HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Avalanche	Extremely low risk; no avalanche risk areas are identified within District boundaries	None	None
Earthquake	<p>High risk; While there are no active fault lines within Skyway WSD boundaries, the District is located within the Puget Sound region which is at high risk from the Seattle Fault.</p> <p>Liquefaction potential is low throughout most of the District, with high potential confined to the Skyway Park area and two small swaths of land located along the southwest and northeast service boundaries.</p>	<p>Within the District, ‘very high’ liquefaction potential is present only in the Skyway Park area, extending slightly beyond park boundaries in certain areas including a small portion of Renton Ave S. Approximately 2,083 ft of water conveyance and 4,871 ft of wastewater conveyance piping runs through this zone. Additionally, the District’s secondary administrative building and main lift station are located at 11909 Renton Ave S, just northeast of Skyway Park and within the ‘very high’ liquefaction potential zone.</p> <p>A small tract of land running between Beacon Coal Mine Rd S and the District’s southerly boundary is classified as high potential, while a small tract on the District’s easterly border along Rainier Ave N is classified as high-to-medium risk. No water or wastewater infrastructure resides on or runs through either of these zones.</p> <p>The remaining majority of the district is classified as low to very low potential.</p>	<p>Water mains and supply lines are particularly important to the District’s operation. Both the SPU supply line running through the District and the wastewater conveyance lines in the District’s northeasterly corner along Lake Washington are located entirely in low to very low liquefaction risk areas. Nearly all of the District’s water and sewer main infrastructure is also located in low risk areas with the exception of those lengths running through or into the aforementioned very high and high-to-moderate zones.</p> <p>In the event of an earthquake, however, there is significant risk of damages to water and sewer main infrastructure located in high liquefaction risk zones which could result in the disruption of water service for some rate payers and possible contamination from or exposure to hazardous waste. The ‘very high’ risk zone around Skyway Park includes high traffic roadways and is relatively dense, with more multi-family zoning.</p> <p>The District’s main lift station and secondary administrative buildings, which are at high risk of damage due to liquefaction, are valued at \$168,902 (sans equipment) and \$1,14,987 respectively and are both insured. The primary administrative building and remaining lift stations are at low risk of damage due to liquification and are also insured.</p>

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Flood	No significant risk throughout most of the District, with higher flood impact probability for about 25% of the area where adjacent to uncontrolled waterbodies.	None of the District is mapped within an area with flood risk.	<p>As the majority of the District’s assets are located below ground, the risk of damage to these assets due to surface flooding is extremely low. Damages due to extreme flooding may occur in the case of high pressure water surge and/or soil erosion exposing buried pipes.</p> <p>Additionally, neither the District’s administrative office nor its reservoirs reside on or near floodplains.</p>
Landslide	There are several small pockets of landslide potential in the south and northeast corners of the District.	<p>Within the District there are three medium sized zones of landslide potential and one very small zone located south of Rainier Ave S between Lotus Pl S and 84th Ave S.</p> <p>The first medium sized zone lies just south of the major roadway Martin Luther King Jr Way S and is centered on 68th Ave S. While there are no District assets in this zone, the First Cities Lift Station lies directly to the north of the zone.</p> <p>Another medium sized zone falls west of the major roadway Renton Ave S, south of S Fountain St, and north of S 115th St. Approximately a quarter mile to the northeast is a third medium sized zone surrounding Lakeridge Park and just west of the park centered on the intersection of S Rustic Road and Cornell Ave S.</p> <p>Although no District facilities fall directly within these zones, water and sewer main lines run through it; two PRV and two lift stations also reside on the zones’ immediate outskirts.</p>	<p>The majority of water lines running through the District are located almost entirely in areas classified as low risk, with the exception of small sections of water line running through high risk areas located just south of SR 900 in the industrial area at the southwest District boundary, in the Bryn Mawr area around Lotus Place South and S 112th Street, and in the Lakeridge Park area around South Rustic Road and Connell Ave South.</p> <p>Wastewater treatment conveyance lines are also almost entirely located within areas classified as low risk, however, there are some facilities located in landslide areas along the southwest District boundary, in the Bryn Mawr area, in the Lakeridge Park, and in the northwest portion of the service area between the powerline corridor and Renton Ave South.</p> <p>In the event of a landslide in these areas, water lines and wastewater conveyance lines are at higher risk of damage or breach, posing an additional risk of loss or contamination in surrounding areas.</p> <p>Additionally, road blockages caused by landslides could hinder the mobility of operations and repair staff.</p>

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Severe Weather	There is a high likelihood of numerous severe weather events annually, such as uncharacteristically strong wind, rain, lightning, snow, and hail storms. Most such events are localized weather anomalies that may not develop into a large event. Changing climate will continue to increase the frequency and intensity of these events.	The climate of King County is classified as Marine West Coast. This type of climate is characterized by relatively mild marine air, which moderates both summer and winter temperatures. There are 305 documented instances of severe weather in King County occurring between 1960 and 2017. The District lies central in the County, no specific severe weather events occurred in the District that did not occur in the County. These events include 220 instances of severe winds, 5 tornados, 33 instances of severe lighting, 2 severe hailstorms, and 45 instances of severe winter weather.	Severe weather could potentially impact the mobility of service employees due to loss of power or obstruction of roadways. While prolonged loss of power could potentially impact water and sewer management services, the District possesses several fixed and mobile generators.
Severe Winter Weather	Extended power outages are the most common impact of severe winter weather.	The District currently has 5 generators, some being fixed onsite at critical locations and others mobile.	Extended power outages are the most common impact of severe winter weather. Employee safety is also of concern when roadways to service area are impacted.
Tsunami	No tsunami areas are identified within the District boundaries.	None	None
Volcano	No volcano areas are identified within the District boundaries.	None	None
Wildfire	Extremely low risk	Because the District is located within a developed area, it is unlikely that localized fires would spread to woodlands or develop into wildfires.	The distribution of fire hydrants within the District boundary reduces the potential impact of this hazard.
Civil Disturbance	There is no risk of civil disturbance identified within the District boundaries.	None	None

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Cyber Attack	High Risk	While the District has systems in place to safeguard non- authorized access to District computer systems, utilities systems are prime targets for cyber attacks and there are continually new threats that require continued updates.	In the event of an attack, water and wastewater systems could be impacted that could result in a loss of sewer and water services.
Dam Failure	Extremely low risk	The District’s southeasterly boundary is nearly adjacent to a portion of the Duwamish River which is downstream from the Howard Hanson Dam, however, it is far away enough that flood water breaching District boundaries would be highly unlikely. Lake Washington, the largest waterbody located adjacent to the District area, is controlled by the Ballard Locks system, not a dam.	The District’s assets are at extremely low risk of damage.
Hazardous Materials Incident	King County is classified as high risk for hazardous materials incidents relative to all other counties in WA state due to its population density and industrial activity. This classification is also characteristic of the District.	Skyway WSD is vulnerable to contamination of its water source. Thorough monitoring of water quality in King County, as directed by District policies, acts as a safeguard against consumption of toxic water and access to multiple emergency sources eliminates dependence upon any potentially contaminated source.	Unless all established sources of water to the District are contaminated, the impact of a hazardous materials incident on Skyway WSD’s ability to continue service is minimal.
Public Health Emergency	Periodic outbreaks of disease including influenza are a likely hazard in Washington.	The most critical public health emergencies relating to water quality are those resulting from backflow incidents within the water system. As with hazardous materials incidents, King County water sources are not significantly vulnerable to public health emergencies due to water testing and purification.	Water District staff monitors water quality within the system. Multiple forms of communication and information sharing are ongoing within the District and can be utilized in the event of a water contamination related public health emergency.

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Structure Fire	Low risk	Skyway WSD’s operations and administrative buildings are constructed from wood and mason but are located in areas with low risk of fire hazard. Wastewater facilities are typically constructed of masonry but are also located in areas of low fire hazard.	In the event of a fire damaging or burning Skyway WSD’s structures, operations may be temporarily affected, but are unlikely to be halted. All buildings are insured against fire borne damages
Terrorism	Low	Although a public agency with critical facilities, the District is significantly less vulnerable to malevolent acts of terrorism than larger organizations. See Cyber attack vulnerability summary.	The impact of a terrorist attack on the District would differ greatly depending on the nature of the act. See Cyber attack impact summery.

Hazard and Asset Overview Maps

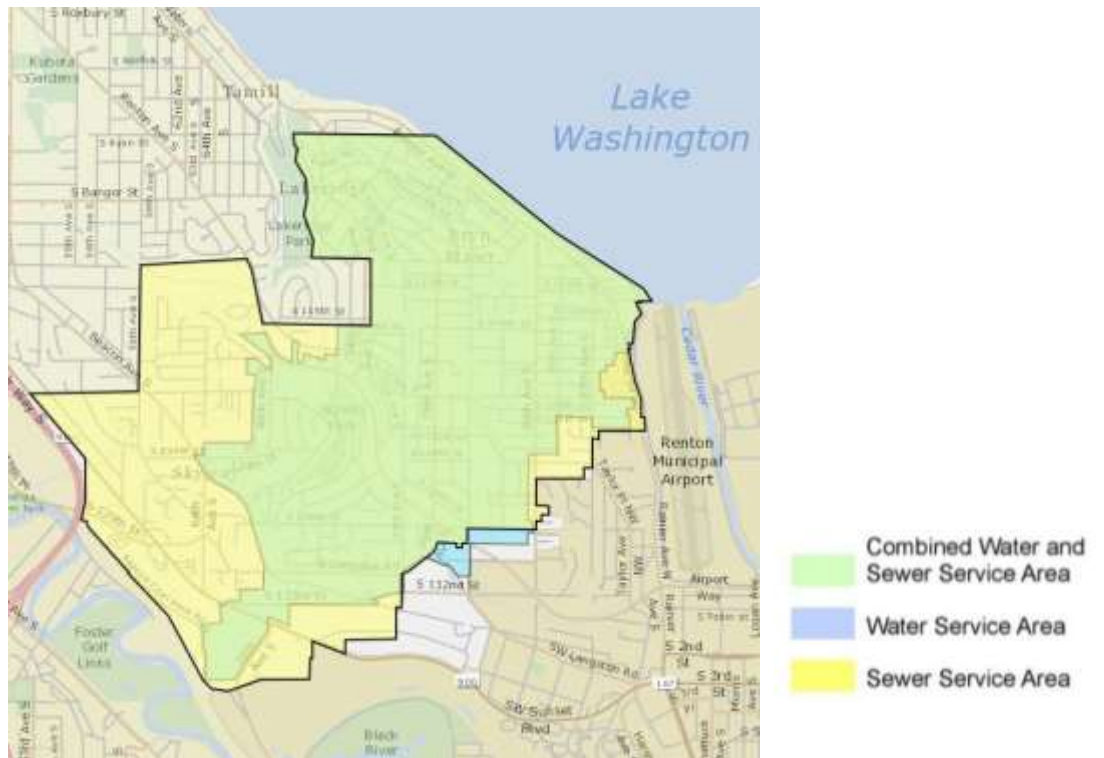


Figure 1: Skyway Water and Sewer District Service Boundaries



Figure 2: Skyway Water and Sewer District Water Mains (in dark blue)



Figure 3: Skyway Water and Sewer District Sewer Mains (in orange)



Figure 4: Seattle Water Supply Line Running Through Skyway Water and Sewer District (in dark blue)



Figure 5: Wastewater Treatment Conveyance Lines Serving Skyway Water and Sewer District (in purple)

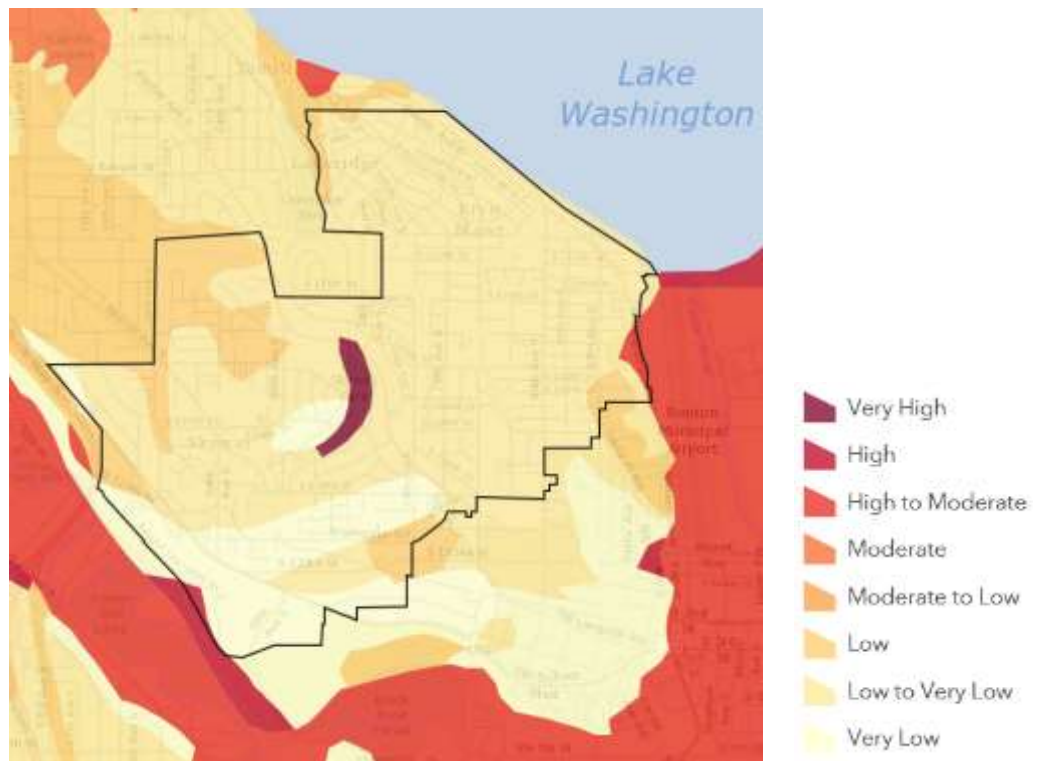


Figure 6: Liquefaction Potential in and Around Skyway Water and Sewer District



Figure 7: Potential Landslide Hazard Areas (Plus 50-Foot Barrier) in and Around Skyway Water and Sewer District (in orange)

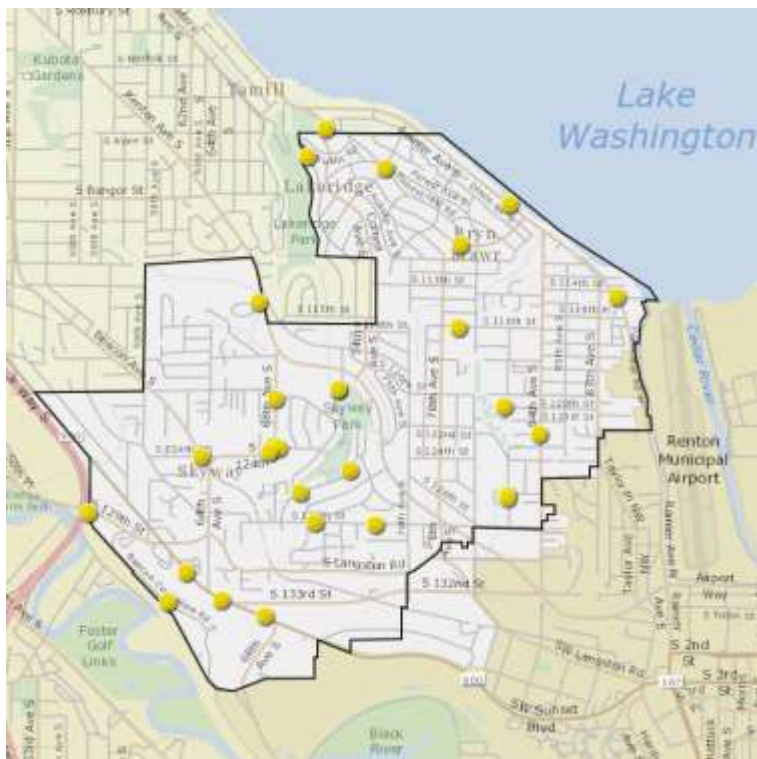


Figure 8: Skyway WSD Critical Facilities (in yellow)

General District (W&S) Assets at Risk

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
<p>Buildings and Land (Office, Shop, & Control Bldg.)</p>	<p>\$290,083 (Land value)</p> <p>\$1,885,920 (Buildings: net value after depreciation)</p> <p>\$3,230,462 (Buildings: cost at time of purchase)</p>	<p><u>Liquefaction:</u> High Risk <u>Severe/Winter Weather:</u> Moderate to High Risk</p> <p>The location of the District’s administrative, control, and operation Centers (6723 S. 124th Street, Seattle & 11909 Renton Ave S, Seattle) place them in a position of low hazard potential. The administrative center located in the Skyway Park area (11909 Renton Ave. S.), however, is highly vulnerable to liquefaction from earthquakes, which has a high cost of impact.</p> <p>Both centers are also vulnerable to Severe weather (winter and otherwise) which can have moderately high costs of impact.</p>	<p><u>Liquefaction:</u> High Likelihood <u>Severe/Winter Weather:</u> High Likelihood</p> <p>While the administrative office located at 6723 S. 124th St. is at no significant risk from natural disasters, the administrative office located at 11909 Renton Ave. S. sits in an area classified as ‘very high’ risk of liquefaction.</p> <p>There is a high likelihood of numerous severe weather events annually, such as uncharacteristically strong wind, rain, lighting, snow, and hail storms. Both Administrative centers are vulnerable to impact from these weather events.</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p>	<p><u>Liquefaction:</u> High Potential Cost of Impact</p> <p><u>Severe/Winter Weather:</u> Moderate to High</p> <p>Potential Cost of Impact While liquefaction borne damages could potentially debilitate the Skyway Park adjacent administrative center, the center located at 124th St provides a second potential locus of operations, although the centers’ functions are not redundant. As such, it is unlikely that water and sewer services would come to a halt in the event that earthquake borne damages completely debilitate the Skyway Park Administrative Center.</p> <p>While power outages caused by severe weather could potentially reduce the ability to perform work and communicate with field staff, access GIS database in the field, and communicate with outside agencies, the presence of fixed and mobile generators serves to prevent complete administrative shutdown.</p> <p>Damages to buildings from freezing and from falling branches/ limbs can also incur modest to high costs of repair.</p>

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Office Furniture/ Equipment	\$1,452 (net value after depreciation) \$69,960 (cost of replacement)	<u>Liquefaction:</u> Moderate to Low Risk <u>Severe/Winter Weather:</u> Low Risk Although both hazards have a high likelihood of occurrence in all or particular areas of the District (see previous asset section), the District's office furniture/ equipment has a relatively low book net value.	<u>Liquefaction:</u> High Likelihood <u>Severe/Winter Weather:</u> High Likelihood (See previous asset section)	<u>Liquefaction:</u> Moderate to Low Potential Cost of Impact <u>Severe/Winter Weather:</u> Low Potential Cost of Impact While the District's office furniture/ equipment has a relatively low book net value (making it a low risk asset set), this does not fully represent the potential cost of repair/replacement in the event of hazard borne damages, as it does not account for the assets' value depreciations over time and the cost of replacement with new items. For instance, although office furniture has a book net value of \$0 after depreciation, its book cost is listed at \$10,604.78 .
Field Equipment / Tools (hand tools, generators, fuel tank/ trailer, etc.)	\$92,687 (net value after depreciation) \$263,338 (replacement cost)	<u>Liquefaction, Landslide, Severe/Winter Weather:</u> Moderate Although neither the storage nor operations facilities are located in high potential liquefaction or landslide zones, the nature of field equipment subjects these assets to all potential hazard threats within the District.	<u>Liquefaction, Landslide, Severe/Winter Weather:</u> High Likelihood (see <i>Hazard Risk and Vulnerability Summary</i> chart & figs. 6 and 7)	<u>Liquefaction, Landslide, Severe/Winter Weather:</u> Moderate to High Potential Cost of Impact Due to the unpredictable nature of hazards and the non-static nature of field equipment, the potential extent of damage to equipment is highly contingent. Equipment may be made available by unaffected neighboring Districts in the event of a hazard. The greatest potential reasonable cost of impact is thus the cost of full replacement.

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Vehicles	\$850,841 (replacement cost)	<p><u>Liquefaction, Landslide, Severe/Winter Weather</u>: High Risk</p> <p>Although neither the carport nor vehicle maintenance facilities are located in high potential liquefaction or landslide zones, the non-static nature of vehicles subject them to all potential hazard threats within the District. The potential cost of impact (replacement of vehicles) is high.</p>	<p><u>Liquefaction, Landslide, Severe/Winter Weather</u>: High Likelihood</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & figs. 6 and 7)</p>	<p><u>Liquefaction, Landslide, Severe/Winter Weather</u>: High Potential Cost of Impact</p> <p>Due to the unpredictable nature of hazards and the non-static nature of vehicles, the potential extent of damage to equipment is highly contingent.</p> <p>Equipment may be made available by unaffected neighboring Districts in the event of a hazard.</p> <p>The greatest potential reasonable cost of impact is thus the cost of full replacement.</p>
Computers /Software	\$8,552 (value at time of purchase)	<p><u>Cyber Attack</u>: High Risk</p> <p>Utilities Districts are highly vulnerable to targeted cyber attacks which may disrupt computer software.</p> <p>The cost of repairing or replacing this software is low, however, the greatest possible cost of impact is extremely high and includes not only loss of revenue, but also theft of critical information.</p>	<p><u>Cyber Attack</u>: Moderate to High Likelihood of Occurrence</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart)</p>	<p><u>Cyber Attack</u>: Low Potential Cost of Impact</p> <p>The potential cost of repairing or replacing corrupted software is low and critical data on District operations is safeguarded from loss through IT security procedures.</p> <p>Security software is critical to protecting District assets, however, and breach of this software can lead to loss of revenue due to halted operations, as well as theft of customer payment information, as recently occurred in the city of Lacey, WA.</p>

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Security System	\$5,514 (value at time of purchase)	<p><u>Terrorism:</u> Moderate to Low Risk</p> <p>Although utilities Districts are classified as highly vulnerable targets for terrorist attacks, the size of SWSD makes it an unlikely target.</p> <p>While the cost of replacing or repairing the District's security system would be low, the potential cost of impact if the security system were to be disabled is high.</p>	<p><u>Terrorism:</u> Low Likelihood of Occurrence</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart)</p>	<p><u>Cyber Attack:</u> High Potential Cost of Impact</p> <p>While the cost of replacing or repairing the District's security system would be low, the greatest reasonable potential cost of impact if the security system were to be disabled may be as high as the value of any given District facility and its contents, as well as potential injury or fatality of District staff.</p>

Water Infrastructure Assets at Risk

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Water Mains	<p>\$6,669,043 (net value after depreciation)</p> <p>\$11,805,382 (value at time of purchase)</p>	<p><u>Liquefaction and Landslide</u>: High Risk.</p> <p>As water mains are located below ground, landslides and liquefaction from earthquakes are the most relevant hazard threats.</p> <p>Both hazards have a high potential likelihood of occurrence in particular areas of the District (see <i>Hazard Risk and Vulnerability Summary</i> chart & figs. 6 and 7) and high impact costs.</p>	<p><u>Liquefaction and Landslide</u>: High Likelihood.</p> <p>Within the District’s water service boundaries and where water conveyance infrastructure is present, ‘very high’ liquefaction potential is present only in a small area surrounding Skyway Park. The remaining service area where water conveyance infrastructure is present is classified as relatively low potential.</p> <p>Landslide potential is present in the north and south portions of the district in several areas where water conveyance infrastructure is present.</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p>	<p><u>Liquefaction & Landslide</u>: High Potential Cost of Impact.</p> <p>Damage to water mains could result in the loss of water supply to large areas of service for domestic and commercial uses, as well as to fire districts for fire suppression.</p> <p>In addition to the cost of water main repair/replacement, this would result in a loss of revenue during the period in which service is halted.</p> <p>The breaking of pressurized pipes can also cause road erosion and damage in the surrounding area.</p>
Water Service Lines	<p>\$126,894 (net value after depreciation)</p> <p>\$226,039 (value at time of purchase)</p>	<p><u>Liquefaction and Landslide</u>: High Risk</p> <p>As water service lines are located below ground, landslides and are the most relevant hazard threats. Both hazards have a high potential likelihood of occurrence in particular areas of the District and have relatively high impact costs.</p>	<p><u>Liquefaction and Landslide</u>: High Likelihood.</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p>	<p><u>Liquefaction and Landslide</u>: Moderate-to-High Potential Cost of Impact.</p> <p>Damage to water service lines could result in the loss of water service for domestic and commercial uses, as well as to fire districts for fire suppression.</p> <p>Although the impact cost of repairing/replacing damaged service lines (as well as secondary damages to the surrounding environment) is less than that of water mains, the potential financial impact from loss of ratepayer revenues is comparable.</p>

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Hydrants	\$8,489 (net value after depreciation) \$131,032 (value at time of purchase)	<u>Liquefaction and Landslide:</u> Moderate Risk Although hydrants are as vulnerable to liquefaction and landslide hazards as previous assets, the cost of repairing or replacing them is relatively low. Additional impact costs may be derived from lack of water available for fire suppression	<u>Liquefaction and Landslide:</u> High Likelihood of Occurrence (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide:</u> Moderate Potential Cost of Impact. The cost of replacing hydrants is relatively low. Additional impact costs may be derived from lack of water available for fire suppression
Water Meters	\$42,598 (net value after depreciation) \$666,834 (value at time of purchase)	<u>Liquefaction and Landslide:</u> Moderate to Low Risk The District's water meters should be relatively safe in the event of a landslide or earthquake. The primary potential cost of impact if they were damaged would be the cost of repair or replacement.	<u>Liquefaction and Landslide:</u> High Likelihood of Occurrence (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide:</u> Moderate Potential Cost of Impact. The primary potential cost of impact if the District's water meters were damaged would be the cost of repair or replacement. During the period in which the meters are broken, water use metrics would also be unavailable to the District.

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Reservoirs	\$2,511,256 (net value after depreciation) \$4,280,415 (value at time of purchase)	<p><u>Liquefaction and Landslide:</u> Moderate Risk</p> <p><u>Hazardous Materials Incident:</u> Low Risk</p> <p>Although District reservoirs are not located in high risk liquefaction, landslide, or hazardous materials (i.e. industrial) areas, the cost of repair in these instances would be high.</p> <p>Operations would most likely continue regardless of damage, given the District's numerous regular and emergency water sources.</p>	<p><u>Liquefaction and Landslide:</u> Low Likelihood of Occurrence.</p> <p>Reservoirs are not located in high risk liquefaction or landslide zones. They are also not located near any heavy industrial zones.</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p>	<p><u>Liquefaction and Landslide:</u> High Potential Cost of Impact.</p> <p>Although the cost of repair would be high in the event that reservoirs are affected, water service operations would most likely continue regardless of damage, given the District's numerous regular and emergency water sources.</p>
Pump Stations	\$566,082 (net value after depreciation) \$972,410 (value at time of purchase)	<p><u>Liquefaction:</u> Moderate Risk</p> <p>No pump stations are located in high liquefaction potential zones. The potential cost of impact if damages were to occur would be moderate in terms of repair, however, the presence of additional stations makes water service disruption unlikely.</p>	<p><u>Liquefaction and Landslide:</u> High Likelihood of Occurrence.</p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p>	<p><u>Liquefaction and Landslide:</u> High Potential Cost of Impact.</p> <p>The potential cost of impact would be moderate in terms of repair, however, the presence of additional stations makes service disruption unlikely.</p>

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Wells & Wellhead Protection	<p>\$1,909,373 (wells: net value after depreciation)</p> <p>\$2,508,884 (wells: value at time of purchase)</p> <p>\$15,791 (wellhead protection: net value after depreciation)</p> <p>\$45,118 (wellhead: value at time of purchase)</p>	<p><u>Liquefaction and Landslide: Low Risk</u></p> <p>Wells are not located in high risk areas and cost of repair for well infrastructure such as wellhead protection would be moderate.</p>	<p><u>Liquefaction and Landslide: Low Likelihood of Occurrence</u></p> <p>Wells are not located in high risk areas. (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6 and 7)</p>	<p><u>Liquefaction and Landslide: Moderate to Low Potential Cost of Impact</u></p> <p>Cost of repair for well infrastructure such as wellhead protection would be moderate. As the District's wells are not the primary water source, it is highly unlikely that damages would halt water service.</p>
Treatment Facility	<p>\$77,354 (net value after depreciation)</p> <p>\$397,371 (value at time of purchase)</p>	<p><u>Liquefaction: Low Risk.</u></p> <p><u>Hazardous Materials Incident: High Risk.</u></p> <p>Although the treatment facility is in a low risk liquefaction zone, the presence of hazardous chemicals makes the site a high potential cost of impact area for liquefaction and hazardous materials incidents generally.</p>	<p><u>Liquefaction: Low Risk of Occurrence.</u></p> <p>(see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)</p> <p><u>Hazardous Materials Incident: Moderate Risk of Occurrence</u> (due to presence of chemicals).</p>	<p><u>Liquefaction: High Potential Cost of Impact</u></p> <p><u>Hazardous Materials Incident: High Potential Cost of Impact</u></p> <p>As hazardous materials incidents involving the spillage of chemical such as those housed at the treatment facility have high potential likelihood of injury to health and/or fatality, it is characterized as a high impact cost hazard.</p>

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Water Telemetry	\$283,515 (net value after depreciation) \$392,759 (value at time of purchase)	<u>Liquefaction and Landslide:</u> Moderate to Low Risk The District's water telemetry equipment should be relatively safe in the event of a landslide or earthquake. The primary potential cost of impact if they were damaged would be the cost of repair or replacement.	<u>Liquefaction and Landslide:</u> High Likelihood of Occurrence (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide:</u> Moderate Potential Cost of Impact. The primary potential cost of impact if the District's telemetry equipment was damaged would be the cost of repair or replacement. During the period in which the equipment is broken, water metrics would also be unavailable to the District.

Sewer Infrastructure Assets at Risk

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Sewer Mains/ Manholes	\$13,947,907 (net value after depreciation) \$23,400,905 (net value after depreciation)	<u>Liquefaction: High Risk.</u> As sewer mains are located below ground, landslides and liquefaction from earthquakes are the most relevant hazard threats. Both hazards have a high potential likelihood of occurrence in particular areas of the District (see <i>Hazard Risk and Vulnerability Summary</i> chart & figs. 6 and 7) and high impact costs.	<u>Liquefaction and Landslide: High Likelihood of Occurrence.</u> (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide: High Potential Cost of Impact.</u> In the event of an earthquake, liquefaction can displace pipe joints, break connections, and cause damage service lines. . Landslides can have a similarly destructive effect on below ground infrastructure. Damages to critical infrastructure could result in backed up sewers which could pose a potential health hazard and could cause river contamination.
Sewer Lift Station	\$490,773 (net value after depreciation) \$1,352,479 (net value after depreciation)	<u>Liquefaction: High Risk</u> The District's main lift station is located in a high risk liquefaction zone. The potential cost of impact would be high in terms of repair, however, the presence of additional stations makes sewer service disruption unlikely.	<u>Liquefaction and Landslide: High Likelihood of Occurrence.</u> (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide: High Potential Cost of Impact.</u> The potential cost of impact would be high in terms of repair, however, the presence of additional stations makes long term sewer service disruption unlikely.
Sewer Telemetry	\$142,508 (net value after depreciation) \$354,452 (value at time of purchase)	<u>Liquefaction and Landslide: Moderate to Low Risk</u> The District's sewer telemetry equipment should be relatively safe in the event of a landslide or earthquake. The primary potential cost of impact if they were damaged would be the cost of repair or replacement.	<u>Liquefaction and Landslide: High Likelihood of Occurrence</u> (see <i>Hazard Risk and Vulnerability Summary</i> chart & fig. 6)	<u>Liquefaction and Landslide: Moderate Potential Cost of Impact.</u> The primary potential cost of impact if the District's telemetry equipment was damaged would be the cost of repair or replacement. During the period in which the equipment is broken, sewer metrics would also be unavailable to the District.

Skyways Water and Sewer District Critical Facilities

FACILITIES	VALUE (\$)
Administration Office (6723 S. 124th Street)	\$1,248,835 (property & content)
Administration Office (11909 Renton Ave S)	\$168,902.00 (property)
Vehicle Maintenance Facility (6723 S. 124th Street)	\$1,280,959 (property & content)
Carport (6723 S. 124th Street)	\$43,976.00
Control Bldg. (7843 S 116th Street)	\$126,144 (property & content)
Water Treatment Facility (7843 S 116th Street)	\$1,318,904 (property & content)
Dimmitt Booster Pump Station (12603 82nd Ave S.)	\$1,225,631 (property & content)
Water Tank 1 (75,000 gal) (7402 S. 128th St.)	\$692,227.00
Water Tank 2 (75,000 gal) (6801 S. 124th St.)	\$692,239.00
Water Tank 3 (250,000 gal) (7843 S. 116th St.)	\$391,418.00
Water Tank 4 (250,000 gal) (7843 S. 116th St.)	\$391,418.00
Well 5 (7843 S 116th St.)	\$154,483.00
Well 6 (7843 S 116th St.)	\$383,117.00 (property & content)
Well 8 (7843 S 116th St.)	\$95,802
Well 9 & Piping (7843 S 116th St.)	\$124,231
Well 10 (7843 S 116th St.)	\$165,206
Storage Bldg. (7402 S. 128th St.)	\$56,644.00
Storage Bldg (6801 S. 124th St.)	\$112,985
Reservoir (1.3 mil gal) (6723 S. 124th St.)	\$1,142,021.00
Booster Pump Station (7022 S. 128 th)	\$176,409 (property & content)
Booster Pump Station (6723 S. 124th St.)	\$773,388 (property & content)
Main Lift Station (11909 Renton Ave. S)	\$1,135,087 (property & content)
Park Lift Station (7224 S. 125 th)	\$265,852 (property & content)
Foster Lift Station (5515 S. 129th St)	\$271,882 (property & content)
Sunset Lift Station (13109 Martin Luther King Way S)	\$350,344 (property & content)
First Cities Lift Station (13370 MLK Wy S)	\$352,235 (property & content)
Langston Lift Station (11433 Renton Ave S)	\$321,537 (property & content)
Greentree Lift Station (6900 S. 125th St)	\$211,401 (property & content)
Holcam Lift Station (13426 Beacon Coal Mine Rd.)	\$271,882 (property & content)
South Shore Lift Station (11402 Rainier Ave S)	\$277,201 (property & content)
North Shore Lift Station (10856 Rainier Ave S)	\$302,846 (property & content)
Cornell Lift Station (10221 Cornell Ave S)	\$283,466 (property & content)
Renton/Joint Tank (S 126th Ave & 82nd Ave S)	\$1,221,692.0
Altitude Vault (S. 124th St & 68th Ave)	\$31,850 (property & content)
Flow Control Vault (S. Langston & 68th Ave S)	\$89,303 (property & content)

Plan Update Process

A planning team was assembled for the plan update, consisting of staff from the Skyway Water and Sewer District and PACE Engineers, Inc., as the technical consultant.

The team conducted a public hearing to help customers understand what was important to them. Coordination with the County throughout the plan update process occurred. A review of the District’s existing plan and programs was conducted to support and direct hazard mitigation planning and actions.

The District updated their hazard risk assessment by measuring property damage resulting from natural hazards. This process assesses the vulnerability of buildings and infrastructure by natural hazards. The District also estimated the cost of potential damage. The mitigation actions recommended in this plan include some that address limitations in the modeling caused by insufficient data.

Jurisdiction Planning Team

NAME	TITLE	ORGANIZATION	CONTRIBUTION
Cynthia Lamothe	General Manager	Skyway WSD	Owner
Brian Hendrickson	Superintendent	Skyway WSD	Owner
Bill Reynolds	District Engineer	PACE Engineers, Inc.	Engineer/Consultant
Paul Weller	Planning Manager	PACE Engineers, Inc.	Consultant – Lead Writer
Arash Muntazir	Assistant Planner	PACE Engineers, Inc.	Consultant

Plan Update Timeline

PLANNING ACTIVITY	DATE	SUMMARY	ATTENDEES
Planning workshop	June 10, 2019	Understanding King County’s planning process and steps	Cynthia Lamothe Paul Weller
Strategy workshop	July 25, 2019	Understand mitigation strategies for the plan	Paul Weller

Public Outreach

This Hazard Mitigation Plan is intended to be a document for the District’s customers and is designed to include the public in the decisions and direction of the document. The District held a public hearing to discuss assets and updates to the plan. No significant public comment was received at this public outreach event. The District also held a special Board Meeting open to the public where the capital improvement projects were discussed and the projects specific to the hazard mitigation plan had special emphasis.

Public Outreach Events

EVENT	DATE	SUMMARY	ATTENDEES
Public Hearing	September 24, 2019	The District is working with King County to provide an annex to the County’s overall Hazard Mitigation Plan. The goal of the District’s annex is to reduce the District’s customer’s exposure to risk, reduce or prevent damage to	Cynthia Lamothe District Commissioners

		public and private property, reduce adverse environmental or natural resource impacts, and reduce the financial impact on the District and the community.	
Special Board Meeting open to the Public	January 24, 2019	The District held a special board meeting to discuss the current Capital Improvement Program and how some of the projects related to the Hazard Mitigation Plan.	Cynthia Lamothe District Commissioners

Jurisdiction Hazard Mitigation Program

Hazard mitigation strategies were developed through a two-step process. Each jurisdiction met with an internal planning team to identify a comprehensive range of mitigation strategies. These strategies were then prioritized using a process established at the county level and documented in the base plan.

Plan Monitoring, Implementation, and Future Updates

Updates on mitigation projects are solicited by the County for inclusion in the countywide annual report. As part of participating in the 2020 update to the Regional Hazard Mitigation Plan, the District agrees to convene their internal planning team at least annually to review their progress on hazard mitigation strategies and to update the plan based on new data or recent disasters. Skyway currently undertakes annual reviews of system resiliency and potential threats and uses these annual reviews to inform planning capital projects. This work has been ongoing since the last plan update and integrates mitigation planning with capital projects.

The goals and projects identified in this Hazard Mitigation Plan will also inform other planning mechanisms and will be integrated into other planning efforts. Often times, goals and projects from the Hazard Mitigation Plan overlap with other capital improvement projects and may be advantageous in leveraging funding for investments that offer cost-incentives through risk reduction or minimization.

The District plans to integrate the information and goals outlined in the current HMP with the following planning documents:

- Water and Sewer Comprehensive Plans – supports efforts to minimize natural hazard vulnerabilities within the water plan by developing a capital facilities plan. The Plan also identifies policies that support hazard mitigation planning efforts.
- Emergency Response Plan - supports the efforts of minimizing vulnerabilities, natural and manmade, within the water system during an emergency.
- Risk and Resiliency Assessment and Mitigation – it is required under the Bioterrorism Act for community drinking water systems serving populations of more than 3,300 persons to conduct assessments of their vulnerabilities to natural hazards, terrorist attacks, cyber-attacks, and other intentional acts, and to defend against adversarial actions that might substantially disrupt the ability of a system to provide a safe and reliable supply of drinking water. The HMP is well suited to serve as a starting point for the development of a Risk and Resiliency Assessment.
- Capital Improvement Plan - supports projects that are identified in this plan update. The CIP is updated by the District and adopted by the Board of Commissioners annually.
- Other planning documents, policies and activities, when deemed mutually beneficial.

The District anticipates utilization of its HMP in future efforts to coordinate with King County on potential funding opportunities. Having previously utilized an integrated set of planning mechanisms including the District's HMP, King County Emergency Management has expressed its intent to send to working partners any federal

Hazard Mitigation Plan Goals

- Ensure systems are in place to rapidly restore sewer and water service after a hazard
- Ongoing engineering analysis and system review to ensure adequate water supply for fire suppression
- Minimize water and sewer system damage
- Minimize impact and loss to customers
- Minimize negative impacts on public health and employee safety
- Provide emergency public information

notices of funding opportunities for the Hazard Mitigation Assistance Grant Program. These proposals will be assessed according to the prioritization process identified in King County’s base plan and the county will provide support to the District if they intend to submit a grant proposal.

The District intends to participate in the next plan update which is expected to be in April 2025. The District will submit a letter of intent by 2023, at least two years prior to plan expiration. The county will lead the next regional planning effort, beginning at least 18 months before the expiration of the 2020 plan.

Continued Public Participation

The District will continue to maintain substantial public outreach and will be focusing on personal preparedness and education. Information on ongoing progress in implementing the hazard mitigation plan will be integrated into public outreach efforts.

The District will continue to work with the public to explain how the District’s vulnerabilities are being addressed. Incorporating all public outreach of Hazard Mitigation into other Plans (water and sewer system planning, coliform monitoring plan, emergency response plan, etc.) will be a focus of the District.

Hazard Mitigation Authorities, Responsibilities, and Capabilities

Plans

PLAN TITLE	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
Comprehensive Plan Water & Sewer Systems	Skyway Water and Sewer District	Cynthia Lamothe	System deficiencies were discovered, and planned improvement are developed to address these deficiencies. Identifying vulnerable areas in the District’s system is critical for Hazard Mitigation.
Skyway Coordinated Water System Plan 1999 Update	Skyway W&S District, other neighboring water purveyors	Cynthia Lamothe	A portion the District is within the limits of the Critical Water Supply Service Area established for the Skyway Coordinated Water System Plan 1999 Update (CWSP). As such, the District is a participant in the Skyway Water Utility Coordinating Committee and subject to compliance with the CWSP.
Emergency Response Plan	Skyway Water and Sewer District	Cynthia Lamothe	Responses to the specified hazards are provided in this document
Coliform Monitoring Plan	Skyway Water and Sewer District	Cynthia Lamothe	Identifies the locations used for routine and

			follow-up sampling for coliform in drinking water. Included as attachment to the District's Comprehensive Plan Water and Sewer Systems.
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Programs, Policies, and Processes

PROGRAM/POLICY	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
Standard Details	Skyway Water and Sewer District	Cynthia Lamothe	District must maintain surplus supplies for operation and maintenance purposes. Having standards assures that in the case of an emergency the District has the parts needed for response and repair.
Emergency Response Plan	Skyway Water and Sewer District	Cynthia Lamothe	Using the Hazard Mitigation Plan, the Emergency Response Plan can be a better tool to bringing the water and sewer system on-line after a hazard.
Cross Connection Control Program	Skyway Water and Sewer District	Cynthia Lamothe	Provides an overview of facilities and customer activities that are considered at risk for cross connection contamination of the water system. These facilities and operations are required to install, maintain and routinely verify proper operation of cross connection prevention devices.
Coliform Monitoring Plan	Skyway Water and Sewer District	Cynthia Lamothe	The Coliform Monitoring Plan will provide locations in the system that could be a concern after hazard events.

Entities Responsible for Hazard Mitigation

AGENCY/ORGANIZATION	POINT OF CONTACT	RESPONSIBILITY(S)
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Skyway Water and Sewer District	Cynthia Lamothe and Brian Hendrickson	Oversees management and operations
PACE Engineers, Inc.	Paul Weller and Bill Reynolds	District Engineers

National Flood Insurance Program

National Flood Insurance Program Compliance

What department is responsible for floodplain management in your community?	N/A
Who is your community's floodplain administrator? (title/position)	The District is a special purpose district and does not have a floodplain administrator.
What is the date of adoption of your flood damage prevention ordinance?	N/A
When was the most recent Community Assistance Visit or Community Assistance Contact?	The District has not had a Community Assistance Visit
Does your community have any outstanding NFIP compliance violations that need to be addressed? If so, please state what they are?	No
Do your flood hazard maps adequately address the flood risk within your community? If so, please state why.	N/A; the District does not manage the flood hazard maps
Does your floodplain management staff need any assistance or training to support its floodplain management program? If so, what type of training/assistance is needed?	No
Does your community participate in the Community Rating System (CRS)? If so, what is your CRS Classification and are you seeing to improve your rating? If not, is your community interested in joining CRS?	No
How many Severe Repetitive Loss (SRL) and Repetitive Loss (RL) properties are located in your jurisdiction?	SRL: Unknown RL: Unknown
Has your community ever conducted an elevation or buy out of a flood-prone property? If so, what fund source did you use? If not, are you interested in pursuing buyouts of flood prone properties?	No

Hazard Mitigation Strategies

The tables below list the initiatives that make up King County's hazard mitigation plan from 2015 and the current 2020 hazard mitigation strategies. The 2015 table orders the initiatives in their respective priority. The 2020 table provides the strategies reprioritized from 2015; a full mitigation strategy page is provided for each strategy

2015 Hazard Mitigation Strategy Status

STRATEGY/ DESCRIPTION	PRIORITY	STATUS
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Continue to support county-wide initiatives identified in Part 3 of Volume 1 of this plan.	High	Ongoing; county-wide initiatives 1-7 as outlined in the plan are being funded through a combination of grants, the King County Office of Emergency Management operations budget, and local funds. Initiatives 2 and 4 involve the continuation of established protocol and require no additional work at this time. Initiatives 1, 3, 4, 6, and 7 involve continued advancement of existing best practices and/or collaborative participation. Initiative 5 involves the implementation of data collecting best practices in the event of a future hazard.
Participate in the plan maintenance strategy identified in Part 3 of Volume 1 of this plan	High	Ongoing; following plan maintenance strategies, planners have monitored, evaluated and updated this hazard mitigation plan over the 5-year planning cycle, incorporating its content in other planning mechanisms such as the District's comprehensive plan, and considering strategies to maintain and improve public participation in the process.
Reservoir No. 1 – CIP #W-24 Paint or Decommission	High	Budgeted for 2023
Water Main Replacement; Water Services Stub and Meter Replacements	High	On-going
Water Main Replacement – CIP #W-8, W-33	High	Completed
Repair Existing Sewer System – CIP #S-8	High	Completed
Sewer Facility & Maintenance Equipment Replacement – CIP #S-7	High	Completed
Convert Main Pump Station to Submersible Station/Decommission Greentree and Park Stations with new gravity and force mains – CIP #S-9	Medium	Currently under construction
Skyway Park North Sewer Replacement – Phase 1 – CIP #S-20	Medium	Budgeted for construction in 2020 and 2021
Sunset Pump Station – Sewer Force Main Replacement – CIP #S-21.1	Medium	Budgeted for construction in 2020
Sunset Pump Station – Convert to Submersible Station – CIP #S-21.2	Medium	Budgeted for construction in 2027
Skyway Park South Sewer Replacement – CIP #S-22	Medium	Budgeted for construction in 2026
Rainier Ave. South Lakefront Sewer Main Replacement – CIP #S-23	Medium	Budgeted for construction in 2028
Skyway Park North Sewer Replacement – CIP #S-24	Medium	Budgeted for construction in 2024 and 2025

Seattle Heights Sewer Replacements (various locations) – CIP #S-27 & S-25	Medium	Budgeted for 2029 through 2031
Seismic Evaluation Renton Ave Administration Building	Medium	To be completed
Seismic Evaluation Reservoirs 1 & 2 (code, sloshing effects, etc.)	Medium	To be completed
Seismic Evaluation Reservoirs 3, 4, & 5 (code, sloshing effects, etc.)	Medium	To be completed
Preparation for Volcanic Ash (reservoir and lift station ash screens, air filters, staff air masks, etc.)	Medium	To be completed
Severe Weather Assessment (inspect tall trees at reservoirs and buildings)	Medium	To be completed
Wildfire Mitigation (clear underbrush around facilities located in susceptible areas – well site, treatment building, Reservoirs 3 & 4)	Medium	To be completed
Stockpile Water and Sewer Main Repair Materials (breaks due to weather, Earthquake)	Medium	To be completed
Study Warning System Options in Case of Hazard (i.e. boil water notice)	Medium	To be completed

2020 Hazard Mitigation Strategies

STRATEGY	LEAD AGENCY/POC	TIMELINE	PRIORITY
Risk and resiliency assessment.	Skyway Water and Sewer District: Cynthia Lamothe		High
Pipe line replacement in areas of small pipes to improve flows.	Skyway Water and Sewer District: Cynthia Lamothe		High
Ongoing sewer repair and replacement program.	Skyway Water and Sewer District: Cynthia Lamothe		High
Replace and upgrade aging pump stations.	Skyway Water and Sewer District: Cynthia Lamothe		High
Emergency mobile water supply.	Skyway Water and Sewer District: Cynthia Lamothe		High

System Risk & Resiliency Assessment

Lead Point of Contact	Partner Points of Contact	Hazards Mitigated / Goals Addressed	Funding Sources and Estimated Costs
<ul style="list-style-type: none"> Cynthia Lamothe (General Manager) 	<ul style="list-style-type: none"> Paul Weller, Planning Manager (PACE Engineers) 	<ul style="list-style-type: none"> All Hazards Plan Goal Nos. 2, 3, 4 	<ul style="list-style-type: none"> Sources: ratepayer revenue and/or FEMA grant
<p>Strategy Vision/Objective</p> <p>The Bioterrorism Act of 2002 requires drinking water utility Districts serving more than 3,300 people to conduct an assessment of susceptibility to terrorist attacks on their systems. In 2018, the America’s Water Infrastructure Act of 2018 (AWIA) was passed as section 1433 of the Safe Drinking Water Act, expanding on this requirement by specifying the topics that water Districts’ Risk and Resilience Assessments and Emergency Response Plans must cover and setting a 2021 deadline for certificates of completion to the EPA.</p> <p>The purpose of the Risk and Resiliency Assessment is to identify the highest risks to Districts’ mission-critical operations in terms of malevolent acts and natural hazards, to assess the system’s resiliency in the face of potential hazards, and to find the most cost-effective measures to reduce risks. As the majority of the District’s critical infrastructure is below ground, the pipe resiliency assessment is indispensable to an understanding of the entire water system’s risk and resiliency.</p>			
<p>Mitigation Strategy</p> <p>The District will evaluate water and wastewater conveyance pipes’ current state, risk of damage, and preparedness of countermeasures.</p>			
<p>2-Year Objectives</p> <p>The risk and resiliency assessment will begin early 2021 and inform the District’s 2021 Risk and Resiliency Assessment for submission to the EPA.</p>	<p>5-Year Objectives</p> <p>Implemented strategies from this assessment.</p>	<p>Long-Term Objectives</p> <p>A prepared and resilient water system.</p>	
<p>Implementation Plan/Actions</p> <ul style="list-style-type: none"> Tests will be conducted to assess the current conditions of pipes as well as resiliency to various potential hazards. Cost effective measures to reduce risk of damage and increase resiliency of pipes will be formulated and executed. 			
<p>Performance Measures</p> <p>Partnered with PACE Engineers consulting service for assessment implementation.</p>			

Pipe Replacement In Areas of Small Pipes

Lead Point of Contact <ul style="list-style-type: none"> Cynthia Lamothe (General Manager) 	Partner Points of Contact <ul style="list-style-type: none"> Paul Weller, Planning Manager (PACE Engineers) 	Hazards Mitigated / Goals Addressed <ul style="list-style-type: none"> Plan Goal Nos. 2 and 5 	Funding Sources and Estimated Costs <ul style="list-style-type: none"> Sources: ratepayer revenue and/or FEMA grant Estimated cost: \$4,656,000
Strategy Vision/Objective <p>This strategy is part of the effort to ensure adequate flow throughout the District and adequate water supply for fire suppression, which is a key component of a resilient and prepared community. Given population growth and shifts in land use, as well as greater overall risk of fire due to drier summers in the region, it is important to ensure that small pipes used for fire flow are replaced to meet the changing demands of the community.</p>			
Mitigation Strategy <p>Small diameter water main and valve replacement cost will include permitting, topographic survey, engineering design, PS&E, easement acquisition, construction, and construction review for replacement of existing 2-inch and 4-inch water main with 8-inch DIP at the following locations:</p> <ul style="list-style-type: none"> So. 115th St from 84th Ave. So, to end of water main (750 LF) So. 117th St from 84th Ave. So. to Rainier Ave. So. (1, 850 LF) So. 120th St from 84th Ave. So to 87th Ave. So. (1,125 LF) 87th Ave So from So 117th St to So 118th St (550 LF) 87th Ave So from So 118th St to So 121st St (800 LF) <p>Water main and service line replacement for improved fire flow, as well as replacement of asbestos cement is required in the following locations:</p> <ul style="list-style-type: none"> Skyway Park North: <ul style="list-style-type: none"> 75th Ave So from So 122nd St north to fire hyd @ 12044 75th Ave So (650 LF) Skyway Park South: <ul style="list-style-type: none"> 70th Ave So from So 124th St to So 120th St (900 LF) 70th Pl. So. from So. 120th Pl. to the end of main (400 LF) 71 st Ave So from So 124th St to 70th Ave S (1,200 LF) 			
2-Year Objectives <p>Approximately 50% of work completed.</p>	5-Year Objectives		Long-Term Objectives <p>A prepared and resilient water system.</p>
Implementation Plan/Actions <ul style="list-style-type: none"> Cost effective measures to reduce risk of damage and increase resiliency of pipes will be formulated and executed. Project will continue as planned and outlined in the 2019 Capital Improvements Program. 			
Performance Measures <p>Partnered with PACE Engineers consulting service for assessment implementation.</p>			

Ongoing Sewer System Repair & Replacement

Lead Point of Contact <ul style="list-style-type: none"> Cynthia Lamothe (General Manager) 	Partner Points of Contact <ul style="list-style-type: none"> Paul Weller, Planning Manager (PACE Engineers) 	Hazards Mitigated / Goals Addressed <ul style="list-style-type: none"> Plan Goal Nos. 3 and 4 	Funding Sources and Estimated Costs <ul style="list-style-type: none"> Sources: ratepayer revenue and/or FEMA grant Estimated cost: \$2,935,000
Strategy Vision/Objective <p>This strategy is part of the effort to ensure adequate sewer service coverage throughout the District and maintain current standards of service in coming years. Project includes repair of existing damages, I&I monitoring, and sewer video inspection.</p>			
Mitigation Strategy <p>Ongoing repair, rehabilitation, and upgrade of (but not limited to) the following locations:</p> <ul style="list-style-type: none"> Sewer/offset pipe replacement at Bokara Condos Repair vertical offset sewer main at 84th Ave S and S 124th St Lateral connection repair (at sewer main) <ul style="list-style-type: none"> 8200 blk S 114th St 7600 blk S 113th St 7905 S 120th St 7800 block of South 115th 6800 block of South 120th Pl Sunset Station sewer force main replacement (along Martin Luther King Jr. Way South to discharge point at 129th St.) based on assessment of past history of breaks (400 LF) 			
2-Year Objectives <p>Approximately 30% of work completed.</p>	5-Year Objectives <p>Approximately 60% of work completed</p>	Long-Term Objectives <p>A prepared and resilient sewer system.</p>	
Implementation Plan/Actions <ul style="list-style-type: none"> Project will continue as planned and outlined in the 2019 Capital Improvements Program. 			
Performance Measures <p>Partnered with PACE Engineers consulting service for assessment implementation.</p>			

Replace & Upgrade Aging Pump Stations

Lead Point of Contact <ul style="list-style-type: none"> Cynthia Lamothe (General Manager) 	Partner Points of Contact <ul style="list-style-type: none"> Paul Weller, Planning Manager (PACE Engineers) 	Hazards Mitigated / Goals Addressed <ul style="list-style-type: none"> Plan Goal Nos. 3-5 	Funding Sources and Estimated Costs <ul style="list-style-type: none"> Sources: ratepayer revenue and/or FEMA grant Estimated cost: \$5,907,000
Strategy Vision/Objective <p>This strategy is part of the effort to ensure adequate sewer service coverage throughout the District and maintain current standards of service in coming years. Project includes replacement of Main Pump Station and reorganization of system flows.</p>			
Mitigation Strategy <ul style="list-style-type: none"> Replace existing Sunset Pump Station (wet/dry well sewage lift) with new submersible pump station, or abandon station if possible to re-route sewage flow. Convert Main Pump Station from wet/dry well to submersible pump station. Construct gravity sewer main from the Greentree and Park Pump Stations to the Main Pump Station, add a new force main to the Main Pump Station, and decommission the Greentree and Park Pump Stations. 			
2-Year Objectives <p>Complete Main, Greentree, and Park Pump Station conversions.</p>	5-Year Objectives <p>Complete approximately 25% of Sunset Pump Station conversion</p>	Long-Term Objectives <p>A prepared and resilient sewer system.</p>	
Implementation Plan/Actions <ul style="list-style-type: none"> Project will continue as planned and outlined in the 2019 Capital Improvements Program. 			
Performance Measures <p>Partnered with PACE Engineers consulting service for assessment implementation.</p>			

Emergency Mobile Water Supply Station

Lead Point of Contact <ul style="list-style-type: none"> Cynthia Lamothe (General Manager) 	Partner Points of Contact <ul style="list-style-type: none"> Paul Weller, Planning Manager (PACE Engineers) Brian Hendrickson, Superintendent (Skyway) 	Hazards Mitigated / Goals Addressed <ul style="list-style-type: none"> All Hazards Plan Goal Nos. 1, 2, 4, 5 (pg. 12) 	Funding Sources and Estimated Costs <ul style="list-style-type: none"> Sources: ratepayer revenue, FEMA grant
Strategy Vision/Objective <p>Provide a mobile water supply station that will allow customers to fill bottles, tanks, etc. in potential times of disaster.</p>			
Mitigation Strategy <ul style="list-style-type: none"> Coordinate with neighboring water districts to determine if partnering is a good option. Investigate alternatives to water supply stations (at the reservoir – permanent station, mobile station, etc.) 			
2-Year Objectives <ul style="list-style-type: none"> Meet with other Districts to discuss options. Develop a plan for implementation. 	5-Year Objectives <ul style="list-style-type: none"> Construction or purchase of station. Publish information to customers. 	Long-Term Objectives <p>A disaster prepared and resilient community.</p>	
Implementation Plan/Actions <ul style="list-style-type: none"> Meeting with in Spring of 2020. Select preferred method of action in late 2020. Implement project between 2021 – 2022. 			
Performance Measures <p>Partnered with PACE Engineers consulting service for assessment implementation.</p>			