



# Soos Creek Water and Sewer District Jurisdiction Plan Annex

## Introduction

In 1939, King County Water District No. 58 formed to provide water service to an area less than two square miles that centered on Benson Road (108<sup>th</sup> Avenue SE) and extended from SE 164<sup>th</sup> to SE 192<sup>nd</sup> Street. At that time, water was collected from a well, pumped to a timber reservoir, and distributed to customers. Over the next 16 years, the water service area continued to grow and in 1955, when the District began purchasing water from the Seattle Water Department (now known as Seattle Public Utilities), it discontinued the use of well water. By 1961, the area had expanded to serve approximately 1,900 customers in a 10 square mile service area. Throughout the next decade, Water District No. 58 continued to grow and expand, and by 1974, it provided service to 6,000 customers. During the 1960s, 1970s, and early 1980s, Water District No. 58 continued to grow by annexations within the approved service area. In the 1980s several annexations were completed that added island areas to the District’s service area.

The portion of the District that provides sewer service formed in 1959 originally as the Cascade Sewer District. That area comprised approximately 600 acres and principally included the community of Cascade Vista. For several years prior to and after the actual formation of the Cascade Sewer District, a private company constructed and operated the sewer system and treatment plant for this community. In 1963, Cascade Sewer District assumed operation of the facilities and shortly thereafter, the treatment plant was abandoned, and the sewer facilities were connected to the King County system for treatment at the Renton plant. To keep pace with growth demands, by 1975, the sewer system extended to provide service to 15,000 customers within a 10 square mile area. In 1987, Water District No. 58 merged with Cascade Sewer District and created what is now known as Soos Creek Water & Sewer District (SCWSD).

Today, the SCWSD now encompasses over 35 square miles, serving nearly 110,000 people in southeast King County spanning services to the Cities of Auburn, Black Diamond, Covington, Kent, Maple Valley, and Renton as well as unincorporated King County. The water and sewer service areas are not coterminous. SCWSD is governed by a five-member Board of Commissioners. The Board of Commissioners assumes responsibility for the adoption of the plan; the General Manager will oversee it implementation. SCWSD funds its operations from its water and sewer usage revenue.

Water is received from Seattle Public Utilities via Lake Youngs and sewer is conveyed to King County’s South Treatment Plant in Renton.

### Soos Creek Water and Sewer District - District Profile

- Special Purpose District
- Estimated Population: 109,790
- Water and Sewer Area Served: 35 Square Miles
- 5 Water Pump Stations
- 31 Sewer Lift Stations
- 4 Water Reservoirs



### Jurisdiction Point of Contact:

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SCWSD has a long-standing employee history with an average employment length of more than 25 years. By 2020, SCWSD aims to be debt free and pay for projects with liquid assets.

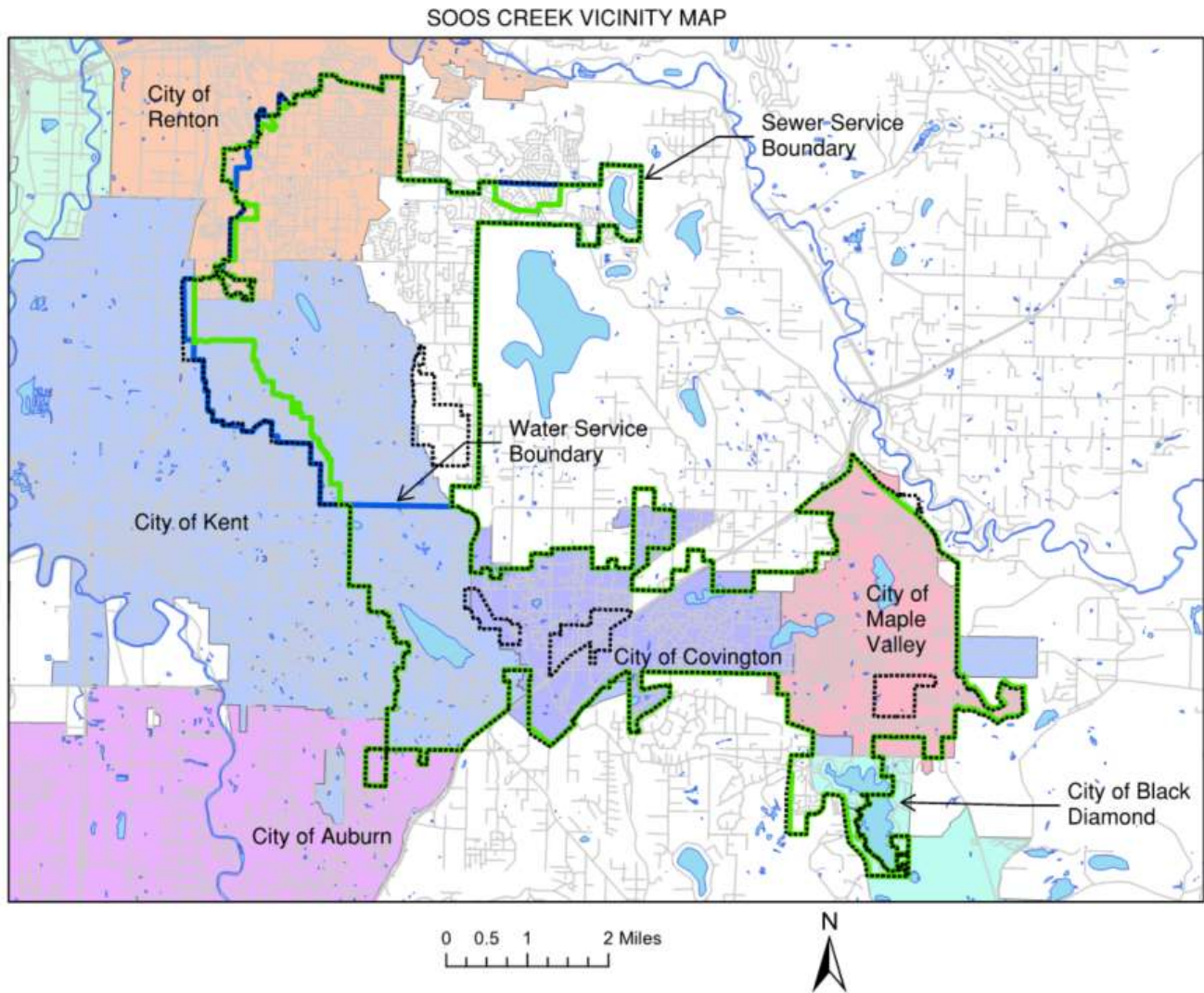


Figure 1: Soos Creek Water and Sewer District Water and Sewer Corporate Boundary.

### Development Trends

SCWSD continues to grow at a rapid rate, incorporating increased population densities from several of the fastest growing communities including the Cities of Covington and Maple Valley. Population infill will continue to increase within the urban growth boundary, resulting in more development in sensitive areas. Hazard mitigation will continue to be a priority to Soos Creek as it grows and increases in density. Soos Creek will continue to evaluate hazards in newly acquired areas, install new facilities that have been designed to mitigate the appropriate hazards, and replace or upgrade existing systems that are vulnerable to hazards.



# Soos Creek Water and Sewer District Risk Summary

## Hazard Risk and Vulnerability Summary

HAZARD *	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
<b>Avalanche</b>	SCWSD is not located near any Avalanche Hazard Areas.	N/A	N/A
<b>Earthquake</b>	Approximately 40% of the sewer service area and approximately 10% of the water service area are located within liquefaction zones.	20 sewer lift stations are located within liquification zones. No water pump stations or water reservoirs are located in liquefaction zones per King County maps. However, SCWSD has concerns regarding water reservoirs and have been evaluating and upgrading them with seismic retrofitting.	Damage to all water and sewer facilities including water storage, the water distribution system, and the sewer collection system.
<b>Flood</b>	Approximately 3% of the total land area served by SCWSD is within the 100-Year Floodplain Hazard Area.	SCWSD has 4 sewer lift stations, LS 12, 14, 15, and 31, and 16 sewer mains that are located within the 100-year floodplain. Additionally, there are 4 existing watermains that cross Soos Creek and are located within the 100-year floodplain.	Damage to sewer lift station and loss of sewer service for customers.
<b>Landslide</b>	Less than 1% of the total land area served by SCWSD is within Landslide Hazard Areas	Low probability of landslides impacting facilities.	Damage from landslide would greatly reduce water and sewer service availability, reliability and quality.
<b>Severe Weather</b>	Drought, Tornado, Wind Events, and Severe Storm Events pose minimal risk to water and sewer facilities.	Most facilities are located underground or within concrete structures so direct damage to assets is minimal. Facilities are vulnerable to power failure, but many have backup power generation or the ability to connect portable generators.	Severe weather could damage above ground water and sewer facilities and/or result in a power failure. Potential loss of water and sewer services for customers.
<b>Severe Winter Weather</b>	Winter weather may cause freezing in water distribution system. This poses minimal risk as utilities have been buried with appropriate cover.	Above ground water reservoirs and distribution appurtenances may be frozen, damaging existing water systems if long periods of abnormal water conditions, but generally unlikely in the Puget Sound climate. Facilities are vulnerable to power failure, but many have backup power generation or the ability to connect portable generators.	Severe winter weather could damage above ground water and sewer facilities and/or result in a power failure. Potential loss of water and sewer services for customers.



<b>Tsunami</b>	SCWSD is located inland and is at minor risk from Tsunami's originating from the Pacific Ocean.	N/A	N/A
<b>Volcano</b>	There are 5 active volcanoes in the Cascade Mountain range that pose a risk to SCWSD. The closest is Mount Rainier. SCWSD is a considerable distance away from Mount Rainier to receive damage from blast or pyroclastic flows but may receive ashfall.	If SCWSD were to receive ashfall, public health would decline, increasing demand of water. In addition, water quality may decrease as SCWSDs main source of water, Lake Youngs, would be exposed to falling ash.	N/A
<b>Wildfire</b>	Wildfire poses minimal risk to water and sewer assets.	Facilities are vulnerable to power failure, but many have backup power generation or the ability to connect portable generators. Transportation routes could be impacted.	As climate change reduces water availability in the summer, more assets are thought to be at risk to a similar event today. Potential loss of power for facilities and thus loss of water and sewer services for customers.
<b>Civil Disturbance</b>	Civil disturbance proposes minimal risk to underground facilities and minimal risk to above ground facilities	Above ground facilities may be damaged during a civil disturbance. Facilities are monitored by SCADA and alarm monitoring and checked routinely. Facilities are also vulnerable to power failure, but many have backup power generation or the ability to connect portable generators.	Damage to critical facilities is possible.
<b>Cyber Attack</b>	Telemetry information for water and sewer system would be at risk. Billing and customer information could also be vulnerable.	A lack of telemetry may lead to inability to respond to damage in either the water or sewer system. Security measures are in place to protect customer information and facility telemetry system.	Loss of water and sewer system control. Damage to critical facilities or theft of customer information.
<b>Dam Failure</b>	The only upstream dam is the Chester Morse Dam. The failure of this Dam would reduce the available water provided from Seattle Public Utilities.	Initial washout from dam failure could damage facilities. Chester Morse Lake would likely be drained and there would be a lack of water supply at Lake Youngs.	Lower water supply.



<b>Hazardous Materials Incident</b>	Hazardous Materials Incident poses a minimal threat to water and sewer systems.	Drinking water quality may be reduced. Damage to existing facilities including pumps and storage.	Damage to critical facilities.
<b>Public Health Emergency</b>	Water and sewer systems would be vulnerable due to lack of maintenance from lack of staff. In addition, water and sewer systems will be in higher demand, placing more stress on the existing systems.	Water and sewer systems at a higher risk under normal operating conditions and potential lack of personnel.	Damage to critical facilities, lack of supply and/or capacity.
<b>Structure Fire</b>	Minimal risk for underground facilities. Above ground facilities such as water reservoirs could be at risk.	Potential loss of system capacity or ability to provide water and sewer services.	Damage to critical facilities.
<b>Terrorism</b>	SCWSD water and sewer appurtenances at risk.	Potential loss of system capacity or ability to provide water and sewer services.	Damage to critical facilities. SCWSD is required under the 2018 America's Water Infrastructure Act to complete and certify a Risk and Resiliency Assessment by December 31, 2020 based on its population served. SCWSD must update its Emergency Response Plan 6 months after certifying its Risk and Resiliency Assessment. This furthers the work in the Hazard Mitigation Plan that is addressed herein.

\* All hazards have been mapped at a regional level per King County.



## Hazard Overview Map

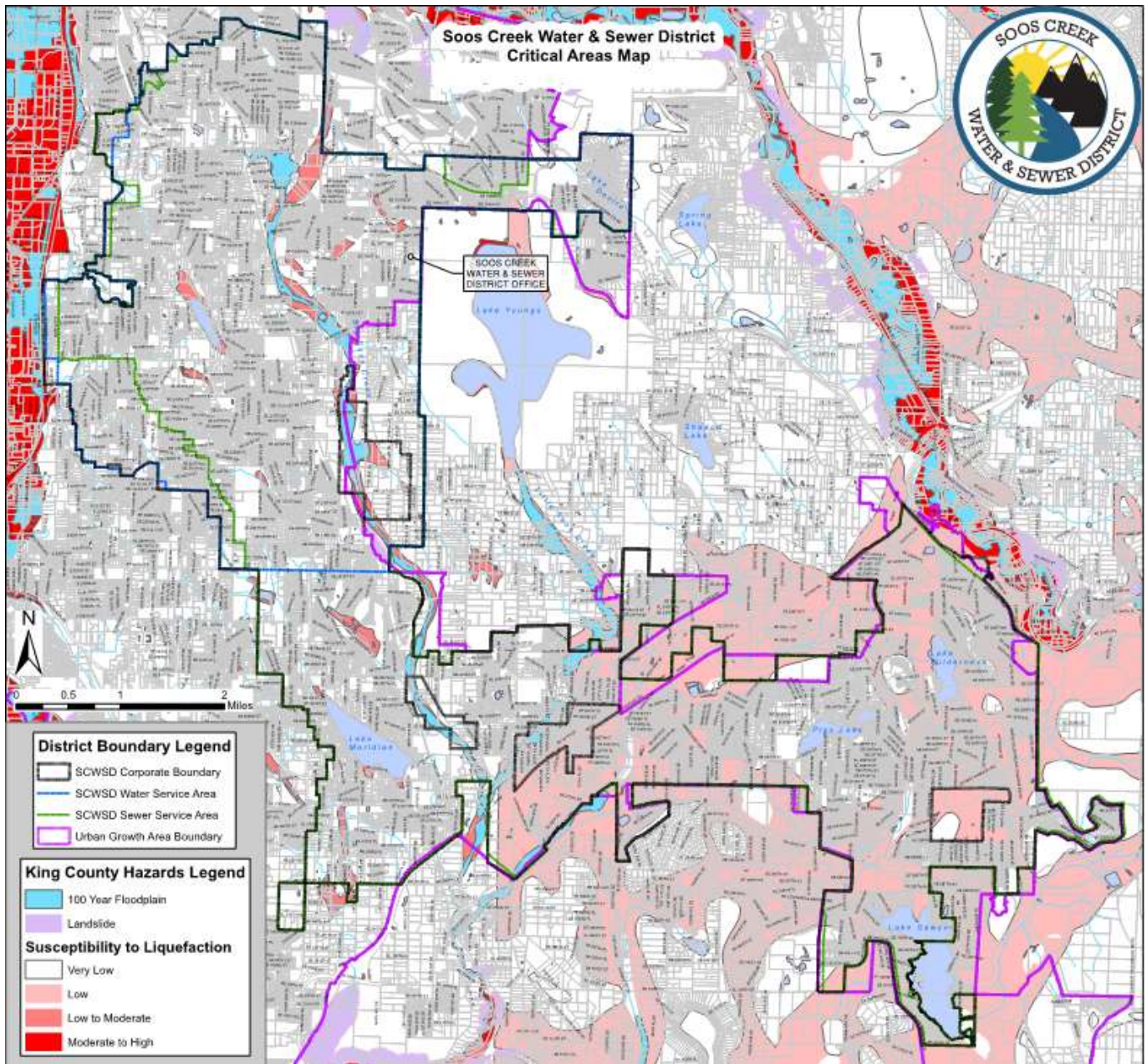


Figure 2: SCWSD Water and Sewer Service Limits and Hazards Map.

Facilities information is not included herein due to its sensitive nature. This information can be found by contacting SCWSD office to review.



## Assets at Risk

SCWSD has more than 1,218,000 miles of water pipe, 2,885,000 miles of sewer pipe, five water pump stations, four reservoirs, and 31 sewer lift stations that are all critical to its operation. Only facilities that are in mapped hazard areas are listed in the following table:

ASSET	VALUE (\$)*	RISK SUMMARY**	VULNERABILITY SUMMARY	IMPACT SUMMARY
LS 36	\$274,653	Liquefaction	Damage to lift station	Loss of service
LS 35	\$276,649	Liquefaction	Damage to lift station	Loss of service
LS 44	\$598,153	Liquefaction	Damage to lift station	Loss of service
LS 40	\$137,463	Liquefaction	Damage to lift station	Loss of service
LS 32	\$418,095	Liquefaction	Damage to lift station	Loss of service
LS 47	\$944,389	Liquefaction	Damage to lift station	Loss of service
LS 38	\$1,414,459	Liquefaction	Damage to lift station	Loss of service
LS 15B	\$1,414,459	Liquefaction	Damage to lift station	Loss of service
LS 34	\$141,446	Liquefaction	Damage to lift station	Loss of service
LS 43	\$399,979	Liquefaction	Damage to lift station	Loss of service
LS 11B	\$11,146,597	Liquefaction	Damage to lift station	Loss of service
LS 24	\$82,396	Liquefaction	Damage to lift station	Loss of service
LS 28B	\$141,446	Liquefaction	Damage to lift station	Loss of service
LS 45	\$569,671	Liquefaction	Damage to lift station	Loss of service
LS 20	\$84,869	Liquefaction	Damage to lift station	Loss of service
LS 39	\$282,892	Liquefaction	Damage to lift station	Loss of service
LS 20	\$84,869	Liquefaction	Damage to lift station	Loss of service
LS 5B	\$1,092,633	Liquefaction	Damage to lift station	Loss of service
LS 9	\$123,595	Liquefaction	Damage to lift station	Loss of service
LS 10B	\$11,167,546	Liquefaction and Flood	Damage to lift station	Loss of service
LS 14	\$205,989	Flood	Damage to lift station	Loss of service
LS 15	\$1,414,459	Flood	Damage to lift station	Loss of service
LS 31	\$84,869	Flood	Damage to lift station	Loss of service
LS 12	\$137,326	Flood	Damage to lift station	Loss of service
40% of Sewer System	\$924,051,840	Liquefaction and/or Flood	Damage to sewer collection system	Loss of service, environmental impacts, health issues.
10% of Water System	\$42,632,765	Liquefaction and/or Flood	Damage to water distribution system	Loss of service, reduced water quality.

\*Based on 2019 insurance values

\*\*Based on King County mapped hazards



## Plan Update Process

SCWSD has continued to participate in the development of the Regional Hazard Mitigation Plan through King County as subsequent updates. The process used to prepare this annex is mirrored in the Plan’s organization. SCWSD used a stepped process that follows the guidelines suggested by the Federal Emergency Management Agency and the Washington State Emergency Management Division.

- The first step was to confirm SCWSDs goals, policies, and commitments related to hazard mitigation.
- Then, hazards affecting SCWSD were identified.
- The next two steps were to determine the potential for damage to SCWSD facilities by the hazards identified in the Assets at Risk section of this plan and to assess the activities SCWSD has currently taken to mitigate potential hazard damage.
- Following this, it was necessary to identify SCWSDs hazard mitigation goals and describe the strategy SCWSD will take to achieve these goals.
- Next, SCWSD documented its public involvement process holding two public outreach events. The first event was a joint study session with the City of Maple Valley City Council on September 23, 2019. The second event was hosting a booth at the Emergency Preparedness Fair in Maple Valley on September 28, 2019.
- Upon preliminary approval given by the government agencies, SCWSD Board of Commissioners will adopt the Hazard Mitigation Plan, concluding it outreach efforts.
- The final step of describing how the Plan will be monitored and maintained in the future is included in this document.

### Plan Update Timeline

PLANNING ACTIVITY	DATE	SUMMARY	ATTENDEES
<b>Regional Hazard Mitigation Workshop</b>	12/13/2018	Risk Assessments	King County, Regional Participants, and SCWSD Planning Team
<b>Introduction Meeting</b>	3/14/2019	Introduction/Overview of HMP Planning Process. Discuss template requirements.	SCWSD Planning Team
<b>Regional Hazard Mitigation Workshop</b>	6/27/2019	HMP Workshop – Identifying hazards	King County, Regional Participants, and SCWSD Planning Team
<b>Hazard Identification, Strategy, and Vision Meeting</b>	8/15/2019	Identifying natural hazards that threaten the SCWSD water and sewer infrastructure, determining mitigation methods and applications, and establishing vision.	SCWSD Planning Team
<b>City of Maple Valley Study Session</b>	9/23/2019	Providing an overview of the SCWSD hazard mitigation plan to the City of Maple Valley City Council and the Public	General Public, Maple Valley City Council, and SCWSD Planning Team
<b>City of Maple Valley Emergency Preparedness Fair</b>	9/28/2019	Providing an overview of the SCWSD hazard mitigation plan to the general public.	General Public and SCWSD Planning Team





### Jurisdiction Planning Team

NAME	TITLE	ORGANIZATION	CONTRIBUTION
Ron Speer	General Manager	SCWSD	Data review, hazard identification, strategy evolution
Ken Van Den Bergh	Field Superintendent	SCWSD	Data review, hazard identification, strategy evolution
Pam Cobley	Project Manager	Stantec	Data review, hazard identification, strategy evolution, HMP development
Mitchell Boyd	Engineer in Training	Stantec	Data review, hazard identification, strategy evolution, HMP development

### Public Outreach

#### Public Outreach Events

EVENT	DATE	SUMMARY	ATTENDEES
Maple Valley Study Session	9/23/2019	Opportunity for public to be educated on local natural hazards and how local municipalities and utilities are mitigating them.	Maple Valley City Council, Maple Valley General Public, City of Covington, Cedar River Water and Sewer District, SCWSD Planning Team
Maple Valley Emergency Preparedness Fair	9/28/2019	Outreach event to educate public on localized natural hazards and how the utilities are planning to mitigate their impacts to critical facilities.	General Public, SCWSD Planning Team
Public Comments	9/23-10/4	Any public input regarding hazard mitigation was documented and is on file at SCWSD office, as needed.	General Public



## Soos Creek Water and Sewer District Hazard Mitigation Program

Hazard mitigation strategies were developed through a two-step process. SCWSD formed 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.

Hazard mitigation strategies in SCWSD include the implementation of Shake Alert for critical water and sewer facilities, the replacement of vulnerable asbestos concrete (AC) pipeline, and emergency water supply.

### Plan Monitoring, Implementation, and Future Updates

SCWSD participates in the mitigation plan monitoring. Updates on mitigation projects are solicited by King County for inclusion in the countywide annual report. As part of participating in the 2020 update to the Regional Hazard Mitigation Plan, SCWSD agrees to convene its internal planning team to review progress on hazard mitigation strategies on an ongoing basis and to update the plan based on new data or recent disasters.

The next plan update is expected to be due in April 2025. It is anticipated that SCWSD will commit to participate during the next planning process.

### Continued Public Participation

SCWSD and its partner cities maintain substantial public outreach capabilities, focusing on personal preparedness and education. Information on ongoing progress in implementing the hazard mitigation plan will be integrated into public outreach efforts. This will provide SCWSD customers, already engaged in personal preparedness efforts, with context and the opportunity to provide feedback on SCWSDs progress and priorities in large-scale mitigation. In the vertical integration of risk-reduction activities from personal to local to state and federal, it is important that the public understand how its activities support, and are supported by, larger-scale efforts.

### Plan Goals

As SCWSD will be annexed under King County’s Hazard Mitigation Plan, SCWSD will adopt the goals established by King County’s Regional Hazard Mitigation Steering Committee. This committee has adopted King County’s Determinants of Equity as their mitigation plan goals. These include:

1. Access to affordable, healthy food,
2. Access to health and human services
3. Access to parks and natural resources
4. Access to safe and efficient transportation
5. Affordable, safe, and quality housing
6. Community and public safety
7. Early childhood development
8. Economic development
9. Equitable law and justice system
10. Equity in government practices
11. Family wage jobs and job training
12. Health built and natural environments
13. Quality education
14. Strong, vibrant neighborhoods

Of these goals, the most applicable goals SCWSD will pursue related to the hazard mitigation plan are goals 2, 6, 10, 12, and 14.



## Hazard Mitigation Authorities, Responsibilities, and Capabilities

### *Plans*

PLAN TITLE	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
<b>Water and Sewer Comprehensive Plan</b>	SCWSD	General Manager	Supports efforts to mitigating impacts to critical facilities by hazards found in the hazard mitigation plan.
<b>Emergency Response Plan</b>	SCWSD	General Manager	Provides steps to respond to hazard events. SCWSD staff are regularly trained to implement these steps.
<b>Capital Improvement Plan</b>	SCWSD	General Manager	Prioritized list of projects that are implemented annually. Some of these projects address hazards identified herein.
<b>Vulnerability Assessment (2003)</b>	SCWSD	General Manager	Assessment of vulnerabilities of critical facilities to malevolent events.
<b>Risk and Resiliency Assessment</b>	SCWSD	General Manager	New requirement to assess critical facilities in the event of malevolent events, cyber-attacks, and natural hazards every 5 years. SCWSD certification is due Dec 31, 2020.

### *Programs, Policies, and Processes*

PROGRAM/POLICY	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
<b>Emergency Response Program</b>	SCWSD	General Manager	Training and preparing for disaster response.
<b>Mutual Aide Agreement</b>	SCWSD	General Manager	SCWSD participates in Mutual Aid Agreements with adjacent jurisdiction, King County, and the State of Washington.
<b>Northwest WARN Agreement</b>	SCWSD	General Manager	Collaborative effort between government and private sector critical infrastructure partners with a goal of near real-time information sharing to protect regional/national infrastructures, communities, and the public.
<b>Shake Alert Policy</b>	SCWSD	General Manager	Protection of active water pump stations and sewer lift stations against earthquakes.
<b>InfraGuard</b>	SCWSD	General Manager	Promotes ongoing dialogue and timely communication between its members and the FBI.
<b>Washington State Fusion Center</b>	SCWSD	General Manager	Supports public safety and homeland security missions of state, local, tribal agencies, and private sector entities.
<b>Regional Participation Policy</b>	SCWSD	General Manager	SCWSD will support and participate in applicable regional plans to provide and maintain safe, reliable, and adequate water and sewer facilities for its customers.
<b>Coordination with Adjacent Jurisdictions</b>	SCWSD	General Manager	SCWSD coordinates closely with adjacent jurisdictions to determine applicable



			regulatory requirements, growth projections, and opportunities for joint projects.
<b>Emergency Water Interties Policy</b>	SCWSD	General Manager	SCWSD supports emergency interties with adjacent water system where there is a benefit to the water systems.
<b>SCWSD Administrative Code</b>	SCWSD	General Manager	Ensures new construction meets current standards.
<b>Building Codes</b>	Cities of Auburn, Black Diamond, Covington, Kent, Maple Valley, and Renton as well as King County	Land use agencies	New projects and construction to support mitigation of natural hazards. Projects to be built to current standards that address hazards.
<b>Critical Areas Ordinance</b>	Cities of Auburn, Black Diamond, Covington, Kent, Maple Valley, and Renton, as well as King County.	Land use agencies	New projects and construction to be resistant to natural hazards.

*Entities Responsible for Hazard Mitigation*

<b>AGENCY/ORGANIZATION</b>	<b>POINT OF CONTACT</b>	<b>RESPONSIBILITY(S)</b>
<b>Soos Creek Water &amp; Sewer District</b>	Board of Commissioners	Approving the Annex to the King County Regional Hazard Mitigation Plan and implementation of projects.
<b>Soos Creek Water &amp; Sewer District</b>	General Manager	Development of the Annex to the King County Hazard Mitigation Plan and prioritization and implementation of projects.



## Hazard Mitigation Strategies

Soos Creek Water and Sewer District will be

- installing Shake Alert for existing vulnerable water pumps and sewer lift stations, and reservoirs,
- replacing existing asbestos concrete water and sewer pipelines on an ongoing basis, and
- installing emergency potable water distribution at water tank sites.

### 2015 Hazard Mitigation Strategy Status

STRATEGY	DESCRIPTION	PRIORITY	STATUS
SCSWD #1	Support county-wide initiatives	Low	On-going
SCSWD #2	Participate in the plan maintenance strategy	Low	On-going
SCSWD #3	Retrofit portable generator receptacle at Pump Station #1	Medium	No longer needed
SCSWD #4	Provide a permanent generator at Pump Station #2	Medium	Completed
SCSWD #5	Provide a permanent generator at Pump Station #1	Medium	No longer needed
SCSWD #6	Improve Lift Station #5B's North Force Main to mitigate surcharging during storm events.	Medium	In progress
SCSWD #7	Upgrade the Cascade Interceptor to mitigate surcharging during storm events.	Medium	To be Determined
SCSWD #8	Upgrade Lift Station #12 pumping capacity to alleviate surcharging	Medium	No longer needed
SCSWD #9	Replace Pump Station #1 to improve flow reliability and redundancy in the system	Medium	No longer needed
SCSWD #10	Perform seismic upgrades on Tank #6 to make the tank compliant with current AWWA codes	High	In progress
SCSWD #11	Perform seismic analysis on Tank #5 to determine if it meets current AWWA codes for steel reservoirs	Medium	Completed
SCSWD #12	Replace active asbestos concrete main within the system to mitigate earthquake hazards	Medium	On-Going
SCSWD #13	Loop Closure Program for improved flow reliability and redundancy	Medium	On-Going
SCSWD #14	Update SCWSDs Water Comprehensive Plan	Low	As required by regulatory agency
SCSWD #15	Update SCWSDs Sewer Comprehensive Plan	Low	To be determined

### 2020 Hazard Mitigation Strategies

STRATEGY	LEAD AGENCY/POC	TIMELINE	PRIORITY
Shake Alert	SCWSD, General Manager	2-Year Objectives – Identify facilities that will benefit from Shake Alert. 5-Year Objectives – Prioritize facilities to install Shake Alert. Long-Term Objectives – Install at all critical facilities.	High
Pipeline Replacement	SCWSD, General Manager	2-Year Objectives - Identify sections of asbestos concrete pipeline to be replaced on an on-going basis. 5-Year Objectives- Continue AC Pipeline Replacement Program Long-Term Objectives- Replace all vulnerable AC main and aged pipes in hazard areas.	Medium



<b>Emergency Potable Water Distribution at Tank 6</b>	SCWSD, General Manager	2-Year Objectives - Identify the program objectives and options, develop capital investments and annual maintenance costs for each option, and select the combination of options to meet SCWSDs objectives. 5-Year Objectives - Prepare logistics and operational plans for the selected options, procure the equipment and facilities to implement the selected options, staff training and implementation, and develop community outreach programs for education and response. Long-Term Objectives - Maintain and ensure readiness of the response programs.	High
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### Shake Alert at Critical Facilities

<p>Lead Points of Contact (Title) Soos Creek Water and Sewer District (SCWSD)</p>	<p>Partner Points of Contact (Title) Local land use agencies, as needed</p>	<p>Hazards Mitigated / Goals Addressed Hazards Mitigated: Earthquake and Liquefaction. Goal: 2,6,10,12,14</p>	<p>Funding Sources and Estimated Costs Funding Source: SCWSD operating revenue, HMPG Cost: \$376,000.00</p>
<p>Strategy Vision/Objective</p> <p>The vision of SCWSD is to provide reliable clean water to all its customers. The objective SCWSD is pursuing to help achieve this goal is to install Shake Alert systems at all lift stations, pump stations, and water reservoirs located within liquefaction hazard zones.</p>			
<p>Mitigation Strategy</p> <p>SCWSD will install shake alert systems at all critical facilities that are located within a liquefaction hazard zone. The shake alert system is designed to shut down these critical facilities ahead of an earthquake, reducing potential damage to these facilities.</p>			
<p>2-Year Objectives</p> <p>Identify facilities that will benefit from Shake Alert. Pump stations 1, 4, and 6, water reservoirs 2, 5 and 6, and lift stations 5, 10, 11, and 15 have so far been identified.</p>	<p>5-Year Objectives</p> <p>Prioritize facilities to install Shake Alert. Phase 1 Shake Alert to include pump stations 4 and 6 as well as Tank 6 upgrades (in progress) and Reservoir 1 upgrades.</p> <p>Phase 2 Shake Alert to include water reservoirs 2 and 5 upgrades as well as sewer lift stations 5, 10, 11, and 15.</p>	<p>Long-Term Objectives</p> <p>Install Shake Alert at all critical facilities throughout SCWSD.</p>	
<p>Implementation Plan/Actions</p> <p>SCWSD to determine priorities of facilities which include water pump stations, water reservoirs, and sewer lift stations that are located within liquefaction zones that could benefit from the Shake Alert system. Afterward, SCWSD will prioritize which facilities Shake Alert will be installed according to liquefaction risk, age/material of system, population served, and system redundancy. SCWSD will then install Shake Alert in accordance with its improvement priority list.</p>			
<p>Performance Measures</p> <p>SCWSD will perform local Shake Alert testing to verify facilities shut down as designed. If the Shake Alert system is functioning properly, then critical facilities will shut down prior to an earthquake, reducing risk of damage to the facilities.</p>			



Asbestos Concrete Pipeline Replacement Program			
Lead Points of Contact (Title) Soos Creek Water and Sewer District (SCWSD)	Partner Points of Contact (Title) Local Land Use Agencies	Hazards Mitigated / Goals Addressed Hazards Mitigated: Earthquake and Liquefaction. Goal: 2,6,10,12,14	Funding Sources and Estimated Costs Funding Source: SCWSD Operating Revenues, PWTf, DWSRF, HMPG Cost: \$400,000 annually
<p>Strategy Vision/Objective</p> <p>The vision of SCWSD is to provide reliable clean water services to all its customers. The objective SCWSD is pursuing to help achieve this goal is to replace aging asbestos concrete water mains.</p>			
<p>Mitigation Strategy</p> <p>SCWSD will replace vulnerable asbestos concrete water main that are reaching their useful life expectancy. Replacing the aged and/or poor material pipelines will provide greater pipe strength and resilience to natural hazards, particularly earthquake.</p>			
2-Year Objectives  Identify sections of asbestos concrete water mains to be replaced on an on-going basis.	5-Year Objectives  Continue Water AC Pipeline Replacement Program	Long-Term Objectives  Replace all vulnerable AC water main throughout SCWSD service area.	
<p>Implementation Plan/Actions</p> <p>SCWSD will prioritize which sections of pipeline need to be replaced that are aging, have seen failures, or are located within liquefaction and/or flood zones. These will be prioritized by age, population served, and system redundancy. Design of the pipeline replacement will commence according to the prioritized schedule, followed by construction.</p>			
<p>Performance Measures</p> <p>Annual replacement of vulnerable water mains.</p>			





### Emergency Potable Water Distribution

Lead Points of Contact (Title) Soos Creek Water and Sewer District (SCWSD)	Partner Points of Contact (Title) King County	Hazards Mitigated / Goals Addressed Hazards Mitigated: Earthquake and Liquefaction. Goal: 2,6,10,12,14	Funding Sources and Estimated Costs Funding Source: SCWSD operating revenues, HMPG, PWTF, DWSRF Cost = \$50,000
<b>Strategy Vision/Objective</b>  Establish a comprehensive plan to develop an emergency response water supply for the community in the event the public water system is damaged and offline as a result of a seismic event or malevolent act.			
<b>Mitigation Strategy</b>  Providing limited water supply during an emergency can be accomplished by a variety of methods. Developing an effective plan will require a methodical approach to identifying the options, equipment required, facilities required, capital costs, annual maintenance costs, logistics, ranking and selecting the appropriate options, and developing the implementation schedule.			
<b>2-Year Objectives</b>  Identify the program objectives and options  Develop capital investments and annual maintenance costs for each option.  Select the combination of options to meet SCWSDs objectives.	<b>5-Year Objectives</b>  Prepare logistics and operational plans for the selected options.  Procure the equipment and facilities to implement the selected options.  Staff training and implementation.  Develop community outreach programs for education and response.	<b>Long-Term Objectives</b>  Maintain and ensure readiness of the response programs.	
<b>Implementation Plan/Actions</b>  The initial action will be the development of a high-level planning scoping memorandum which outlines the objectives and milestones for the development of the emergency response program and criteria for the development and ranking of options to provide emergency water supply.  The follow up action will be to develop a formal plan which includes a comprehensive list of options with associated capital investments and annual maintenance costs, a response plan which includes logistics, staff training and public outreach plans.  The project will conclude with a formal plan to procure the required equipment and facilities and a schedule for program readiness.			
<b>Performance Measures</b>  Adherence to approved budgets for the scoping memorandum and formal emergency response plan.  Adherence to approved schedules to deliver the scoping memorandum and formal emergency response plan.  Action by SCWSD to authorize the expenditures and implementation of the recommended response options.			