



King County Water District No. 20 Annex

Introduction

This Document sets forth the Hazard Mitigation Plan for King County Water District No. 20, Burien, Washington. The plan has been prepared in general conformance with requirements of FEMA for local governments to identify actions and activities to reduce the risk of losses from identified hazards. The goal of this plan is to preserve public health, provide essential services, and protect property and the environment, the District will endeavor to mitigate, prepare for, respond to and recover from all natural and technological emergencies and disasters.

King County Water District No. 20 is a municipal Group A Water System serving an urban area of southwestern King County. The District is a public water system dedicated to providing water to 10,500 service connections supporting a customer base of 33,000 Non-Transient Residents and approximately 8,000 Transient Customers. The District entered into a contract with SPU to provide for all the water required to meet the demands of present and future growth within the District. The Service area of the District is a highly developed urban and suburban area's in Unincorporated King County and the cities of Seattle, Tukwila, Sea-Tac and Burien for total area of Approximately 4,496 Acres or 7 square miles. The water system is regulated by the Washington State Department of Health.

Jurisdiction Profile

King County Water District No. 20

- 10,500 Service Connections
- 33,000 Customers
- 7 sq. mi. service area
- 110 miles of water main
- 6 million gallon reservoir



The District is governed by an elected board of three Commissioners with staggered six-year terms. The Board of Commissioners sets policy that is implemented by the Districts General Manager and is charged with legal responsibilities as defined in RCW 57.08.005. Each Board Member resides within the District Boundaries.

Jurisdiction Point of Contact:

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Development Trends

On February 22nd, 2019 King County Water District No. 45 merged into the District. The Approximate boundaries of the merging area where W. Roxbury St on the North, 12th Ave SW on the West, SW 108th St. on the South and 1st Ave S. on the East. This merger increased the Districts service are by about 320 Acres or .5 sq. mi and serves a population of approximately 3,400 residents of Unincorporated King County.



Water system extensions are mainly accomplished through a developer extension process where the developer is responsible for all costs associated with the extension. Where upon completion and acceptance from the Board of Commissioners the developer will convey the extension to the District for operation and maintenance of the facilities.

Jurisdiction Risk Summary

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Hazard Risk and Vulnerability Summary

HAZARD	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Avalanche	N/A	District service areas don't contain mountains	None.
Earthquake	Although the District has experienced earthquakes in the past it has not suffered a loss from a seismic event.	Potential exists for damage to District Facilities, I.E. Warehouse, Office Building, Reservoir, Pumphouse and Water Mains and Apparatuses.	In 2001, during the 6.8 magnitude Nisqually Earthquake the District didn't suffer a loss.
Flood	N/A	Distribution Mains are buried and would continue to function properly in a flood situation. The Warehouse, Office Building, Reservoir and Pumphouse are not located in historical flood areas	The District has not experienced any loss due to natural flooding.
Landslide	Approximately 8 mi. of water main are located on steep slopes	Potential exists where facilities such as distribution piping and appurtenances that are constructed or adjacent to steep slopes	The District has not experienced significant impact on its facilities in slide area's.
Severe Weather	The Districts water supply may be endangered by an extreme drought situation.	The Districts water supply is subject to weather conditions and unforeseen emergencies or circumstances.	Though the District has a water shortage contingency plan, this plan has not utilized sense the 1990's
Severe Winter Weather	Loss of Power or telephone communications.	The Warehouse and Office have both been hardened against a power outage threat but the reservoir still needs backup generators installed. Loss of telephone communication is possible during a high wind event.	In a power or telephone outage situation the Reservoir Pumphouse won't be able to support fire suppression activities. District staff have cellphones and radio communication systems for everyday and emergency situations.



Tsunami	Tsunamis can be generated in Puget Sound by both landslides and earthquakes and pose a low risk to water mains at lower elevations	According to a study done by Seattle Emergency Management its unlikely for a Tsunami to be greater than 16’ in elevation within the Puget Sound. https://www.seattle.gov/emergency-management/hazards/tsunamis-and-seiches	The District has not experienced a Tsunami but its unlikely that damage will occur to the Water Mains as they are approximately 125’ above sea level (measured from Google Earth.) it is unlikely to be impacted.
Volcano	Low Risk	Depending on wind direction ash fallout may impact visibility.	May impact emergency response time.
Wildfire	Low Risk	District Boundaries are in highly developed urban and suburban area’s	Urban environment, as such low risk of wild fire.
Civil Disturbance	The probability of damage to any facility is proportionally related to how accessible the facility is to the general public.	The Reservoir is a potential target for civil unrest as it is not occupied or guarded on a continuous basis, except remotely through an alarm system.	Damage to the reservoir could potentially result in environmental damage and if breached would impact the public health.
Cyber Attack	Low Risk	In recent years there has been a growing trend to target small to mid-sized governmental entities with ransom ware attacks	Though the District has never experienced a cyber-attack it could impact Computer Networks and Utility Billing
Dam Failure	N/A	No Dams within District Boundaries	None
Hazardous Materials Incident	N/A	District doesn’t handle or Store Hazardous Materials	None
Public Health Emergency	Low risk from micro-biological organisms or chemical compounds	Public Drinking Water could be contaminated from micro-biological organisms or chemical compounds from backflow	CL2 residuals are monitored daily to protect against micro-biological



			organisms; The District strictly enforces its CCC program to prevent and mitigate potential backflow situations.
Structure Fire	Risk of Electrical Fire or from a target attack from an arsonist.	The Warehouse, Office Building, Reservoir and Pumphouse are potential targets and are at risk of Electrical fires	Structural buildings are primarily concrete and as such, have a low risk of fire.
Terrorism	Is a man-made hazard which can impact selected area's of the water District, Primarily above ground structures, facilities and apparatuses	The Warehouse, Office Building, Reservoir and Pumphouse are potential targets and are at risk of terrorist attack.	The District has not experienced a terrorist attack but the Reservoir would be the most likely target.



Assets at Risk

ASSET	VALUE (\$)	RISK SUMMARY	VULNERABILITY SUMMARY	IMPACT SUMMARY
Six million gallon reservoir	\$7,500,000	medium	Earthquakes could cause fractures in the reservoir due to lateral loading, or soil movement.	Stored water could become contaminated.
4" or smaller pipe 11,060 feet	\$2,212,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading, or soil movement	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
6" pipe 53,890 feet	\$10,778,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading, or soil movement	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
8" pipe 503,611 feet	\$100,722,200	low	Earthquakes could cause pipe or joints to fracture due to lateral loading, or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
10" pipe 9,750 feet	\$2,925,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading, or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
12" pipe 65,030 feet	\$19,509,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading, or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
16" pipe 9,890 feet	\$3,461,500	low	Earthquakes could cause pipe or joints to fracture due to lateral loading or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
20" pipe 8,520 feet	\$3,408,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.



24" pipe 1,750 feet	\$875,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading or soil movement.	Pipe breaks could cause outages in the distribution system, road failures, and property damage.
10 Emergency interties with adjacent water districts	\$400,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading or soil movement.	Pipe breaks could cause outages in the distribution systems, road failures, and property damage.
22 PRV stations	\$1,650,000	low	Earthquakes could cause pipe or joints to fracture due to lateral loading or soil movement.	Pipe breaks could cause outages in the distribution systems, road failures, and property damage.
Water district office, garage, and maintenance shop	\$2,563,744	low	Earthquakes could cause damage to the office, garage, and maintenance shop	Damaged structures could result in loss of data, inventory, equipment, and vehicles

Plan Update Process

This planning process can be divided into three steps:

1. What is valued in our community? (asset assessment)
2. What values are at risk or exposed to hazards? (risk assessment)
3. How will be protect what we value? (strategies)

The hazard mitigation plan for King County Water District #20 was prepared by manager, Mike Martin with contributions from district employee, Andre Cordi. Andre Cordi attended the kick-off meeting for the king county regional hazard mitigation plan update held on November 28th, 2018. Andre Cordi attended the December 13th, 2018 Regional Hazard Mitigation Planning Workshop that addressed Risk Assessments. In that meeting Andre Cordi joined Robin Tischmak from the city of Burien, as well as George Brown from the city of Des Moines, as well as Andrew Larue, supervisor from Valley Vue sewer district and they worked on hazard mitigation plan strategy development. In the breakout session George brown identified a bridge in Des Moines that was a critical access point into the city. Together the team worked on a problem statement and vulnerabilities to that bridge. Robin Tischmak reported out for the group. On July 25th Andre Cordi attended



the Hazard mitigation strategy workshop. In that workshop Andre joined Andrew Larue, supervisor from Valley Vue sewer district. During this session Together they worked on mitigation strategy that included 2-year objectives,5-year objectives, and long-term objectives.

Jurisdiction Planning Team

NAME	TITLE	ORGANIZATION	CONTRIBUTION
Robin Tischmak		City of Burien	Hazard mitigation workshop held on December 13 th , 2018
Andrew Larue	Supervisor	Valley Vue sewer district	Hazard mitigation workshop held on December 13 th , 2018 and, July 25 th , 2019
George Brown		City of Des Moines	Hazard mitigation workshop held on December 13 th , 2018

Plan Update Timeline

PLANNING ACTIVITY	DATE	SUMMARY	ATTENDEES
Hazard Mitigation Workshop kick-off meeting	November 28 th , 2018	The meeting presented an overview of the planning timeline and planning partner expectations	Andre Cordi from King County Water District #20 along with 80 other people representing County and City Agencies
Hazard Mitigation Planning Workshop	December 13 th , 2018	The meeting worked on Hazard Risk Assessment and Hazard Mitigation Plan Strategy Development	Andre Cordi from King County Water District #20 along with 80 other people representing County and City Agencies
Hazard Mitigation Strategy Workshop	July 25 th , 2019	Developing 2 Year, 5 Year, and, long term goals associated with a Hazard Mitigation Project	Andre Cordi from King County Water District #20 along with 80 other people representing County and City Agencies
Review of City of Burien Comprehensive Emergency Management Plan	September 9 th , 2019	Reviewed data from the City of Burien Emergency Plan	Andre Cordi
Review of City of SeaTac Comprehensive	September 9 th , 2019	Reviewed data from the City of SeaTac Comprehensive Plan	Andre Cordi



Plan Chapter 6 Utilities Element			
Review of 2015 Hazard Mitigation Plan	September 10 th ,2019	Reviewed data from the 2015 Hazard Mitigation Plan Chapter 6 City of Burien, Chapter 22 City of SeaTac, Chapter 26 City of Tukwilla	Andre Cordi
Review of 2015 Hazard Mitigation Plan	September 11 th , 2019	Reviewed data from the Hazard Mitigation Plan Chapter 30 Highline Water District, Chapter 41 King County Water District 125,	Andre Cordi
Review of 2015 Hazard Mitigation Plan	September 11 th , 2019	Reviewed data from the Hazard Mitigation Plan Chapter 50 Southwest Suburban Sewer District, Chapter 52 Valley View Sewer District	Andre Cordi

Public Outreach

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Public Outreach Events

EVENT	DATE	SUMMARY	ATTENDEES
City of Burien Farmers Market	September 12 th , 2019	King County Water District #20 had a booth with information about the district and the hazard mitigation process and strategies.	Rick Korakis, and Andre Cordi, King County Water District #20
City of Burien Farmers Marker	September 19 th , 2019	King County Water District #20 had a booth with information about the district and the hazard mitigation process and strategies.	Rick Korakis, and Andre Cordi, King County Water District #20



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The booth that King County Water District #20 set up at the Burien Farmers Market was a huge success. There were examples of cast iron and ductile iron mains that spurned two-way conversations on hazard mitigation. Products from 3Days 3Ways.org, were given out to the public including 40 copies of a 47page magazine on being ready for disasters and emergencies by making a plan, building a kit, and getting involved. Water district representatives were able to explain that every dollar spent on hazard mitigation saves six dollars during an actual disaster and inform the public on upcoming hazard mitigation projects, replacing cast iron mains on 1st Ave. So., and installing a baffle in the reservoir to absorb energy of sloshing water in the event of an earthquake.

One lady in particular approached the booth on September 19th and was delighted to share that because of the magazine she picked up on the 12th from the booth, she did an earthquake drill at her work, The Lien animal clinic in West Seattle, as well as they are stocking up on extra medicine to prepare.

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.

Hazard mitigation strategies in doing a seismic study on the reservoir and also replacing cast iron mains with more durable ductile iron mains helps in achieving hazard mitigation goals. The hazard mitigation plan goals that are going to met by King County Water District #20 are: Safe and efficient transportation, Community and public safety, Strong, vibrant neighborhoods, and family wage jobs and job training.

Plan Goals

List the goals from the base plan, requirement C3.

Plan Monitoring, Implementation, and Future Updates

King County leads the mitigation plan monitoring and update process and schedules the annual plan check-ins and bi-annual mitigation strategy 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, every jurisdiction 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.

As part of leading a countywide planning effort, King County Emergency Management will send to planning partner any federal notices of funding opportunity for the Hazard Mitigation Assistance Grant Program. Proposals from partners will be assessed according the prioritization process identified in this plan and the county will, where possible, support those partners submitting grant proposals. This will be a key strategy to implement the plan.

The next plan update is expected to be due in April 2025. All jurisdictions will submit letters 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

King County and its partner cities already maintains 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 King County residents, already engaged in personal preparedness efforts, with context and the opportunity to provide feedback on the county's 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.

The outreach and mitigation teams will also continue to work with media and other agency partners to publicize mitigation success stories and help explain how



vulnerabilities are being fixed. When possible, public tours of mitigation projects will be organized to allow community members to see successful mitigation in action.

Hazard Mitigation Authorities, Responsibilities, and Capabilities

The District has created 2 strategies to increase the resiliency to natural and man-made disasters throughout the service area. Each year in conjunction with the annual operating and Capital budget review, district staff and Commissioners will review and reprioritize projects identified by Hazard mitigation strategies.

Both budgets include projects identified in the Comp. Plan and this Hazard Mitigation Plan.

Capital projects are currently funded by District rates, loans, and grant programs. The District is able to get bond funding if necessary to complete projects.

Hazard Mitigation Authorities, Responsibilities, and Capabilities Plans

PLAN TITLE	RESPONSIBLE AGENCY	POINT OF CONTACT	RELATIONSHIP TO HAZARD MITIGATION PLAN
Comprehensive Plan	King County Water District #20 and The Washington State Department of Health	Mike Martin	The districts most recent comp. plan was finalized in. The plan identifies critical district assets, anticipated growth and system demand, and the long-term Capital Improvement Program. The plan data was used to inform the Hazard Mitigation Plan. Strategies developed are consistent with comp plan goals and future capital spending projects.
Comprehensive Emergency Management Plan	King County Water District #20	Mike Martin	The strategies developed in the Hazard mitigation update will be used to update the Emergency Management Plan
Capital Facilities Plan	King County Water District #20	Mike Martin	The goals and strategies developed in the Hazard Mitigation Plan are



			approved and funded through the Capital Facilities Plan.
Washington Association of Sewer and Water Districts Mutual Aid Agreement	Washington Association of Sewer and Water Districts	Chris Cordi	The emergency preparedness committee for the Washington Association of Sewer and Water Districts meets every three months and may identify a current hazard that needs to be included in the future hazard mitigation plans

National Flood Insurance Program

As a special purpose district, King County Water District #20 is not subject to the NFIP.

Text

2015 Hazard Mitigation Strategy Status

STRATEGY	DESCRIPTION	PRIORITY	STATUS
WD20-1 New and existing	Continue to support countywide initiatives identified in part 3 of volume 1 of this plan	low	Updated 2020 plan
WD20-2 New and existing	Participate in the plan maintenance strategy identified in part 3 of volume 1 of this plan	low	Updated 2020 plan
WD20-3 Existing	Des Moines Memorial Drive Watermain Replacement North ID-1	Medium	Completed in 2017 and 2018



WD20-4 Existing	South 128 th Street Watermain Replacement ID-2	Low	Short Term Updated 2020 plan Ranked 5 th to replace
WD20-5 Existing	21 st Avenue Southwest Watermain Replacement ID-3	Medium	Completed in 2015
WD20-6	South 101 st Street Water main Replacement ID-4	Low	Completed in 2019
WD20-7	South 104 th street Water main Replacement ID-5	Low	Short Term Updated 2020 plan
WD20-8	14 th Avenue South Watermain Replacement ID-6 Section one	Medium	Completed in 2019
WD20-9	South 102 nd Street Watermain Replacement ID-7	Low	Short Term Updated 2020 plan
WD20-10	South 137 th Street Watermain Replacement ID-8	Low	Short Term Updated 2020 plan
WD20-11	South 138 th /9 th Place South Watermain Replacement ID-9	Low	Short Term Updated 2020 plan
WD20-12	5 th Avenue South Watermain Replacement ID-10	Low	Short Term Updated 2020 plan
WD20-13	South 103 rd Watermain Replacement ID-11	Medium	Completed in 2010



WD20-14	Former Water District 85 Area Hydrant Installation ID-12	Medium	Completed in 2011
WD20-15	Industrial Park Loop Watermain Replacement ID-13	Low	Completed in 2018
WD20-16	South 116 th Street Alley Watermain Replacement ID-14	Low	Short Term Updated 2020 plan
WD20-17	14 th Avenue Watermain Replacement Section 2 ID-15	Low	Short Term Updated 2020 plan Ranked 2 nd to replace
WD20-18	4 th Avenue Southwest Watermain Replacement ID-16	Low	Long Term Updated 2020 plan
WD20-19	4 th Avenue South Watermain Replacement ID-17	Low	Long Term Updated 2020 plan
WD20-20	8 th Place Southwest Watermain Replacement ID-18	Low	Long Term Updated 2020 plan
WD20-21	Southwest 128 th and 14 th Southwest Watermain Replacement ID-19	Low	Long Term Updated 2020 plan
WD20-22	14 th Avenue Watermain Replacement Section 3 ID-20	Low	Short Term Updated 2020 plan Ranked 3 rd to replace
WD20-23	14 th Avenue Watermain Replacement Section 4 ID-21	Low	Short Term Updated 2020 plan Ranked 4 th to replace



WD20-24	6 th Avenue Southwest/121 st Street Southwest Watermain Replacement ID-22	Low	Long Term Updated 2020 plan
WD20-25	South 112 th Street Watermain Replacement ID-23	Low	Long Term Updated 2020 plan
WD20-26	11 th South Watermain Replacement ID-24	Low	Long Term Updated 2020 plan
WD20-27	South 142 nd Place Watermain Replacement ID-25	Low	Long Term Updated 2020 plan
WD20-28	5 th Place South Watermain Replacement ID-26	Low	Long Term Updated 2020 plan
WD20-29	Ambaum Blvd./ 130 th Street Southwest Watermain Replacement ID-27	Low	Long Term Updated 2020 plan
WD20-30	Ambaum Blvd./ 132 nd Street Southwest Watermain Replacement ID-28	Low	Long Term Updated 2020 plan
WD20-31	12 th Avenue South Watermain Replacement ID-32	Low	Long Term Updated 2020 plan
WD20-32	South 136 th Street Watermain Replacement ID-33	Medium	Completed in 2016
WD20-33	6 th Place South Watermain Replacement ID-34	Low	Long Term Updated 2020 plan



WD20-34	21 st Avenue South Watermain Replacement ID-35	Low	Long Term Updated 2020 plan
WD20-35	South 104 th Street Watermain Replacement ID-36	Low	Long Term Updated 2020 plan
WD20-36	South 107 th Street Watermain Replacement ID-37	Low	Long Term Updated 2020 plan
WD20-37	9 th Place South Watermain Replacement ID-38	Low	Long Term Updated 2020 plan
WD20-38	Southwest 136 th Street Off-Street Watermain Replacement ID-39	Low	Long Term Updated 2020 plan
WD20-39	South 99 th Street Watermain Replacement ID-40	Low	Long Term Updated 2020 plan
WD20-40	14 th Avenue South Watermain Replacement ID-41	Low	Long Term Updated 2020 plan
WD20-41	16 th Avenue South/15 th Avenue South Off-Street Watermain Replacement ID-42	Low	Long Term Updated 2020 plan
WD20-42	South 118 th Street Watermain Replacement ID-43	Low	Long Term Updated 2020 plan
WD20-43	South 124 th Street Watermain Replacement ID-44	Low	Long Term Updated 2020 plan



WD20-44	South 121 st Street Watermain Replacement ID-48	Low	Long Term Updated 2020 plan
WD20-45	Preparation for Volcanic Ash (Office and Reservoir) Ash Screens Air Filters and Air Masks	Low	Short Term
WD20-46	Winter and Severe Weather Assessment at Office and Reservoir (Inspect Tall Trees)	Low	Trees cut down at the office and in front of the Reservoir in 2012
WD20-47	Wildfire Assessment (Underbrush on Watermain Easements)	Low	Short Term
WD20-48	Stockpile Watermain Repair Material	Medium	Short Term
WD20-49	Access Public Warning System Options in Case of Hazard (i.e. boil water notice)	Low	Short Term
WD20-50	1 st Avenue South Watermain replacement 110 th to 140 th Street	Medium	Short Term Updated 2020 plan Ranked 1 st to replace

2020 Hazard Mitigation Strategies

STRATEGY	LEAD AGENCY/POC	TIMELINE	PRIORITY
Seismic retrofit on a 6 million gallon reservoir that is shared between 2 water districts	King County Water District #20	Seismic study is to be finished by September 2019	Priority will be determined once the study is complete
Replacement of Cast Iron Watermains	King County Water District #20	In 2020 a 5,000,000.00 1 st Ave. So. Watermain replacement will take place. Each year the amount	Priority will change each year based on previous watermain breaks, age of pipe and which roads are scheduled to be resurfaced.



		will change based on funding	
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Hazard Mitigation Strategy

Lead Points of Contact Mike Martin, Manager at King County Water District #20	Partner Points of Contact (Title) <i>Shane Young, manager King County Water District #125,</i>	Hazards Mitigated / Goals Addressed Community and Public Safety Strong, Vibrant Neighborhoods	Funding Sources and Estimated Costs \$113,000.00 General Fund
<p>Strategy Vision/Objective <i>Long-term objective and vision for the strategy To retrofit the reservoir to be able to survive a Cascadia earthquake with minor or no significant damage</i></p>			
<p>Mitigation Strategy <i>Describe the program/proposed program</i></p> <p><i>The Six million gallon Reservoir that is shared between King County Water District #20, and King County Water District #125 is vital to keeping up with peak demand as well storage for emergencies. The reservoir is located in the Boulevard Park area of Burien on 120th St between 12th Ave. so. and 14th Ave. so. The reservoir survived the Nisqually earthquake of February of 2000 with no damage at all. However, the reservoir could be susceptible to a larger Cascadia event or from one of the three Seattle faults. To help protect from seismic vulnerability, a seismic study should be done on the reservoir and a seismic retrofit if needed.</i></p>			
2-Year Objectives Conduct a seismic study on the reservoir	5-Year Objectives Complete a seismic retrofit on the reservoir	Long-Term Objectives Expand the size of the reservoir if growth dictates it	



Implementation Plan/Actions

This can provide a timeline, indicate partners, discuss implementation stages, etc. Use this to discuss how the strategy/program will be implemented over the long term. Currently a seismic study is underway on the reservoir. The results of this study should be available on September 2019. After the results are known it will be determined when to be able to design a retrofit project and put it out for bid, award and complete the retrofit as part of a 5year objective.

Performance Measures

A retrofit is resilient to protect and provide safe drinking water to the communities that are served by King County Water Districts #20, and #125

Hazard Mitigation Strategy

<p>Lead Points of Contact Mike Martin, Manager of King County Water District #20</p>	<p>Partner Points of Contact <i>Washington State Department of Health City of Burien</i></p>	<p>Hazards Mitigated / Goals Addressed Safe and Efficient Transportation Community and public safety Strong, Vibrant Neighborhoods Family Wage Jobs and Job Training</p>	<p>Funding Sources and Estimated Costs 5,000,000.00 for 2020 Bonds</p>
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Strategy Vision/Objective

To increase the durability of the existing waster system by replacing the cast iron water mains with more durable ductile water main.



Mitigation Strategy

Cast Iron watermains can get ruptures that cause extensive road damage, property damage, and potable water supply outages until repaired.

2-Year Objectives

Replace a 10” cast iron watermain on 1st Ave. So. From 140th to 110th

5-Year Objectives

Continue to replace cast iron watermains annually based on previous watermain breaks, age of pipe and, which roads are scheduled to be resurfaced.

Long-Term Objective

Strengthen the watermain infrastructure and, increase the ability for the district to provide safe and reliable drinking water to its customers during a seismic event.

Implementation Plan/ Actions

Secure funding for watermain replacements
Submit to engineering to develop plans and bid documents along with an engineer estimate.
Advertise a call for bids
Conduct bid openings
Award the bids
Inspect the pipeline replacements

Performance Measures

Complete Annual Watermain Replacements starting with \$5,000,000.00 in 2020 and adjusting the total year to year based on funding.