

KING COUNTY WATER DISTRICT NO. 90

KING COUNTY, WASHINGTON

RESOLUTION NO. 981

A RESOLUTION of the Board of Commissioners of King County Water District No. 90, King County, Washington, authorizing the adoption of the King County Regional Hazard Mitigation Plan Update.

WHEREAS, all of King County has exposure to natural hazards that increase the risk of life, property, environment and the County's economy; and

WHEREAS, pro-active mitigation of known hazards before a disaster event can reduce or eliminate long-term risk to life and property; and

WHEREAS, The Disaster Mitigation Act of 2000 (Public Law 106-390) established new requirements for pre- and post-disaster hazard mitigation programs; and

WHEREAS, a coalition of King County, Cities, Towns and Special Purpose Districts with like planning objectives has been formed to pool resources and create consistent mitigation strategies within the King County planning area; and

WHEREAS, the coalition has completed a planning process that engages the public, assesses the risk and vulnerability to the impacts of natural hazards, develops a mitigation strategy consistent with a set of uniform goals and objectives, and creates a plan for implementing, evaluating and revising this strategy;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COMMISSIONERS OF KING COUNTY WATER DISTRICT NO. 90:

Section 1: Adopts in its entirety, Volume 1 and the introduction, Chapter 39 of the King County Water District No. 90 jurisdictional annex, and the appendices of Volume 2 of the King County Regional Plan Update (RHMP).

Section 2: Will use the adopted and approved portions of the RHMP to guide pre- and post-disaster mitigation of the hazards identified.

Section 3: Will coordinate the strategies identified in RHMP with other planning programs and mechanisms under its jurisdictional authority.

Section 4: Will continue its support of the Steering Committee and continue to participate in the Planning Partnership as described by the RHMP.

Section 5: Will help to promote and support the mitigation successes of all RHMP Planning Partners.

ADOPTED by the Board of Commissioners of King County Water District No. 90, King County, Washington at its regular, open public meeting thereof held on 7th day of October, 2014.

B. V. Gudrun 10-7-14
Ann Clavin 10/7/14
Ry O. M. 10/7/14

CHAPTER 39. KING COUNTY WATER DISTRICT NO. 90 ANNEX

39.1 HAZARD MITIGATION PLAN POINT OF CONTACT

Primary Point of Contact

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39.2 JURISDICTION PROFILE

King County Water District No. 90 is located between the cities of Renton and Issaquah, Washington with Cougar Mountain to the north and the Cedar River to the south. The District was incorporated in 1952 with a service area of approximately five square miles and served the rural area outside of the Renton city limits. At the present time, the District covers an area of 15.5 square miles and ranges in elevations between 100-to-1,400 feet. The District currently provides all domestic and fire protection needs to a population of approximately 20,000 customers or 7,600 households, 140-plus businesses, a portion of the Renton and Issaquah School Districts, and Fire Districts No. 10 and No. 25.

Water District No. 90 is a rapidly growing suburb “bedroom community” of the city of Seattle with a diverse economic community. By area, the District is currently comprised of one- third urban and two-thirds rural. The District is governed by a Board of Commissioners with three members. The Board of Commissioners will assume responsibility for the adoption of this plan; The General Manager will oversee its implementation.

The present Board of Commissioners and management staff supporting the District, recognize the need to improve the system operations and communications with other jurisdictions. In the past ten years, the District has invested approximately \$12 million to improve the system. In order to reduce the impact to our service community resulting from a disaster, the District maintains design standards, preventative maintenance and operational procedures, and emergency training programs. Funding for the District comes primarily through rates.

The following is a summary of key information about the jurisdiction:

- **Population Served**—20,000 (Estimate in 2013)
- **Land Area Served**—15.5 square miles
- **Value of Area Served**—The estimated value of the area served by the jurisdiction is \$2,200,000,000
- **Land Area Owned**—15 acres
- **List of Critical Infrastructure/Equipment Owned by the Jurisdiction:**
 - Water Treatment Plant \$3,500,000
 - Well Field \$2,500,000

- 8 Pump Stations \$5,000,000
- 8 Storage Reservoirs \$8,000,000
- 124 Miles of Transmission & Water Main \$99,000,000
- 800 Fire Hydrants \$4,000,000
- 20 Pressure Reducing Stations \$2,000,000
- Construction Equipment \$750,000
- **Total Value of Critical Infrastructure/Equipment**—The total value of critical infrastructure and equipment owned by the jurisdiction is \$124,750,000
- **List of Critical Facilities Owned by the Jurisdiction:**
 - Administration and Operation Buildings \$3,000,000
 - Water Treatment Plant \$3,500,000
 - Well Field \$2,500,000
 - 8 Pump Stations \$5,000,000
 - Transmission Mains \$5,000,000
 - 6 Storage Reservoirs \$7,000,000
- **Total Value of Critical Facilities**—The total value of critical facilities owned by the jurisdiction is \$26,000,000
- **Current and Anticipated Service Trends**—The District has experienced a 2 percent growth over the last five years. If the urban Growth Boundary changed, this growth would most likely increase to about 5 percent per year. The Water Systems backbone (transmission mains) is designed for this growth.

39.3 APPLICABLE REGULATIONS AND PLANS

The following existing codes, ordinances, policies or plans are applicable to this hazard mitigation plan:

- Safe Drinking Water Act
- State of Washington RCW Title 57 Water-Sewer Districts
- 2008 Comprehensive Water System
- 2004 Regional Hazard Mitigation Plan of King County
- 2009 Hazard Mitigation Plan
- KCWD No. 90 Emergency Response Plan
- Participant and Member of WA WARN
- Mutual Aid and Assistance Agreement for Washington State for Intrastate Water/Wastewater Agency Response Network.
- Capital Improvement Plan 2013
- Developer Extension Agreement
- Cross Connection Control Program
- Coliform Monitoring Plan 2013
- Water Shortage Contingency Plan 2004

39.4 JURISDICTION-SPECIFIC NATURAL HAZARD EVENT HISTORY

Table 39-1 lists all past occurrences of natural hazards within the jurisdiction. This list of natural hazard events is not a comprehensive list of events that have impacted the District's operations. The list was created from discussing past events with current District staff. Some events that impacted the District may have been unintentionally forgotten, or are unknown to the current staff.

TABLE 39-1. NATURAL HAZARD EVENTS			
Type of Event	FEMA Disaster # (if applicable)	Date	Preliminary Damage Assessment
Severe Winter Storm	DR-4056	1/12/2012	\$10,000
Severe Winter Storm	DR-1963	1/11/2011	\$5,000
Severe Winter Storm Near Record Snow	DR-1825	12/12/2008	\$20,000
Severe Winter Storm	DR-1682	12/14/2006	\$10,000
Wind	NA	4/27/2004	\$10,000
Winter Weather	NA	1/06/2004	\$10,000
Earthquake - Landslide	DR-1361	2/28/2001	\$28,000
High Winds	DR-1079	11/07/1995	\$40,000
High Winds	DR-981	1/20/1993	\$10,000

39.5 HAZARD RISK RANKING

Table 39-2 presents the ranking of the hazards of concern.

TABLE 39-2. HAZARD RISK RANKING		
Rank	Hazard Type	Risk Rating Score (Probability x Impact)
1	Earthquake	54
2	Severe Winter Weather	54
3	Severe Weather	45
4	Dam Failure	20
5	Landslide	15
6	Flood	12
7	Avalanche	0
8	Tsunami	0
9	Volcano	0
10	Wildfire	0

39.6 HAZARD MITIGATION ACTION PLAN AND EVALUATION OF RECOMMENDED INITIATIVES

Table 39-3 lists the initiatives that make up the jurisdiction's hazard mitigation plan. Table 39-4 identifies the priority for each initiative. Table 39-5 summarizes the mitigation initiatives by hazard of concern and the six mitigation types.

TABLE 39-3. HAZARD MITIGATION ACTION PLAN MATRIX							
Applies to Existing or New Assets		Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost ^a	Sources of Funding	Timeline
WD90-1 Continue to support county-wide initiatives identified in Part 3 of Volume 1 of this plan							
New and Existing	All Hazards	All Objectives	Water District 90	Low	District Funds	Ongoing	
WD90-2 Participate in the plan maintenance strategy identified in Part 3 of Volume 1 of this plan							
New and Existing	All Hazards	All Objectives	Water District 90	Low	District Funds	Ongoing	
WD90-3 Seismic upgrades/retrofits to District Pump Stations 4, 5, 6, 7 and 8 including building, electrical systems with variable frequency drives and auto transfer switches.							
Existing	Earthquake, Severe Weather	1, 2, 3, 4, 5, 8	Water District 90	Med, \$300,000	District Funds, HMGP, PDM Grant & Loans	Ongoing	
WD90-4 Training and Testing of Emergency Power Systems							
Existing,	Earthquake, Severe Weather	1, 2, 3, 4, 5, 8	Water District 90	Low, \$10,000	General Fund,	Ongoing	
WD90-5 Harden Water System - Replace 14,000+’ of 10 AC Pipe with 12” DI Pipe – 550 & 744 Zones							
Existing	Earthquake	1, 2, 3, 5, 8	Water District 90	High, \$3,800,000	District Funds, PDM Grant & Loans	Long-term	
WD90-6 Harden Water System - Replace 18,000+’ AC & Steel Pipe with 8’ DI Pipe – 744 & 804 Zones							
Existing	Earthquake	1, 2, 3, 5, 8	Water District 90	High, \$4,300,000	District Funds, PDM Grant & Loans	Long-term	
WD90-7 Public Awareness and Emergency Preparedness Program							
Existing and New	All Hazards	All Objectives	Water District 90	Low \$5,000/year	District Funds	Ongoing	
WD90-8 Enhance Communication with UHF Radio System							
New	All Hazards	All Objectives	Water District 90	Low \$30,000 for installation \$5,000/year	District Funds, Loans	Short-term, Ongoing	

**TABLE 39-3.
HAZARD MITIGATION ACTION PLAN MATRIX**

Applies to Existing or New Assets	Hazards Mitigated	Objectives Met	Lead Agency	Estimated Cost ^a	Sources of Funding	Timeline
WD90-9 Harden Telemetry System Communications with Radio/Cellular – Pump Stations 4, 5, 6, 7, 8, Well and Water Treatment Plant.						
Existing	All Hazards	1, 2, 3, 5, 8	Water District 90	Low \$20,000 for installation \$5,000/Year	District Funds, Loans, HMGP	Long-term, Ongoing
WD90-10 Pump Stations Bypass System - Pump Stations 4, 5, 6, 7 and 8 – Provides the ability to pump around a pump station after a full failure of the Electrical system.						
Existing	All Hazards	1, 2, 3, 5, 8	Water District 90	Low, \$100,000	District Funds, Loans, HMGP, PDM Grants	Long-term
WD90-11 Install 2,300' for 8" DI water main and PRV station on 154th PL SE from Jones Rd to SE 142nd PL (Only main serving this area is in a landslide prone area.						
New	All Hazards	1, 2, 3, 5, 8	Water District 90	High, \$800,000	HMGP, PDM Grants	Long-term
WD90-12 Install Third Pump with variable frequency drive at Pump Station #2 for emergency supply to 744 and 804 zones, Landfill and Co-Generation Plant.						
New	All Hazards	1, 2, 3, 5, 8	Water District 90	Med, \$100,000	District Funds, Loans, HMGP, PDM Grants	Long-term
WD90-13 Install 500,000 Gal Storage Tank Maple Hills for 744 and 804 Zones for emergency supply.						
New	All Hazards	1, 2, 3, 5, 8	Water District 90	High, \$700,000	HMGP, PDM Grants	Long-term
a. Costs are in 2014 Dollars AC Pipe =Asbestos Cement Pipe; DI =Ductile Iron Pipe						

TABLE 39-4.
MITIGATION STRATEGY PRIORITY

Initiative #	# of Objectives Met	Benefits	Costs	Do Benefits Equal or Exceed Costs?	Is Project Grant-Eligible?	Can Project Be Funded Under Existing Programs/ Budgets?	Priority ^a
WD90-1	15	Medium	Low	Yes	Yes	Yes	High
WD90-2	15	Medium	Low	Yes	Yes	Yes	High
WD90-3	6	High	Medium	Yes	Yes	Possibly	Medium
WD90-4	6	High	Low	Yes	Yes	Yes	High
WD90-5	5	High	High	Yes	Yes	Possibly	Medium
WD90-6	5	High	High	Yes	Yes	Possibly	Medium
WD90-7	15	Medium	Low	Yes	Yes	Yes	High
WD90-8	15	Medium	Low	Yes	Yes	Yes	Medium
WD90-9	5	High	Low	Yes	Yes	Yes	Medium
WD90-10	5	Medium	Low	Yes	Yes	Yes	Medium
WD90-11	5	High	High	Yes	Yes	Possibly	Medium
WD90-12	5	High	Medium	Yes	Yes	Possibly	Medium
WD90-13	5	High	High	Yes	Yes	Possibly	Medium

a. See Introduction for explanation of priorities.

**TABLE 39-5.
ANALYSIS OF MITIGATION INITIATIVES**

Hazard Type	Initiative Addressing Hazard, by Mitigation Type ^a					
	1. Prevention	2. Property Protection	3. Public Education and Awareness	4. Natural Resource Protection	5. Emergency Services	6. Structural Projects
Avalanche	—	—	—	—	—	—
Dam Failure	1, 2	—	1, 2, 9	—	10, 11, 12,	—
Earthquake	1, 2	3, 5, 6, 7, 8	1, 2, 9	—	3, 4, 10, 11, 12	3
Flood	1, 2	—	1, 2, 9	—	10, 11, 12	—
Landslide	1, 2, 13	13	1, 2, 9	—	10, 11, 12, 13	—
Severe Weather	1, 2	3	1, 2, 9	—	3, 4, 10, 11, 12	3
Severe Winter Weather	1, 2	3	1, 2, 9	—	3, 4, 10, 11, 12	3
Tsunami	—	—	—	—	—	—
Volcano	—	—	—	—	—	—
Wildfire	—	—	—	—	—	—

a. See Introduction for explanation of mitigation types.

