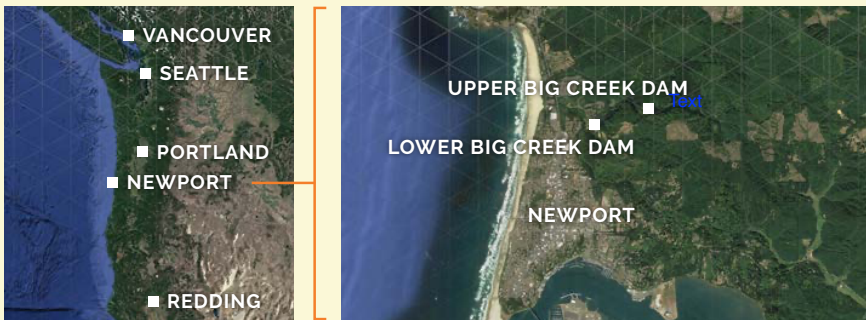




## Big Creek Dams Improvement Project



The Big Creek Dams are located in the City of Newport, on Oregon's Central Coast.

### STATEMENT OF NEED

- If the dams fail due to seismic vulnerability:
- Newport's sole water supply will be impaired for years
  - Bridge failures and landslides will block access roads
  - The City will be isolated for long periods of time adversely affecting the population, regional economy and environment

### SOLUTION

To obtain the funding to design and construct a Big Creek replacement dam.

### Background Information

#### Construction

- Earthen dams
- 1951: Big Creek Dam #1 (Lower Dam)
- 1969: Big Creek Dam #2 (Upper Dam)

#### Reservoir (Water Storage) Capacity

1200 acre-feet of water  
(390 million liquid gallons)

#### Water Usage

- Winter (year-round residents):  
2.5 million gallons/day
- Summer (peak tourist season):  
5 million gallons/day

#### Water Supply At Capacity

- The Big Creek Reservoirs are Newport's sole water supply
- Reservoirs support today's residential and tourist needs, but are functioning at maximum capacity; restricting Newport's future growth and negatively impacting its economy
- Current water supply is not sized to accommodate future demand or growth
- Reservoirs are unable to store sufficient water to avoid critically-low water levels during peak demand times

### Current Situation

#### Seismically Unstable Water Infrastructure

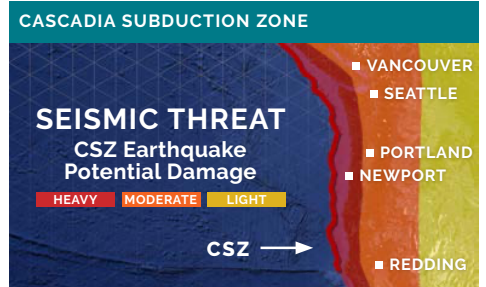
The soils below either dam could liquefy during a seismic event (3.0 or greater on the Richter Scale), causing significant damage to and/or failure of the dams. As of 2013, **two of the top three most-critical, high-hazard dam projects** in the State of Oregon according to Oregon's Dam Safety Engineer are **the Upper Big Creek Dam and the Lower Big Creek Dam.**

#### Seismic Threats

1. Cascadia Subduction Zone (CSZ)
2. Crustal Faults within 62 miles (100km) of the Big Creek Dams
3. A significant tsunami is likely to follow any seismic activity of 7.0 magnitude or above

IN THE NEXT 50 YEARS  
**1 IN 3 CHANCE OF A BIG CASCADIA EARTHQUAKE**  
**1 IN 10 CHANCE OF A M9+ CASCADIA EARTHQUAKE**

Oregon State University professor Chris Goldfinger,  
*The New Yorker*, July 20, 2015



CRUSTAL FAULT	MAXIMUM MAGNITUDE	DISTANCE AWAY
Yaquina Faults	6.1	1.9 mi
Waldport Fault	6.4	13.0 mi
Stonewall Anticline	6.8	21.7 mi
Daisy Bank Fault	7.3	28.0 mi
Alvin Canyon Fault	7.2	32.3 mi
Wecoma Fault	7.3	32.3 mi
Turner and Mill Creek Faults	6.6	48.5 mi
Happy Camp Fault	6.6	51.6 mi

Parameters for Faults within 62 miles (100 km) of the Big Creek Dams, USGS 2014

