



February 5, 2020
Senate Committee on General Government and Emergency Preparedness
Senator Chuck Riley, Chair

Testimony in Support of Senate Bill 1537
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Thank you for the opportunity to provide testimony in support of Senate Bill 1537.

The Oregon Water Resources Department is the state agency charged with overseeing the safety of more than 950 dams across the state that are authorized to store water for agriculture, cities, industry, recreation, fisheries, and other purposes. These dams are nonfederal dams that are not under the jurisdiction of a federal dam safety program. The Department's Dam Safety Program seeks to identify and work with owners to address dam safety deficiencies to protect people and property, while preserving the many benefits that dams provide for our communities and economy.

While dams provide benefits, the consequences of failure of a dam can be significant, potentially resulting in loss of lives and damage to property and infrastructure. Although not well documented, the Department is aware of at least 55 failures of dams in Oregon since the 1800s. One failure resulted in the deaths of seven people in 1896. Most failures of dams in Oregon have been small, but several have resulted in more significant property, road and infrastructure damage, and some have flooded towns and cities. In the last 20 years, one major failure of a significant hazard dam occurred in 2005, resulting in approximately \$2 million in damage; while a few other failures were low hazard dams. In addition to failures, every year at least one dam experiences a safety incident requiring urgent actions.

Over the years, limited resources have been dedicated to the safety of dams, and challenges in ensuring their safety are compounding. Engineering standards have evolved over time as our understanding of risks to dams and modes of failure have increased. Our understanding of seismic and flood risks in Oregon have also changed. Meanwhile, the majority of our dams are more than 50 years old, with some showing signs of degradation or experiencing safety incidents requiring urgent repairs. For example, many of the high and significant hazard dams have corrugated metal pipes that are rusting and deteriorating. Some of this deterioration is causing water to leak from the reservoir through the pipe and, over time, increases the risk of failure.

These challenges are not unique to Oregon; in the past five years, the failure of over a hundred dams in North and South Carolina during extreme flooding and hurricanes, and the safety incident at Oroville in California have demonstrated the urgency.

Of the dams regulated by the Department, 76 dams are rated as high hazard, meaning loss of human life would be expected should the dam fail, while another 151 are significant hazard, meaning failure is likely to result in damage to property or infrastructure, but is not likely to

result in loss of life. The hazard rating reflects the impacts of failure, but not the condition of the dam.

Visual inspections are the primary tool and approach the Department has to identify potential deficiencies, with its existing resources. Oregon seeks to inspect high hazard dams annually, and significant hazard dams every few years. Of the 76 dams rated high hazard, 20 are in poor or unsatisfactory condition, based on current information available to the Department. A list of all 76 high hazard dams are included at the end of this testimony.

The Department's Dam Safety Program primarily focuses on conducting regular visual inspections of dams and conducts more detailed inspections as resources allow. All high-hazard and significant hazard dams should have a full risk assessment conducted to identify potential vulnerabilities to floods, earthquakes, internal erosion, landslides, structural deterioration, and debris. When possible, the Department has also funded more in-depth analyses of dams. These analyses are even more detailed than assessments, providing information on the deficiency of a dam and how to address that deficiency.

Funding for this work has been insufficient for decades. Significant federal funding for the detailed inspection of nonfederal dams was provided after a series of dam failures in the 1970s as part of a Phase I Inspection Program. In Oregon, these federal dollars bolstered engineering staff working on dam safety, improving the ability of the Department to evaluate dam safety deficiencies. Since the federal funding expired, some dams have had partial assessments, but no dam has had a full risk assessment in decades based on current engineering standards and modern understanding of risks.

Senate Bill 1537 will provide \$2 million for the Department to conduct risk assessments at additional high-hazard dams, improve our understanding of extreme precipitation events and their risk to dams, as well as fund more in-depth analyses. The legislation will also establish a Dam Safety Task Force that will make recommendations on approaches to prioritizing dams for addressing safety deficiencies and also to identify potential funding mechanisms. These efforts will help the State determine how to most effectively direct its limited resources and also better identify the need and risk. These efforts complement both the Governor's 100-Year Water Vision and resiliency efforts and are essential to being able to understand the scope of the issue to prioritize dams for further funding and repair to protect people and property.

As we have seen significant failures and safety incidents in other states and, as we continue to experience safety incidents annually at dams in Oregon, the Department is increasingly concerned about the lack of information on dams here in Oregon. SB 1537 makes investments to being to improve our understanding of dams in the state and their vulnerabilities. We urge your support of SB 1537.

Table 1. State-regulated high-hazard dams with their associated condition rating.

DAM NAME	CONDITION	COUNTY
ANTELOPE	SATISFACTORY	MALHEUR
BAKER, ER	FAIR	YAMHILL
BARNES BUTTE	POOR	CROOK
BARNEY	SATISFACTORY	WASHINGTON
BEAR CREEK	POOR	CLATSOP
BEAR CREEK 3	FAIR	DOUGLAS
BERRY CREEK	SATISFACTORY	DOUGLAS
BIG CREEK #1 (LOWER)	UNSATISFACTORY	LINCOLN
BIG CREEK #2 (UPPER)	UNSATISFACTORY	LINCOLN
BUCHE (CLACKAMAS)	FAIR	CLACKAMAS
BULLARD CREEK F.R.S. (LAKE)	SATISFACTORY	LAKE
COOPER CREEK (SUTHERLIN)	UNDER ANALYSIS	DOUGLAS
COTTONWOOD	SATISFACTORY	LAKE
CRESCENT LAKE	SATISFACTORY	KLAMATH
CROFT	SATISFACTORY	POLK
CROW CREEK	FAIR	WASCO
CROWLEY	UNSATISFACTORY	MALHEUR
CURRANT CREEK	FAIR	WASCO
DREWS	FAIR	LAKE
DUGGAN	POOR	JACKSON
FERRY CREEK	UNSATISFACTORY	CURRY
FOSTER LOG POND	FAIR	LINN
FRANZEN	SATISFACTORY	MARION
HAYHURST ROAD	FAIR	DOUGLAS
JOE FISHER	SATISFACTORY	CROOK
JOHNSON CREEK (CROOK)	FAIR	CROOK
JUBILEE LAKE	POOR	UNION
KAY LAKE	SATISFACTORY	WASHINGTON
LAKE CREEK	FAIR	JACKSON
LONESOME LAKE	POOR	MALHEUR
MCGUIRE	SATISFACTORY	YAMHILL
MCMULLEN CREEK	UNSATISFACTORY	JOSEPHINE
MERCER	FAIR	POLK
MIDDLE	FAIR	CLATSOP
MILL CREEK	FAIR	LINCOLN
MOMPANO	SATISFACTORY	CLACKAMAS
MORGAN LAKE	POOR	UNION
NORTH CANAL DIVERSION	FAIR	DESCHUTES
NORTH FORK	SATISFACTORY	BENTON

DAM NAME	CONDITION	COUNTY
OLALLA	FAIR	LINCOLN
OSBORNE CREEK	POOR	JACKSON
PARIS	FAIR	DOUGLAS
PILCHER CREEK	SATISFACTORY	UNION
PINE HOLLOW	SATISFACTORY	WASCO
PLAT I	SATISFACTORY	DOUGLAS
POLE CREEK	POOR	MALHEUR
PONY CREEK - LOWER	POOR	COOS
PONY CREEK - UPPER	SATISFACTORY	COOS
PORTLAND #1 (MT. TABOR)	SATISFACTORY	MULTNOMAH
PORTLAND #3 (WASHINGTON PARK)	SATISFACTORY	MULTNOMAH
PORTLAND #4 (WASHINGTON PARK)	SATISFACTORY	MULTNOMAH
PORTLAND #5 (MT. TABOR)	SATISFACTORY	MULTNOMAH
PORTLAND #6 (MT. TABOR)	SATISFACTORY	MULTNOMAH
ROCK CREEK (WASCO)	FAIR	WASCO
SAMS VALLEY	FAIR	JACKSON
SANTA CLARA	SATISFACTORY	LANE
SEASIDE CITY	FAIR	CLATSOP
SILVER CREEK	FAIR	MARION
SPRING LAKE	SATISFACTORY	LINCOLN
STRONG	FAIR	JOSEPHINE
UPDEGRAVE	SATISFACTORY	DOUGLAS
VAN RADEN	FAIR	MULTNOMAH
WADE	FAIR	JACKSON
WAGEMAN	POOR	DOUGLAS
WALCH DAM	POOR	JACKSON
WALLOWA LAKE	POOR	WALLOWA
WICKIUP LAKE (ASTORIA)	FAIR	CLATSOP
WILLOW CREEK	SATISFACTORY	JACKSON
WILLOW CREEK 3 (MALHEUR)	UNSATISFACTORY	MALHEUR
WINCHESTER	POOR	DOUGLAS
WOLF CREEK	SATISFACTORY	UNION
WOODRAT KNOB	UNSATISFACTORY	JACKSON
YANKEE	FAIR	JACKSON
YOUNGLIFE WASTE A (LOWER)	SATISFACTORY	WASCO
YOUNGLIFE WASTE B (MIDDLE)	SATISFACTORY	WASCO
YOUNGLIFE WASTE C (UPPER)	SATISFACTORY	WASCO