

Testimony by Lawrence M. Magura, P.E., F.ASCE, D.WRE<sub>(ret.)</sub>, on behalf of the American Society of Civil Engineers Oregon Section

April 4, 2019

Mr. Chairman:

**I'm here today on behalf of the American Society of Civil Engineers (ASCE) Oregon Section to express our support for HB 2085.**

ASCE represents more than 146,000 members of the civil engineering profession worldwide, including nearly 2100 members in Oregon. Founded in 1852, ASCE is the nation's oldest engineering society, and we stand at the forefront of a profession that plans, designs, constructs, and operates society's economic and social engine – the built environment – while protecting and restoring the natural environment.

**HB 2085 will significantly improve dam safety in Oregon.** The bill would update the state's dam safety regulations for the first time in nearly 100 years. The legislation will give the state improved abilities to push for repairs and maintenance on aging dams and will give the state more flexibility to work with dam owners to plan fixes, instead of going directly to enforcement.

**Dam failures not only risk public safety, they can cost the Oregon economy millions of dollars in damages.** Failures are not just limited to damage to the dam itself. They can result in risk to public safety and private property, roads, bridges, water systems, and other critical infrastructure.

Oregon recorded 39 significant dam failures over the last 122 years. The Goodrich Dam in Baker County failed in 1896 and killed a family of 7. The Bully Creek Dam in Malheur County failed in 1925, flooding the town of Vale and causing widespread damage. More recently, the Simplot Waste Storage Dam near Hermiston failed in 2005. The dam failure washed out a highway and a major irrigation canal, damaged private property, and left mud deposits on agricultural land.

The dam safety incident at California's Oroville Dam in 2017 is a good example of how significant additional costs can be incurred as a result of overconfidence, inadequate priority for dam safety, and design vulnerabilities. The latest repair cost of Oroville is estimated to exceed \$1.2 billion. This cost excludes lost revenues from water and power sales.

**Dams in Oregon provide flood control, drinking water, fish and wildlife protection, recreational areas, and hydroelectric power, among other social and economic benefits.** Oregon has 882 dams recorded in the National Inventory of Dams 2018 database. 820 of these dams are regulated by the state. About two-thirds of Oregon's dams are older than their typical 50-year design life. In the next five years, over 70 percent of these dams will be over 50 years old.

**The state should develop a risk assessment program to prioritize dams in need of repair, rehabilitation, or removal.** Oregon currently does not have a comprehensive risk assessment program. Risk assessment can help to focus on identifying deficiencies and prioritizing repairs to the highest risk dams. The state currently has limited or no authority to analyze dams for deficiencies, or to require surveillance, monitoring or repairs.

**We need to establish a dedicated state fund for the repair, replacement, or removal of unsafe or failing and significant hazard dams.** A dam, like any engineered structure, has a finite useful service life, and age serves as a general qualitative indicator of its condition. It is estimated that about two-thirds of Oregon's dams are older than the typical design life of 50 years. In the coming years, even more of Oregon's dams will continue to age past their design life. Many of these older dams require repair, rehabilitation, or, if considered unsafe, removal.

**Oregon needs additional state dam safety staff to improve the dam inspection program and to support enforcement action for deficient dams.** Currently, the state dam safety program has only 2 full time equivalent (FTE) engineering staff. Compared to similar states, Oregon has by far the lowest number of engineers and the lowest ratio of engineers to high hazard dams in the west. In contrast, federal dam safety programs are generally well funded and staffed. At least three additional state dam safety engineering staff FTEs, as a minimum, are necessary to just match the staffing levels of other western states with similar dam safety needs.

As a matter of principle, ASCE generally supports adequate funding for agencies to operate, maintain and regulate dams under their jurisdictions; the enactment of state legislation to authorize an appropriate agency and commit sufficient resources to undertake a program of dam safety for non-federally owned or regulated dams; and Incorporation of risk assessments or ranking and priority systems into federal and state dam safety programs to focus dam safety activities on dams that pose the greatest risk to the public.

**Mandatory periodic communication among dam safety professionals should be an integral part of HB 2085's provisions.** We believe that requirements for periodic communication among Oregon's dam safety professionals should be included in the mandates stipulated in HB 2085. Several years ago, John Falk, who at the time was one of the two OWRD full-time staff members assigned to the dam safety program, applied for and received a grant from FEMA, the Federal Emergency Management Agency, that funded two annual Oregon dam safety conferences. I attended both conferences and thought they were well-attended and well-organized, and helped to disseminate a variety of dam safety state-of-the-art information amongst the engineering community. After the grant had been fully-expended, John sought, without success, to obtain state funds to continue the annual conferences, including reaching out to our neighboring states to share lessons learned. Several years ago, John left Oregon and took his dam safety expertise with him to Idaho, where he now manages that state's dam safety program, and supervises a staff of 10 FTEs. I don't need to point out (but I will) that Idaho's population is only about a third of Oregon's (1.8 million vs 4.25 million). As he was getting ready to leave Oregon, John told me that he thought the state's dam safety program was "hopelessly inadequate". This is still true today.

**We are encouraged that the legislature is considering this legislation and we urge you to support its passage.** It's way past time for Oregon to step up and join our neighboring states in having an adequate dam safety program that protects the lives and property of Oregonians!