



Board of Cowlitz County Commissioners

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CLERK OF THE BOARD
Kelly Dombrowsky

Date: January 30, 2024

To: United States House Committee on Natural Resources

Subject: The Testimony from Cowlitz County, Washington regarding the Legislative Hearing on the National Landslide Preparedness Act Reauthorization Act

Chairman Weterman, Ranking Member Grijavala, and Members of the Committee,

Thank you for the opportunity to provide remarks in support of the National Landslide Preparedness Reauthorization Act. The impacts that landslides have had on our Cowlitz County are significant. Cowlitz County Washington is located in southwest Washington north and east of the Columbia River. This area is prone to landslides that impact public infrastructure (roadways, railroads and utilities) and private property. The following information highlights the impacts of landslides on local jurisdictions.

In the winter, it is not unusual for new landslides to occur as the result of extreme weather events or typical winter weather. In December of 2015 there was a significant rainfall event that caused close to three dozen new landslides. During the active rainfall event Public Works had road crews out responding to calls of blocked roadways and flooding. As the majority of the event occurred during the night the road crews and Sherriff's Department were closing roads and notifying residents if they appeared to be in the line of danger. During this event one piece of equipment was washed away by a slide and a resident trapped in his home, fortunately neither were injured. Furthermore, as the roadways were closed where possible, detour routes were opened for residents and emergency responders. In addition to the closures of the local roadways Interstate 5 was closed limiting the access from the south. The succeeding morning, the Public Works Department completed initial assessments of the damage to determine what could be cleaned up and what needed a formal assessment. Cowlitz County called in a geotechnical engineer to assess the slides and determine if the location could be cleaned up or if an engineered solution was required. The County cleaned up more than two dozen slides and completed large long-term repairs of six other slides following this massive weather event.



Embankment Slide



Board of Cowlitz County Commissioners



Slide across Kalama River Road



Home and roadway damaged by a slide



Roadway closed by slide material



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Rocks alongside a County Roadway



Embankment Failure

When a large scale occurs oftentimes the County will declare an emergency and send this declaration to the Governor with the hope that the State will declare an emergency to send on to the Federal government. This needs to occur to allow the County to be eligible for federal assistance. This process requires the Department of Emergency Management to coordinate with the County, the cities, and the utilities to estimate the damage that has occurred. The local jurisdictions then need to work with FEMA and FHWA for approval of eligibility of damage and the potential permanent repairs. This process requires extensive staff time for coordination of repairs and accounting of the work that has occurred.

In addition to fast moving slides, Cowlitz County has a large number of deep-seated slow-moving slides that are beyond our ability to repair. The slides are not eligible for federal funding even when they are reactivated during a large storm event. The County addresses these areas a number of ways depending on the scale of the slide and its location relative to the roadway. We have numerous locations where we maintain drainage facilities to remove the water from the slide area. These facilities include horizontal drains, trench drains and a pump station. Other slides are left as stretches of



Board of Cowlitz County Commissioners

roadway with only a gravel surface that the County adds rock to as needed (it can vary from weekly to a few times a year). Other areas that do not respond to drainage solutions are paved with additional pavement added as needed. We also have areas that have jersey barriers at the toe of slope to prevent falling rocks from entering the roadway.



Section of roadway that needs to be frequently paved



Section of roadway that is maintained as gravel

When the County responds to landslides and install a long term repair the costs impact the budget for the year. There is an annual set aside for emergency response to landslides but large repairs will either be delayed for the next budget or they delay other projects that are planned. Fiscal impacts of engineering solutions for small slides (50 to 100 linear feet) that impact roadways vary by the type and height of the slide and can include drainage solutions (starting at \$200,000), buttresses (starting at \$500,000), or retaining walls (starting at \$1,000,000). There are also locations where a slide is above the roadway where rock scaling is appropriate and this process starts at \$500,000 for a small slide.



Board of Cowlitz County Commissioners



Rock buttress



Soldier pile retaining wall





Board of Cowlitz County Commissioners

Slope after rock scaling

In addition to the slides that are within the within the County's jurisdiction, Cowlitz County is home to one of the largest landslides in the United States that occurred in the City of Kelso. In 1998 a slow moving slide started in the City of Kelso that destroyed or made uninhabitable 140 homes. The City worked with FEMA to buy out owners, reestablish utilities to the homes that remained and demolish the homes that were purchased. The Washington State Department of Transportation (WSDOT) deals with three ongoing landslides on Interstate 5, State Route 4 and State Route 411. The slide on Interstate 5 occurs during large storm events and drops rocks and other debris onto the interstate shutting the roadway. This backs traffic up for miles, stops interstate commerce and interferes with emergency services. The only local north south alternate route is steep and windy and cannot be traversed safely by trucks. The closest alternate route for trucks includes driving the 30 miles back to Portland, Oregon and using Oregon State Route 30 to the Lewis and Clark Bridge. This detour adds a minimum of an hour of travel and is also prone to landslides. State Route 4 has a steep slope above the roadway that is prone to sliding onto the roadway and frequently requires rock scaling projects. State Route 411 between Kelso and Castle Rock has a deep seated landslide that WSDOT has chosen to overlay as needed, not repair.

Cowlitz County is also home to a several areas of lahar flows (areas of volcanic mud flows) that are prone to erosion and failure. After Mount Saint Helens erupted the County and WSDOT worked to reopen the area that were covered by the massive mud flows. Many of the roadways were reconstructed on the lahar materials. In a large storm event, the County lost a set of culverts that were installed on top of the mud flow to reestablish an arterial serving the area. The resulting canyon was over 100 feet long and 40 feet deep. Fortunately for the residents and emergency responders there is an alternate route. This route adds approximately a half hour to the residents adjacent to the washout and emergency responders. Since the slide occurred the County has purchased and installed a temporary one lane 120' span bridge. We are currently in the process of designing a permanent bridge that we are planning to install in 2025. The expense to the County is over \$4,000,000 and was not eligible for emergency relief funds from FEMA or FHWA because it was a localized weather event.



Roadway approximately a week prior to washout



Board of Cowlitz County Commissioners



Roadway washout



Temporary Bridge

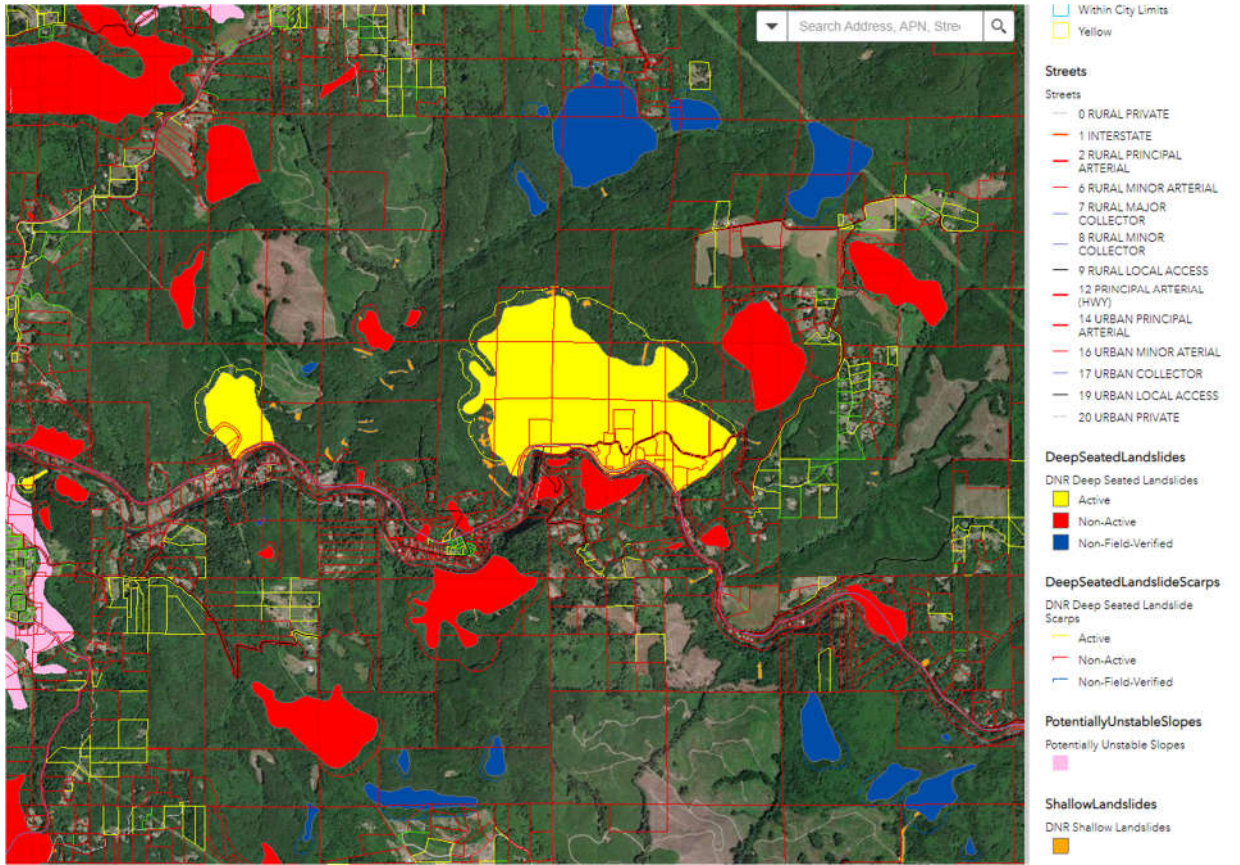
WSDOT experienced a similar failure in 2023 on State Route 504, the route to the Mount Saint Helens. There were multiple people stranded beyond the slide at Johnson Ridge Observatory that needed to be evacuated by helicopter after spending the beyond the slide. WSDOT completed a temporary roadway to allow access to the stranded vehicles and scientific sites beyond the failure. This temporary roadway failed during the first rains of the winter and the roadway will not be reopened again until 2026 at the earliest.

In addition to the infrastructure damage caused by slides there are other ongoing impacts to the citizens of Cowlitz County. If a slide occurs on private property it is the property owner's responsibility to repair any damages that have occurred to the property. If the damage is significant, the owners could lose the use of the property.

In order to prevent additional structures from being impacted by landslides the County has adopted a Critical Area Ordinances that includes restrictions on construction. Prior to construction the developer must review the County maintained hazard map to determine if the parcel is impacted by landslides and address items contained in the ordinance. A snippet of this mapping is shown below.



Board of Cowlitz County Commissioners



Portion of the critical areas map accessed on the Cowlitz County website.



Board of Cowlitz County Commissioners

We would like to see continued support in our community to identify, prepare for emergency response and mitigate for known landslides to prevent interruptions to the lives of residents. These activities could include continued map updates, development of a Public Works inventory of slide impacted roadways that includes potential projects with costs, and mitigation projects.

For additional information or questions, please contact Susan Eugenis, County Engineer, at (360) 577 -3030 or eugeniss@cowlitzwa.gov.

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