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# **Oregon 213 Slide Repairs in Mulino**

# Landslide background:

Record setting rains reactivated an ancient landslide in March 2017. The landslide movement caused the southbound lane to drop below the northbound lanes and cracks to form across Oregon 213 (Cascade Highway South) in Mulino near South Eldorado Road.

ODOT used resources from the Oregon Department of Geology and Mineral Industries and on-site surveying to study OR 213 in Mulino. Based on that research, it appears the active landslide is part of a larger group of ancient landslides originating along the southern flank of Spangler Hill.

# **Slide Repairs Continue:**

We developed a two-stage plan to address the landslide and the resulting pavement damage. Currently, contractors are installing 40 horizontal drains approximately 40 feet below the highway to help drain water from the landslide area.

### Drains Address Water that Contributes to Slide

In a landslide, water acts as a driving force. The drains will create an easier path for water to drain from the area, reducing the potential for additional movement.

The contractor is working from below the highway to install the drains within a very small available work area. ODOT continues to monitor the slide area using instrumentation and full-time observation to help reduce any additional impact to the highway surface.

The drain installation is expected to create movement in the cracks of the road and is normal. Geologists will be on site monitoring conditions and will adjust appropriately.

The first drain was installed Tuesday. The three drains are currently in place are functioning well and as expected.



Drains inserted in the slope reduce additional slide movement.

#### **Pavement Repairs**

The week of Jan. 29, a contractor will repave several sections of OR 213 where the movement of the landslide has caused cracks and bumps. The pavement repair will allow us to open lane in each direction. We will continue to monitor pavement conditions and will close lanes again if needed for safety.

## More Pavement Repairs and Flagging Possible

This landslide continues to move. That means that travelers can expect that the pavement will continue to move. Travelers should expect traffic flagging, traffic reduced to one lane of OR 213, speed reductions and more pavement repairs. Heavy rain could also cause an increase in slide movement.

## Past work:

The first of multiple pavement repairs was completed in October 2017. This included repairing the pavement and was intended to



Cracks and southbound lane sinking below northbound lanes along OR 213 near Mulino.

strengthen the road and temporarily repair the abrupt edges running across the highway.

#### Strengthening the Road

Crews inserted layers of rocks and geogrid, a material used to reinforce the highway base, while paving. The geogrid is a strong plastic material that strengthens the road and allows some movement.

As expected due to the moving landslide, the pavement has since shifted in the areas between where geogrid was installed.

## **Changing conditions:**

OR 213 remains safe. Crews are monitoring conditions on a daily basis. While a closure of OR 213 is not expected, crews are ready to take all necessary steps if safety is threatened.

We are coordinating with Clackamas County to plan detour routes in the event a closure of OR 213 is necessary.

Travelers should use TripCheck.com to see current road conditions. For questions about local roads or private property, please contact Clackamas County.