

The Last Chance Grade (LCG) Permanent Restoration Project is a collaborative, multi-year effort to find a permanent solution to geologic instability and roadway failure on a 3-mile segment of US Highway 101 in Del Norte County, extending from Wilson Creek to 9 miles south of Crescent City. Caltrans is committed to ensuring the safety and reliability of the highway—now and for the future.

## Last Chance Grade Project

# Moving Forward With Alternatives X and F

As of May 2021, Caltrans has identified two Last Chance Grade alternatives for further study:

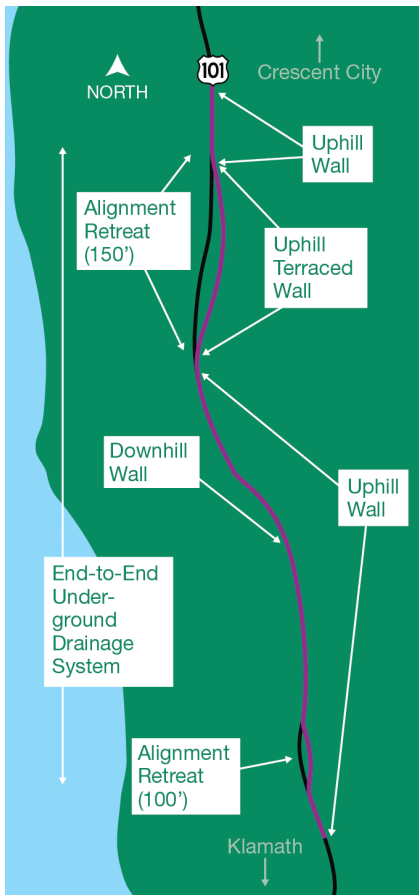
**Alternative F**, a Tunnel Bypass and **Alternative X**, an End-to-End Re-Engineering of the route.

### How did we get to the two alternatives?

Public input and field studies had previously helped Caltrans reduce the number of alternatives to seven. Given the cost and time needed for study, Caltrans met with its four stakeholder working groups to see if they could reduce the number even further to focus on the best solutions. They looked at impacts, time required to study and build, and how well the alternatives would work. Caltrans found that five of the alternatives would take much longer to build, have greater potential impacts, and are unlikely to work as well. By not studying these alternatives in greater detail, Caltrans **saved 10 million dollars and shortened the project schedule by one year.**



## Alternative X



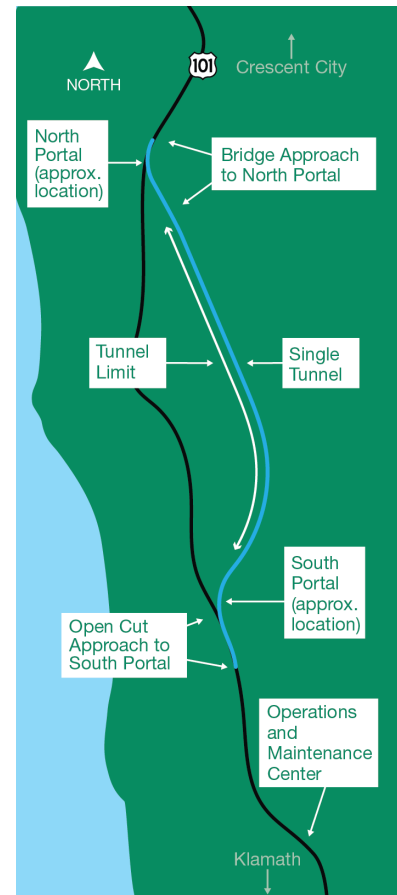
## Alternative X: End-to-End Re-Engineering

### Why study X? Isn't X the same as what you're currently doing?

X is quickest to construct, least expensive, and has the second smallest potential impact on the environment and resources. As such, Caltrans has a responsibility to study it. Though similar to the existing highway alignment, X is quite different. Right now, Caltrans is doing emergency repairs in reaction to landslides. Alternative X **re-engineers the route** to mitigate the landslide hazard. Caltrans is exploring proven engineering improvements along the entire length of LCG, including:

- An underground drainage system to reduce excessive stormwater (a major cause of damage)
- Moving the current alignment inland at certain locations
- Retaining structures with tiered and steel-reinforced walls, supports and ground anchors both uphill and downhill

## Alternative F



## Alternative F: Tunnel Bypass

### Why study F?

The tunnel will be located so it avoids the landslide area; it has the lowest risk of interruption and also the smallest potential environmental impact among the alternatives.

- Caltrans has successfully constructed and maintained similar tunnels at Devil's Slide in San Mateo County.
- Alternative F has a high construction cost, but it limits impacts on sensitive resources that could require significant mitigation.

### But what happens if both Alternatives F and X prove to be unfeasible?

Based on initial studies, there's a very low risk of this occurring. If that were to happen, Caltrans would revisit or modify the other alternatives or develop new ones.