Memorandum

To: CHAIR AND COMMISSIONERS
   CALIFORNIA TRANSPORTATION COMMISSION

CTC Meeting: March 13-14, 2019

Reference No.: 2.5b.(3)
   Action Item

From: STEVEN KECK
   Chief Financial Officer

Prepared by: Matthew K. Brady
   District 01 - Director

Subject: CAPITAL OUTLAY SUPPORT (COS) ALLOCATION - LAST CHANCE GRADE PROJECT
   (PPNO 01-1112 – DEL NORTE COUNTY – UNITED STATES HIGHWAY 101)
   RESOLUTION FP-18-57

ISSUE

Should the California Transportation Commission (Commission) approve the California
Department of Transportation’s (Department) request of $45,000,000 for the State Highway
Operation Protection Program (SHOPP) Major Damage (Permanent Restoration) project
(PPNO 1112) on United States Highway (US) 101, in Del Norte County, to provide the pre-
construction component support cost funding to permanently address the active landslide on
US 101 at Last Chance Grade?

RECOMMENDATION

The Department recommends that the Commission allocate an additional $45,000,000 for the
SHOPP Major Damage (Permanent Restoration) (PPNO 1112) on US 101, in Del Norte County,
to provide the pre-construction component support cost funding at Last Chance Grade.

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<th>Pre-Construction Support Component COS</th>
<th>Pre-Construction Project Funding</th>
<th>Revised Pre-Construction Funds</th>
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"Provide a safe, sustainable, integrated and efficient transportation system
to enhance California’s economy and livability"
PROJECT LOCATION, DESCRIPTION, AND CONTRACT STATUS:

The project is located on US 101 at Last Chance Grade (LCG), in Del Norte County, between Wilson Creek and Crescent City, on the edge of the coast. US 101 at LCG has been progressively shifting westward and downward due to storm events and earth movement. The roadway has shifted horizontally by 50 feet, and portions of the roadway are now located outside of the boundaries of the highway right-of-way that was originally purchased by the Department. The roadway has moved to a position where it is now at the edge of the bluffs that are subject to active coastal erosion.

Since 2010, US 101 at LCG has experienced continued movement and deformation resulting in five federal Emergency Repair (ER) project with approved Damage Assessment Forms (DAFs). These DAFs provided a total of $56,000,000 in ER funds for three Emergency Opening contracts and two Permanent Restoration (PR) projects at three locations along the project site. The work associated with these projects is considered temporary due to the deep-seated nature of the landslide. Over $86,000,000 has been spent on capital projects to repair or strengthen LCG since 1997, with these costs continuing to accrue and accelerate in recent years.

To investigate the earth movement caused by storm damage, increased landslide movement, and emergency response and repair efforts at the LCG site, the Department installed a surface monitoring network and multiple slope indicators to measure and collect movement data of LCG since July 2012. Current subsurface investigations reveal that the landslide complex is failing as deep as 260 feet with multiple nesting shallower landslides. Since October 2014, the roadway deformation has accelerated at a much faster rate than previously experienced at the grade. Boring data at the area of greatest roadway deformation reflects movement occurring at approximate depths of 100, 75, 40 and 35 feet. Also, recent photography indicates ocean erosion, at the bluff base, is contributing to instability.

US 101 passes through Redwood National and State Parks; which are designated World Heritage Sites. Constructing a route around the slide has the potential to affect an iconic old growth redwood forest. The Department cannot construct a full retreat away from the eroding bluffs without the potential removal of between 275 and 542 old growth redwood trees that are protected in the parks. At the current rate of movement, it is likely that at least a small retreat will be necessary to keep US 101 open while a more permanent solution can be developed.

The size, depth, and instability of the known slide planes, combined with the erosion of the bluffs, make maintaining the current roadway alignment difficult and extremely costly to maintain in place. The slide is expected to continue moving with high risk of catastrophic failure at LCG. Keeping the roadway on its current alignment is not a fiscally feasible option, given a landslide complex that is over a mile long and at its deepest, 260 feet deep.

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There is a great need for a long-term solution at LCG, as US 101 is a lifeline to Del Norte County and the surrounding region. The ultimate risk of not relocating US 101 away from LCG is a complete loss of the roadway and the continuity of coastal US 101. If there is a full road closure, the alternative route would be a detour of approximately 320 miles.

The project proposes five build alternatives. Currently, four of the five proposed alternatives include the realignment of US 101 with the goal of avoiding the unstable portions of LCG. These realignment alternatives vary between 1 and 4 miles in length. The fifth alternative would strengthen the existing alignment in its current location.

The improvements for LCG are consistent with the Commission-adopted goals and objectives of the Transportation Asset Management Plan.

**FUNDING STATUS:**

The project was programmed as a long-lead in May 2017. In June 2017, the Commission allocated support cost funds of $5,000,000 for geotechnical evaluations and preliminary environmental work in the pre-construction phase. Due to the complexity of the project and discussions with stakeholders, the Commission programmed another $5,000,000 in the adopted 2018 SHOPP to continue the preliminary environmental, the geotechnical work, and cultural evaluation. This enabled the Department to gather more data to identify risk and assist in the project development. In the 2016 Project Study Report, the PA&ED support estimate was $53,000,000. However, this amount has not been fully programmed.

**REASON(S) FOR ALLOCATION REQUEST:**

The Department is working with four separate stakeholder groups as well as federal, state, and local agencies to develop alternatives for repairing LCG. One alternative proposes a 1.1-mile-long tunnel that would cost an estimated $1.2 billion in construction capital. However, this tunnel alternative will require special expertise, and will impact various sensitive species that live within the project area.

Because of these kinds of impacts, understanding the underlying geologic conditions is critical to validating and refining the project alternatives. There is a unique dependency on the preliminary geotechnical studies to validate and refine the project alternatives because of the scale, complexity, and severity of the landslide and challenges with the surrounding geology.

Currently, geotechnical investigations are being performed in stages and will be performed throughout the first few years. The Department will not be certain which or if the proposed project alternatives will meet the purpose and need of the project until these investigations have been completed.
A Preliminary Environmental Assessment Report (PEAR) was prepared for the project and it identified the anticipated environmental documents for all alternatives as being an Environmental Impact Report and Environmental Impact Statement under the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), respectively. The estimated length of time to obtain environmental approval, for each of these, is between 5 and 9 years.

All the proposed alternatives have the potential to impact environmental resources, including the loss of native habitat and increased impervious surface. During project development, extensive cultural and biological surveys will be required and consultation and coordination with various stakeholders, as well as resource/regulatory agencies, will be required throughout project development.

The project cost is well above what is typical for the SHOPP Permanent Restoration Program project. For example, helicopters will be needed to bring drill-rigs to perform drilling at the project site. To achieve full funding for each phase will be a challenge and may require special action from State or Federal agencies.

**CONSEQUENCES:**

The Department has determined that $45,000,000 is needed for the project to move forward efficiently and effectively under the current workload and project development constraints to deliver the project report and environmental document.

The Department has determined that the additional requested funds are in the best interest of the State to avoid delays in implementing this important SHOPP Major Damage (Permanent Restoration) project which is consistent with the Commission-adopted goals and objectives of the Transportation Asset Management Plan.

If the allocation is not approved, the Department will not be able to complete the project or find a long-term solution to the geological movement at Last Chance Grade on US 101. This corridor is a lifeline to Del Norte County and the surrounding region. The only option during a geological movement would be a full road closure. A full road closure would require a minimum six-hour detour and approximately a $1.6B per year impact to the regional economy.

**RESOLUTION:**

Resolved, that $45,000,000 be allocated to provide funds to supplement the pre-construction component support cost for the SHOPP Major Damage (Permanent Restoration) project (PPNO 1112) on US 101, in Del Norte County.