

Last Chance Grade Permanent Restoration Project Alternatives Analysis Methodology Workshop #2 Summary of Results

Submittal #029
April 2021



EA# 01-0F280
Project EFIS# 0115000099
Del Norte County, U.S. 101,
PM 12.0/15.5



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I. Introduction

Workshop Purpose and Format

The Last Chance Grade (LCG) Permanent Restoration Project is a project proposed by the California Department of Transportation (Caltrans) to find a permanent solution to the instability and roadway failure on a 3-mile segment of U.S. Highway 101 in Del Norte County. As part of the process in selecting a safe and reliable long-term solution to this problem, Caltrans is conducting an alternatives analysis to determine if any of the seven build alternatives can be eliminated from further study. An alternatives analysis tool is being developed based on criteria and performance measures for the project's major objectives, which include providing a long-term safe and reliable roadway, reducing maintenance costs, and protecting the economy and natural and cultural resources.

Caltrans is hosting a series of workshops to solicit and refine LCG stakeholder input on the methodology and criteria. The purpose of each round of workshops is as follows:

- **Workshop Round 1:** Present initial alternatives analysis methodology and obtain initial stakeholder input. Based on stakeholder input, consider data needed to achieve each metric, determine whether another metric could serve as a proxy, or if the metric is useful in differentiating one alternative from another.
- **Workshop Round 2:** Discuss initial alternatives analysis results and recommended alternatives for further study using refined methodology and criteria. Assess further refinements to methodology and criteria based on stakeholder input.
- **Workshop Round 3:** Share the results of the final alternative analysis results and alternatives for further study completed using the refined criteria and methodology.

The structure of the process was to conduct the same workshop with each of the four working groups. These groups include:

- Cultural Resources Working Group: Members have responsibilities for cultural resources management.
- Biological Resources Working Group: Members have responsibilities for natural resource management and permitting.
- Last Chance Grade Partners: Members have land ownership and land management responsibilities.
- Congressman Huffman's Stakeholder Group: Members include representatives from local governments, tribal groups, businesses, agencies, and environmental groups who provide feedback to all the partners involved.

The first workshop of this series was conducted with each of the four working groups between December 14 and 17, 2020. Participants identified the metrics of greatest importance and identified additional metrics for consideration. The results of the workshops were documented in a summary report, dated February 2021, that was provided to workshop participants.

During the second round of workshops, which was again conducted with each of the four working groups between March 1 and 4, 2021, the project team presented the results of the

initial alternatives analysis using the refined methodology based on stakeholder input, an assessment of each alternative, and solicited stakeholder input on these results.

Workshop 3 will be scheduled in April 2021 and will most likely be convened as one workshop for all four working groups.

Some organizations are members of more than one working group and were welcome to participate in multiple meetings; however, if they were limited on time, they were encouraged to choose the group(s) in which they'd most like to share their views.

The workshops, three of which were held via Zoom and one using Webex, were designed to be interactive. Participants viewed a presentation (Appendix A) on the alternatives analysis process, purpose, and timeline, the value of screening alternatives prior to further study, highlights of the findings from Workshop 1, and preliminary results of the alternatives assessment.

The presentation explained the process whereby the alternatives were assessed. The analysis criteria and performance metrics were refined and grouped into categories based on stakeholder input during the initial round of workshops. These categories included:

- Core factors identified as most important across all working groups. These included major trees including old growth redwoods, construction costs, and mitigation costs, and were weighted most heavily in the analysis.
- Operational factors: road closure potential and cost to maintain
- Construction factors: time to construct, cut and fill amounts, etc.
- Natural resource factors: impacts on animals, vegetation, and waters

It should be noted that that two types of criteria and performance metrics were removed from consideration as part of the assessment tool. Metrics related to cultural resources were removed since the suggested metrics did not appropriately describe the resources and the resources will be discussed in greater detail during direct communications with Native American tribes in the area. There is also close alignment of cultural resources and natural resources. The performance metrics related to the risk of litigation were also removed. The project team found the metrics were highly speculative and did not speak to impacts which is the focus of the current assessment.

The Project Team developed numeric-based metrics and identified high, medium, and low risk ranges with corresponding color-coding in red, yellow, and green. The lowest scores, coded green, were considered most desirable in terms of each of the metrics. The performance of each alternative was assessed based on the metrics and assigned weighting. The team also varied the assigned weights for the metrics and tested the results to demonstrate how weighting variations could change the score. However, in several scenarios tested, while the scoring changed, the rank order by performance did not. Of the seven build scenarios currently under

consideration, Alternatives F and X consistently ranked highest; the A1 and A2 alternatives ranked strong in terms of operational factors but in the middle of the pack for all other factors; and Alternatives G1 and G2 consistently ranked low.

For more information on the alternatives, see the presentation reproduced in Appendix A. The proposed alignment maps and matrix showing how scores were assigned based on various combinations of factors and information on how the criteria were assessed are included in Appendix B.

The team demonstrated that based on the evaluation matrix, alternatives X and F scored higher and were likely to be carried forward for further study and the other alternatives dropped from consideration.

Upon stakeholder request, the project team provided more detailed information regarding the assessment process and results, including: how the criteria and performance metrics were refined; details regarding data collection methods; specific examples of how weighting variations would affect the results; maps showing construction and resource impact footprints for the different alternatives; and a chart comparing estimated tree removal counts by type for each of the alternatives.

Following the presentation, participants were asked to provide feedback, as well as ask any questions they might have regarding the alternatives assessment process and preliminary results.

Participants used the videoconferencing chat feature and spoken discussion to provide input. Their comments, along with information from the project team in response to their questions, were recorded on a digital whiteboard (Appendix B). Note that project information as represented in the digital whiteboard comments is not necessarily complete or presented with full context; it is intended to show the types of questions and comments shared and include a summarized record of the project team's responses to stakeholder questions and comments.

Following the discussion, participants were asked to identify their level of support for the alternatives assessment process and recommendations as discussed. Options for levels of support included: highly supportive, somewhat supportive, neutral, somewhat unsupportive, or do not support. It was emphasized that this was not intended to be a binding vote, but simply a way to get a sense of the general level of support for the process as discussed. The polling results are also included in Appendix B.

-  RUDISILL ROAD TO LCG TUNNEL
-  RUDISILL ROAD TO DAMNATION TRAILHEAD
-  RETREAT FROM RUDISILL ROAD TO LCG TUNNEL
-  RETREAT FROM RUDISILL ROAD TO DAMNATION TRAILHEAD
-  LCG TUNNEL PARALLEL TO EXISTING ALIGNMENT
-  UPSLOPE REALIGNMENT
-  ON ALIGNMENT IMPROVEMENTS

Workshop Attendance

In addition to Caltrans District 1 and project team staff, the following organizations were represented at the four workshops:

<p>Cultural Resources Working Group</p> <ul style="list-style-type: none"> ▪ California State Parks ▪ Elk Valley Rancheria ▪ Redwood National and State Parks ▪ Resighini Rancheria ▪ Tolowa Dee-Ni' Nation ▪ Tolowa Nation 	<p>Partner Working Group</p> <ul style="list-style-type: none"> ▪ California State Parks ▪ Elk Valley Rancheria ▪ Redwood National and State Parks ▪ Tolowa Dee-Ni' Nation
<p>Biological Resources Working Group</p> <ul style="list-style-type: none"> ▪ California Coastal Commission ▪ California State Parks ▪ National Park Service ▪ Resighini Rancheria ▪ State Water Resources Control Board ▪ US Army Corps of Engineers ▪ US Environmental Protection Agency ▪ US Fish and Wildlife Service 	<p>Huffman Stakeholder Group</p> <ul style="list-style-type: none"> ▪ California State Parks ▪ Crescent City ▪ Crescent City-Del Norte Chamber of Commerce ▪ Del Norte County Board of Supervisors ▪ Del Norte Local Transportation Commission ▪ Environmental Protection Information Center (EPIC) ▪ Friends of Del Norte ▪ Green Diamond Resource Company ▪ Humboldt County Association of Governments ▪ Humboldt County Board of Supervisors ▪ Office of Representative Jared Huffman ▪ Redwood National and State Parks ▪ Resighini Rancheria

II. Key Findings

A. Results of the Alternatives Analysis

The following summarizes the preliminary results of the alternatives assessment that was shared with the participants.

The initial application of the criteria and performance metrics yielded the following assessment of each of the alternatives. The Project Team developed numeric metrics and identified ranges (high, medium, and low) with corresponding colors red, yellow, and green. High scores correlated with high impacts and were coded red. Scores in the medium range were coded yellow and low scores, considered most desirable, were coded green.

The project team assessed the performance of each alternative. The team also assigned weights and tested the results to demonstrate how weighting could influence the final score. The team looked at a variety of scenarios that changed the final scores but there were few modifications that resulted in a change in the rankings. The alternatives are listed in rank order of performance from lowest (or best performing) to highest (or worst performing).

Alternative X – Re-Engineering along Generally Current Alignment

Alternative X was developed at the request of the Federal Highway Administration (FHWA). FHWA wanted to make sure that Caltrans had given full consideration to a holistic effort to reengineer a roadway generally along the current alignment to increase long-term stability through large-scale dewatering, walls and other structures, terracing, alignment retreat in specific locations and other improvements. To date, most repairs and improvements made to Last Chance Grade have been in reaction to earth movement. Alternative X had positive performance on most of the criteria and performance metrics. For example, Alternative X has by far the lowest construction cost and the smallest project footprint, limiting potential impacts. However, Alternative X performed relatively poorly on the operations metrics, eliciting concerns from some working group participants. Caltrans responded to such concerns by noting its successful implementation of dewatering activities at other locations and intention to further develop and refine this alternative prior to the environmental document.

Alternative F – LCG Tunnel

Alternative F includes approximately one mile of tunnel that runs generally parallel to the existing alignment to greatly reduce potential impacts to natural and cultural resources including old growth trees. Limited geotechnical studies support the feasibility of this alternative. While Alternative F is the second highest cost alternative (scoring poorly), Alternative F has lower resource and construction impacts and performs well on operation metrics. Alternative F's relatively lower environmental impacts also correlate with reduced mitigation costs.

Alternative L – Upslope Realignment

Alternative L is an alignment that would be located upslope of the existing roadway. The intention of Alternative L was to achieve a higher level of stability relative to the existing roadway. Recent geotechnical analysis revealed unanticipated results that the desired level of stability would likely not be achieved. The poor performance on the related metrics, along with the substantial impacts created by cutting a new path through current park land, resulted in a higher than expected score on this alternative and potential for it to be removed from consideration. While no formal decision was made, there were no voiced objections to removing Alternative L from further study.

Alternatives A – East Side Realignment (A1 Short Tunnel, A2 Long Bridge)

A1 and A2 go to the east of the ridge above Last Chance Landslides. A1 includes a short section of tunnel to rejoin US 101 on the north and A2 includes a long bridge to rejoin US 101 on the north. Both have significant cuts and fills creating a very large footprint that would require significant soil disposal and other construction impacts, which strongly impact environmental resources. While A1 performs well on operations, A1 is mostly located in current park land resulting in poor scores in related metrics. There were no voiced objections to removing the A alternatives from further study.

Alternatives G – West Side Realignment (G1 Short Tunnel, G2 Long Bridge)

Alternatives G1 and G2 are just east of the ridge above the Last Chance Grade Landslides in Redwood National Park and Del Norte Coast Redwood State Park. These were the two lowest performing alternatives across all metrics. Like alternatives A1 and A2, these have a large project footprint and thus substantial construction impacts. G1 and G2 were consistently scored medium and high in the metrics; the alternatives did not receive a "green" rating on any of the

performance metrics. There were no objections voiced in response to a suggestion to drop the two alternatives from further consideration.

B. Overall Assessment Process

A summary of stakeholders' comments from across the four workshops is provided below. The project team will consider all comments received in preparation for the final workshop.

Participants were largely satisfied with the detail included in the analysis and expressed confidence or satisfaction with the analysis process. Some expressed their appreciation for the rigor used in the process and how clearly it was explained during the workshop. Some found the maps and charts very useful, adding considerably to their understanding of the impacts and footprints of each alternative and their ability to provide useful feedback. Some participants were surprised by the initial results, but the explanation and additional information led to a change of opinion regarding the perceived impacts of particular alternatives.

- There were requests for more detailed information, including:
 - A complete summary of the information in the preliminary analysis;
 - Maps that clearly show the position of the most likely alternatives and associated structures, as well as potential new edges;
 - An overall timeline of the project including what studies are ongoing and which are scheduled to begin soon;
 - More specific information regarding natural resources metrics and mitigation (see below); and
 - A copy of the analyses and presentation slides.
- Overall, participants supported reducing the list of alternatives to be studied to increase efficiency, decrease costs and lessen the time needed for analyses. However, they noted the importance of including an analysis of the alternatives eliminated from further study in the environmental document. This will help clarify to the public why they are no longer being studied / considered, as well as satisfying the requirements of some permit evaluation processes.
- Although most felt that the rankings of the alternatives were consistent with their expectations, some were surprised that various alternatives ranked either higher or lower than they expected.
- Comments and questions about the metrical analysis and ranking process included:
 - It is important to note the concerns expressed even when they did not change the score for the metrics or alternatives.
 - Did any of the scoring take engineering feasibility into account?
 - How did climate change resiliency – specifically, planning for extreme weather events – figure into these metrics?
- Working Group participants responded positively to a proposal by Caltrans that Workshop 3 should be convened as one large meeting rather than four separate stakeholder group meetings. They also asked that information used in the alternatives analysis process be sent to all working group members.

- Participants expressed their appreciation for Caltrans' ongoing work to identify a long-term solution while keeping the current road open during landslide repairs. Several noted that they find Caltrans very open to stakeholder input and appreciate their willingness to provide project information. They appreciate the dialogue between stakeholders with a variety of perspectives and consider that reducing the alternatives to be studied to a manageable number is a great accomplishment.

C. Comments on Specific Metrics

Operations

- Some participants elevated the importance of operations as a metric, especially given closures due to the recent rock and landslides, emphasizing that the entire purpose of the project is to keep the road open and safe. Although there was agreement that it is crucial to avoid or mitigate impacts to the environment, they questioned whether the risk of road closure should be considered among the core factors and/or weighted more heavily.

Cultural Resources

- Participants expressed some concern that cultural resources were eliminated as a metric because those resources are an important consideration in the selection of an alternative. They were pleased that the project team considers these resources to be a key concern and will present detailed information for discussion at tribal council meetings, as well as performing ethnographic interviews with tribes, in the very near future. Tribal input is paramount in the consideration of impacts to cultural resources.
- Tribal participants explained that natural resources and cultural resources overlap, even though the law defines them separately. Some stakeholders were curious to know whether the value of natural resources metrics would be increased if their cultural value were integrated.
- It was appreciated that traditional cultural properties and gathering areas were mentioned, since resources of significance include more than those discovered through archeological activities. The value of cultural resources cannot be determined by prioritizing them based on the number or location of artifacts or other specific metrics.
- It is an ongoing challenge to share cultural knowledge with young people given the loss of access to resources caused by growing population and other existing impacts. It is therefore crucial to avoid further impacts as much as possible.
- Recommendations for providing information to tribal councils included:
 - Provide a breakdown of details for the natural resource metrics.
 - Visuals such as maps are very helpful; they should include topographic and landscape details to clarify how the alternatives are situated in the landscape.
 - For tribal council presentations only, document the general location of tribal cultural resources on maps.
 - Information should be sent out prior to the council meetings.
 - Operational measures must also be discussed as closures have had a profound impact on tribal government.

Natural Resources

- Concerns and questions expressed regarding impacts to trees included:
 - Knowing approximately how many trees are likely to be removed per alternative will help stakeholders give better feedback on the assessments.
 - Trees should be documented regardless of size as they are still valuable resources—both natural and cultural.
 - People were curious to know whether trees come down during slides, rather than just resulting from construction impacts. The video of trees sliding down the ridge during the current slide was a great illustration that trees are indeed impacted by landslides.
 - Heavy winds often create blow-overs after logging. Has the possibility of blow-overs on the ridgeline or new edges created by construction been considered among the impacts?
- Other natural resources related concerns and questions included:
 - Have the impacts of the alternatives on all animals been considered, studied and documented?
 - Is there any flat land that could be offered as a new state park or other recreational asset, possibly as a source of revenue?

Mitigation

- Stakeholders wanted to know more about Caltrans' plans for mitigation, including methods, locations, and costs. Specific questions included:
 - Were construction costs weighted similarly to an equivalent amount in mitigation costs?
 - Were the number of acres considered in relation to the cost of mitigation?
 - Is Caltrans considering the acquisition of offsite lands to assist in mitigation, and have those costs been factored into the analysis?

D. Highest Ranking Alternatives

Stakeholders were generally comfortable with the designation of alternatives X and F as the highest ranking, particularly because they seem the least impactful. While many were satisfied with the recommendation to limit further study to these two alternatives, some concern was expressed for limiting further study to only two build alternatives, especially given doubts about Alternative X and whether these two alternatives will be accepted by the public (see below for more details).

Alternative X

- Stakeholders requested a better understanding of Alternative X, including:
 - How distinct is this alternative from the current alignment; what distinguishes it from simply continuing to repair the current road?
 - How long it will take to obtain additional data to assess its feasibility and compare it to the better studied alternatives?
 - How well does it perform in terms of the operations metrics? Will it require closing the roadway during construction?

- If dewatering is potential mitigation for slope instability, should it be part of the ongoing process of road repair already? How does dewatering affect erosion and does it lower the risk of slope instability?
- Do the estimated costs for alternative X include funding for current repairs?
- Some were uncomfortable with the high ranking of Alternative X and that all but one other build alternative may be eliminated from study without knowing whether X is feasible. It may be difficult to get popular support for this option because many people are frustrated with the never-ending repairs on the existing road, and have difficulty believing that Alternative X is different from just continuing to fix the existing road. It is likely that many will object to anything being done on the current alignment.
- Information provided in the workshop makes the distinction clear and clarifies why Alternative X is being considered, but this needs to be carefully explained to stakeholders and the broader public. Recommendations for doing so include:
 - Present X with well-considered messaging. Characterize it as a proactive, holistic, global solution that addresses root causes, and emphasize that it is a new build. Focus on the lack of tree impacts and cost savings from discontinuing study of the alternatives with much larger footprints.
 - Present the alternatives that are top performers first and those that perform less well last.
 - Use visuals to convey the message, such as an aerial view with an outline to give a better idea of how it will look that can be played on a loop at the opening of meetings.
 - If people call for bringing the “A” alternatives back online for study, be prepared to clarify how they perform less well as demonstrated by metrics. Demonstrate that they provide no more advantage for the larger cost and impacts.

Alternative F

- Some were surprised by the high ranking of Alternative F, and that its cost and impacts were lower than expected; many expected it to be recommended for elimination from study. Satisfaction was expressed that it ranked high given its comparatively low impacts and good performance on operations metrics.
- Concerns and questions included:
 - Has Alternative F been determined to be viable, given the geotechnical and safety concerns? Curious to know what kept it in consideration.
 - How far underground will the tunnel be in relation to the forested landscape (both surface and roots)?
 - What is the extent of tree impacts at the tunnel portals?
 - Has a bike lane been considered in the tunnel?
- Suggestion that many members of the public are not in favor of this alternative. Public comfort with the alternative may include:
 - Explain that more certainty has been gained about the stability of the tunnel due to completed and ongoing studies; note how it reduces impacts on the surface.

- Consider using music or sound effects in the tunnel to help relieve stress and claustrophobia (e.g., I-5 bridge outside Eugene which plays a melody as you cross).
- Turn the tunnel into an amenity through the addition of art installations or other features.

E. Lower Ranking Alternatives

Alternatives A1 and A2

- Stakeholders were mostly satisfied with the idea of removing these alternatives from further study, given their large footprints, significant construction and natural resource impacts, and overlap with tribal lands.

Alternative L

- Some stakeholders were surprised that L did not rank more highly. They had hoped that its location upslope from the current alignment would provide more geologic stability. They had not understood that L has an entirely new footprint and would have significant natural resource impacts, including a large number of old growth redwoods.

Alternatives G1 and G2

- Stakeholders agreed that eliminating the G alternatives from further study or consideration is logical based on the analysis and prior discussion. They do not seem viable due to their large scale, high impacts, and poor performance in the metrical analysis.

III. General Findings

Participant comments and feedback from the four workshops indicated there was general support for the criteria and performance metrics used and the rigor of the analysis applied to the assessment that identified Alternative X and F as the two highest performing. Given the substantial difference in performance between X and F and the remaining alternatives, participants appeared open to the recommendation to drop the other five alternatives from further study. There was concern voiced related to studying X given the history of the roadway, current slide activity and little information known about its viability. Should X prove not to be viable, the process would have only one build alternative which features a tunnel.

IV. Polling on Level of Support

Before the close of each meeting, participants were asked to identify their level of support for the refined criteria and initial alternatives assessment. The polling was not considered a binding vote but was intended as feedback on the direction provided to the project team.

The level of support for the overall process as described was neutral or greater across all four workshops, except for a single “somewhat unsupportive” response from Congressman Huffman’s Stakeholder Working Group. There were no responses of “do not support.” The Cultural Resources Working Group had the highest percentage of those who were neutral (43%); in all other groups, the percentage of those who were either highly or somewhat supportive was greater than the percentage of those who were neutral. The highest level of

agreement was among members of the LCG Partners Working Group, with 100% highly supportive.

When asked to comment on responses that were less than supportive, stakeholders replied as follows:

- So much of the discussion, particularly in relation to cultural resources, rests on tribal input rather than on metrical analysis.
- As a relative newcomer to the group, currently just listening and learning.