

Last Chance Grade Permanent Restoration Project Alternatives Analysis Methodology Workshop #1 Summary of Results

Submittal #025

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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 each 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 three workshops to solicit and refine LCG stakeholder input on the methodology and criteria. The first workshop was conducted between December 14 and 17, 2020, in order to get initial stakeholder input; based on this input, the project team is considering comments from stakeholders and refining the methodology. The team is taking into account the data needed to achieve each metric, whether another metric could serve as a proxy, or if the criterion or metric is useful in differentiating one alternative from another. The purpose of the remaining workshops is as follows:

- **Workshop 2:** The purpose of Workshop 2 is to discuss the results of the refined methodology and discuss potential further refinements. The workshop is scheduled for the week of March 1, 2021 (originally proposed to be held the week of March 15, 2021). Following the workshop, the project team will update the alternatives analysis based on stakeholder input.
- **Workshop 3:** The purpose of Workshop 3 is to share the results of the alternative analysis, and to identify the alternatives for further study. This workshop will be scheduled for late April 2021.
 - Prior to Workshop 3, the project team will complete the alternatives analysis using the refined criteria and methodology.
 - Workshop 3 Purpose—share results of final alternatives analysis as completed using refined criteria and methodology. The Workshop 3 series will be scheduled in late April 2021.

Workshop 1 was held four times for the benefit of each of the four Last Chance Grade 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.

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, timeline, project purpose and need, history of alternatives, and proposed criteria and performance measures.

The presentation provided an overview of the criteria that will be used to evaluate alternatives. The goal was to identify criteria that have adequate data, can be measured, and represent comprehensive objectives. Not all criteria presented will necessarily be used for evaluating which alternatives move forward in the environmental process. There was some discussion about weighting the criteria, but no decision was made in the workshops.

Following the presentation, participants were asked to review and discuss the suggested criteria and metrics for each objective, considering the following:

- Does this criterion reflect what is valued?
- Are there any gaps or duplicates?
- Do the performance measures quantify what is important to assess this criterion?
- Should any of these be weighted much higher than others?

Participants used a combination of the Zoom or Webex 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).

Following the discussion, participants were asked to respond to a series of polling questions to gauge their level of support. First, they were asked to identify their level of support for the overall alternatives analysis process as described during the workshop (highly supportive, somewhat supportive, neutral, somewhat unsupportive, or do not support). Then they were asked to respond to the following polling question in relation to each objective: **to what degree do you support the revisions as discussed?** (highly supportive, somewhat supportive, neutral, somewhat unsupportive, or not supportive – revisions do not address my concerns). 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 revisions that were discussed. The polling results are also included in Appendix B.

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 ▪ Redwood National and State Parks 	<p>Partner Working Group</p> <ul style="list-style-type: none"> ▪ California State Parks ▪ Elk Valley Rancheria ▪ Green Diamond Resource Company ▪ Redwood National and State Parks ▪ Tolowa Dee-Ni' Nation ▪ Yurok Tribe
<p>Biological Resources Working Group</p> <ul style="list-style-type: none"> ▪ California Coastal Commission ▪ California Department of Fish and Wildlife ▪ California State Parks ▪ Elk Valley Rancheria ▪ National Oceanic and Atmospheric Administration ▪ National Park Services ▪ State Water Resources Control Board ▪ Tolowa Dee-Ni' Nation ▪ 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"> ▪ 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 ▪ Save the Redwoods League

II. Key Findings

A summary of stakeholders’ comments from across the four workshops is provided below. The project team will consider all comments received in their preparation for the next round of workshops.

A. Objective: Long-Term Safe, Reliable Roadway

- It is crucial to consider economic and social impacts on the communities for both road closures and traffic mobility.

Criterion: Road Closure

- All groups are comfortable with this metric and agreed that it makes sense.
- Avoiding long-term road closure is extremely important to preserve access to schools, businesses, tribal offices, and public safety / health services.
- What is the duration of closure used in the metric? It might be useful to differentiate between short-term and long-term closures.
- Closures should be kept as brief as possible, ideally less than one week; longer than that is a significant concern.

Criterion: Traffic Mobility

- All groups agreed that they had no concerns regarding this as a useful metric.
- This criterion is key to identifying the most sustainable alternative that will avoid the likelihood of lane reduction and the associated impact on travel time. The frequency of

traffic mobility impact is important to consider. An additional performance metric might be the percentage of time that lane reductions would be likely. This impacts the ongoing maintenance and economic objectives as well.

- Consider whether alternatives are in landslide areas since most lane reductions occur due to landslides. This metric is related to natural resource impacts due to associated sediment which may impact watersheds.

B. Objective: Reduce Maintenance Costs

Criterion: Maintenance Cost

- All groups agreed this was a good and important performance measure to be used moving forward.
- Current maintenance costs should be a baseline.
- Maintenance cost is also affected by the traffic mobility criterion for the Long-Term Safe, Reliable Roadway objective.

C. Objective: Protect the Economy

- “Protect the economy” seems like an odd way to characterize the objective; it’s more related to feasibility of the project and responsible stewardship of resources.

Criterion: Capital Costs

- All groups agreed that this is a useful and straightforward metric.
- Consider adding the duration of construction as a metric.

Criterion: Mitigation Costs

- Important to focus on mitigation, which may be a make-or-break for the process. More mitigation creates less litigation, which may equal quicker implementation.
- Crucial to ensure that this metric will not be used to avoid the full cost of mitigation, and therefore incentivize doing minimal mitigation, which would put the cost on the environment.
- Consider how to measure mitigation costs beyond fiscal concerns, including socioeconomic, environmental and cultural impacts. Some alternatives may include extra mitigation costs or challenges due to impacts such as old growth tree loss that are difficult to assign a dollar amount to or to mitigate. It may be necessary to consider how remaining resources might help mitigate for the loss of natural resources.
- Consider avoiding cultural resources to greatest extent possible rather than mitigation.
- Additional costs that should be included in calculating mitigation costs include: purchase of off-site land to mitigate for loss of wetlands; the cost of monitoring any mitigation; removing or creating new uses for the existing roadway, and maintenance costs for these new uses.

Criterion: Litigation Costs

Please note that the following is documentation of the discussion by working group members and do not necessarily represent Caltrans' position.

- Litigation is an important consideration that is complex and difficult to predict or adequately estimate. How will litigation costs be gauged (based on historic cases or on projections)? Ranking alternatives as high / medium / low risk for litigation may be a sufficiently meaningful criterion for this objective.
- In addition to the cost of the litigation itself, delays caused by litigation would also escalate construction costs over passing years, increase time for project completion and therefore affect project feasibility as well.
- Mitigation and litigation may not be mutually exclusive. Although there are other criteria that may determine or influence litigation, must consider that minimal mitigation may cause the project to wind up in court; substantial mitigation planned at the start (as possible under the CEQA process) will help avoid litigation delays.
- Continuing the current inclusive, trusted process, with good communications, meaningful consultations with tribes, making and fulfilling front-end agreements (where geology allows) may help avoid litigation. All stakeholders want a project that happens sooner rather than later and works for all.

D. Objective: Protect Natural Resources

- Need to specify considering impacts on water / aquatic resources. Criteria might include number of stream crossings; cut-and-fill volumes and associated risk of sedimentation; potential to fill wetlands. Must also consider impact on aquatic habitats, whether directly, through downstream impacts, or through risk of sediment delivery to stream system from watercourse crossings. This is a complex measure that is influenced by many factors.
- Consider amounts of cut and fill material to be deposited within project area or moved elsewhere, and the associated impacts, including environmental, wildlife habitat and connectivity, edge effects, construction traffic, and air quality.
- Natural resources are part of the cultural resources for tribes. Must consider each impacted area's significance to tribes and its link to cultural resources.

Criterion: Trees/Forests

- Should measure acres directly impacted.
- This criterion also affects habitat for plants and animal species.

Performance Measure: Old growth redwood forest (acres)

- This criterion will be the biggest driver of controversy that could derail the project. It will also be a primary metric for habitat and other impacts.
- Impacts and a qualitative assessment of the old growth redwood forest to be impacted must be considered beyond just acreage. This includes size of trees (since the public is responsive to big trees regardless of age); whether the acres are continuous; long-term impacts to the health of trees located along the edges of new roads; effects on water quality and habitat; and loss of carbon sequestration. Characteristics of old growth forest that are lost or impacted will need to be compared to any candidate "old growth" forest

that may be considered as mitigation habitat. It will likely be necessary to measure and assess every tree.

- Old growth redwood wood from removed trees should be given to the tribes.

Performance Measures: Young growth / mixed forest (acres); Mature mixed coniferous forest (acres); Other types, i.e. coastal scrub (acres)

- How is the distinction between young and mature forest defined?
- Mixing forest type and habitat types is confusing; suggest capturing “mature forest” in habitat acres only.

Criterion: Habitat

- Important to consider impacts on multiple species, both animals and plants, particularly sensitive species; might be missing something by focusing only on specific protected species. Consider whether some umbrella species can be identified to capture habitats that are essential to many different species.
- Environmentally sensitive habitat areas must be protected. Will need to make qualitative assessments beyond just acreage to determine habitat value for different species. Mitigation may include adding protections such as purchasing lands with similar habitats.

Performance Measure: Marbled murrelet habitat (acres); Northern spotted owl habitat (acres)

- No comments specific to these performance measures.

Performance Measure: Marten/fisher habitat (acres)

- These two species have different habitat requirements, so they should be considered in separate performance measures.

Criterion: Wildlife Connectivity

- Connectivity is an important criterion.
- Consider the ability of each alternative to incorporate migration corridors or wildlife crossing features, and its impacts on permeability for wildlife movement, which may vary across species. Also remember to consider water habitat connectivity.

Criterion: Recreational Resources

- Important to maintain access and connectivity to these resources. Include consideration of impacts to amenities such as vista points and parking lots and to tribal / culturally valuable routes.
- This criterion is easily mitigated, providing many opportunities to improve access and recreational facilities, leaving the impacted resources better than before.

E. Objective: Protect Cultural Resources

Criterion: Cultural Resources

- Determining impacts on cultural resources requires close coordination with the tribes within the Cultural Resources Working Group.
- Not all sites have equal value, and their value is influenced by many factors. Possible approaches include categorizing or ranking sites by high / medium / low risk but must go deeper than standard archeological information to assess ethnographic significance. Tribal input is required to clarify cultural resource values, which may include holistic significance of sites and how sites relate to one another; access and connectivity to sites and cultural trails; oral history and connections to specific locations; cultural significance of natural resources (e.g., plant species, fisheries). May not be able to specify precise considerations of cultural value.
- Again, this is strongly related to mitigation and its potential costs. High / medium / low assessment of risk may not provide enough detail to assess mitigation. Consider avoiding cultural resource impacts as much as possible rather than mitigation.

F. Comments on Overall Process and Methodology

- The “big nasties” that are most likely to be controversial and “blow up” the project—e.g., impacts to old growth redwoods—must be heavily weighted as drivers for decision making. Doing so may help clearly eliminate some alternatives.
- Consider the most sustainable alignment with least resource impacts, but must factor in cost to build, since a low-impact but very high-cost alternative might not be feasible.
- Concerned about the lack of updated information regarding the geotechnical risks; it is difficult to assess criteria, impacts and needs or eliminate alternatives without this.
- Additional metrics and criteria suggested included:
 - Consider time needed to adjust if running into complications once project is started. This will impact several of the objectives and associated criteria, including traffic mobility and capital costs.
 - Consider how well alternatives would accommodate multi-modal travel (e.g., bike travel), as this relates to equity.
- Questions asked regarding the following: when the number of alternatives for further study may be reduced; getting more information on other working groups’ activities and input; opportunities for accelerating process.

G. Polling on Level of Support

Before the close of each meeting, participants were asked to identify their level of support for the overall process and the revisions to the criteria and performance measures that were discussed. 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, with the exception of a single “somewhat unsupportive” response from Congressman Huffman’s Stakeholder Working Group. There were no responses of “do not

support.” In each case, 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, who were 100% highly supportive.

The level of support for the revisions to objectives as discussed for participants across all four groups was much the same: neutral or greater, with the exception of a single “somewhat unsupportive” response for revisions discussed to the Objective: Protect the Economy from Congressman Huffman’s Stakeholder Group. There were no responses of “not supportive – revisions do not address my concerns.” In all cases, the percentage of those who were either highly or somewhat supportive was equal to or greater than the percentage of those who were neutral. Again, the highest level of agreement was among members of the LCG Partners, who were 100% highly supportive of the revisions discussed for all five objectives.

Appendix A: Workshop Materials



Alternatives Assessment – Workshop #1
Cultural Resources Working Group
Monday, December 14, 2020
1:00 p.m. – 3:00 p.m.

Biological Resources Working Group
Tuesday, December 15, 2020
1:00 p.m. – 3:00 p.m.

Partner Working Group
Wednesday, December 16, 2020
9:00 p.m. – 11:00 a.m.

Huffman Stakeholder Group
Thursday, December 17, 2020
1:00 p.m. – 3:00 p.m.

Topic	Speaker	Discussion Tool
I. Welcome and Introductions	Joan Chaplick, MIG Jaime Matteoli, Caltrans	
II. Alternatives Analysis Process and Input	Jaime Matteoli	
III. Project Need, Purpose and History of Alternatives	Jaime Matteoli	
IV. Proposed Methodology and Criteria	Dina Potter, HNTB	Chat and Raise Hands
V. Review of Criteria by Objective	Joan Chaplick, MIG All participants	Chat and Raise Hands
VI. Level of Support for Criteria by Objective	Joan Chaplick, MIG All participants	Polling, Chat and Raise Hands
VII. Next Steps and Closing Comments	Jaime Matteoli	



LAST CHANCE GRADE

Alternatives Analysis Methodology
Workshop 1

December 2020

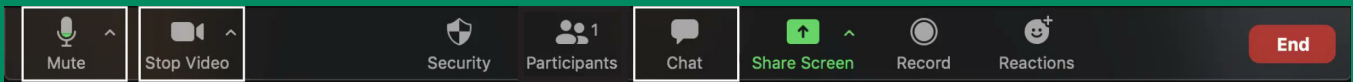


Meeting Purpose



- Get stakeholder input on the process for assessing the alternatives
- Conduct a transparent and defensible process
- In today's meeting, we will:
 - Describe the approach and methodology
 - Get your input on the criteria and performance metrics that will be used
 - Gauge the level of support for the process and the comments we have discussed

Virtual participation on Zoom



1 Audio & Video

Computer

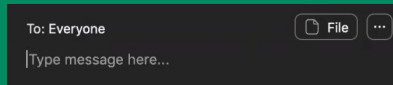
- Use the toolbar

Phone

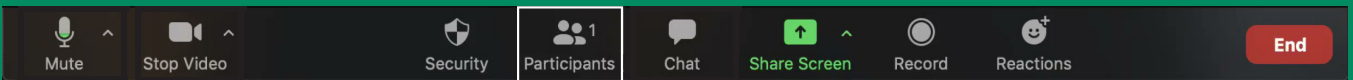
- Access dial-in number
- Use *9 to raise hand

2 Chat

- Click on the chat and type your comments and questions
- We'll take comments throughout the workshop

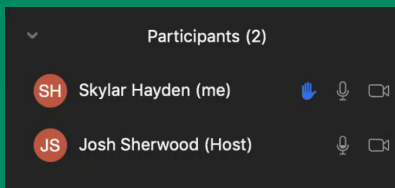


Virtual participation on Zoom



Participants

- Select icon on the toolbar to open the participants' window
- Select 'Raise Hand' button

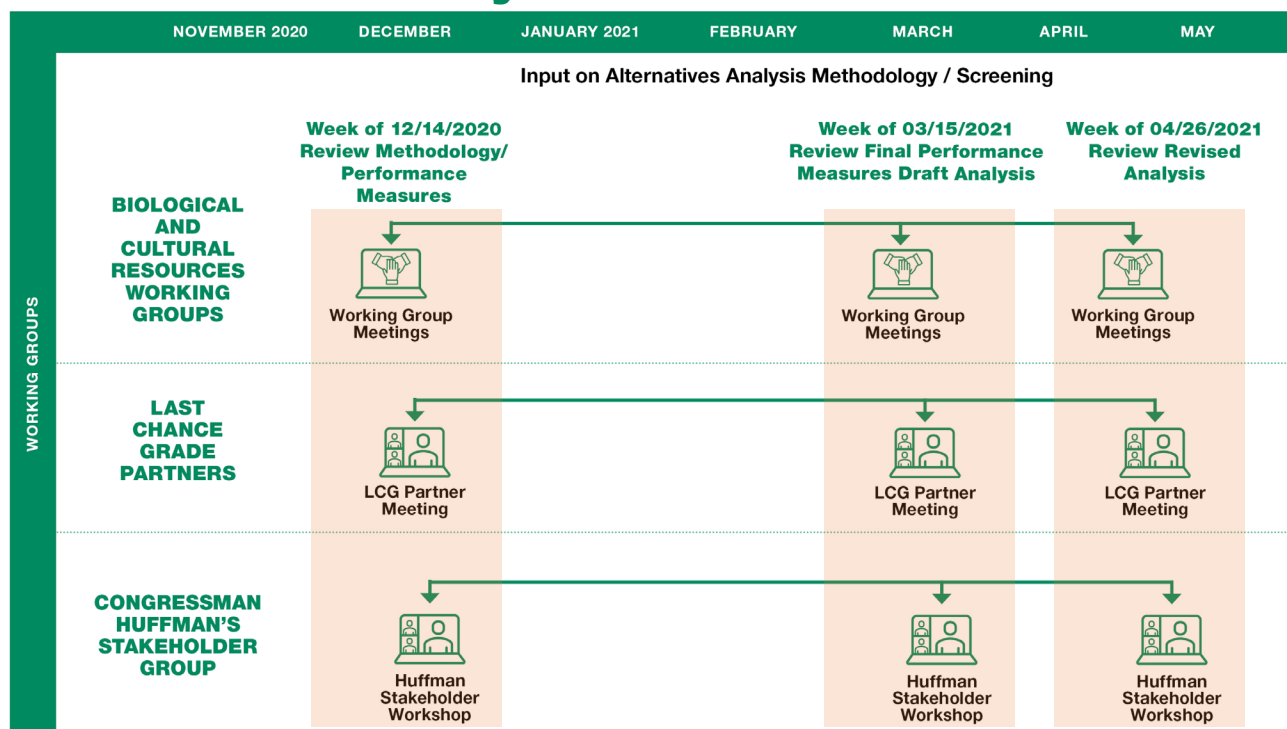


Workshop Agenda + Input Opportunities



- Welcome and Introductions
- Alternatives analysis process and input
 - *Questions via chat*
- Project need, purpose, and history of alternatives
 - *Questions via chat*
- Proposed criteria and proposed performance measures
 - *Discussion and comments via chat, with digital note taking*
- Review of criteria based on objectives
 - *Discussion and comments via chat, with digital note taking*
 - *Polling on level of agreement with proposed revisions*
- Summary and Next Steps

Alternatives Analysis Process



Project Timeline



ENVIRONMENTAL PHASE

DESIGN PHASE

CONSTRUCTION

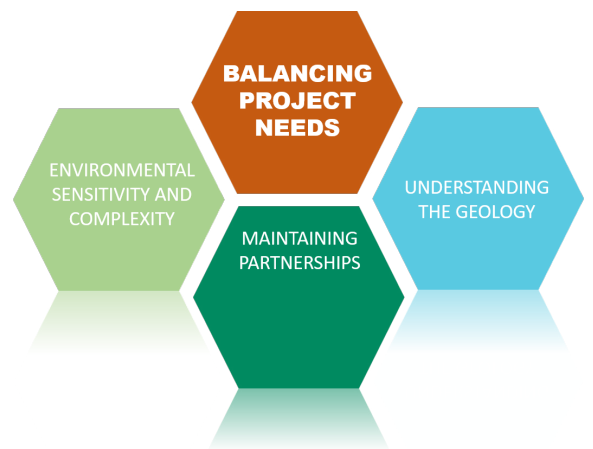


Project Need



Landslides and road failure at LCG have been an ongoing problem for decades. A long-term sustainable solution at LCG is needed for the following reasons:

- Economic ramifications of a long-term failure;
- Risk of delay/ detour to traveling public;
- Increasing maintenance costs and;
- Increase in frequency and severity of large storm events caused by climate change



Project Purpose

The purpose of this project is to develop a long-term solution to the instability and potential roadway failure at LCG.

The project will consider alternatives that:

- Provide a more **reliable connection**,
- Reduce **maintenance costs**, and
- Protect the **economy, natural resources, and cultural resources**.



Sunday night on LCG



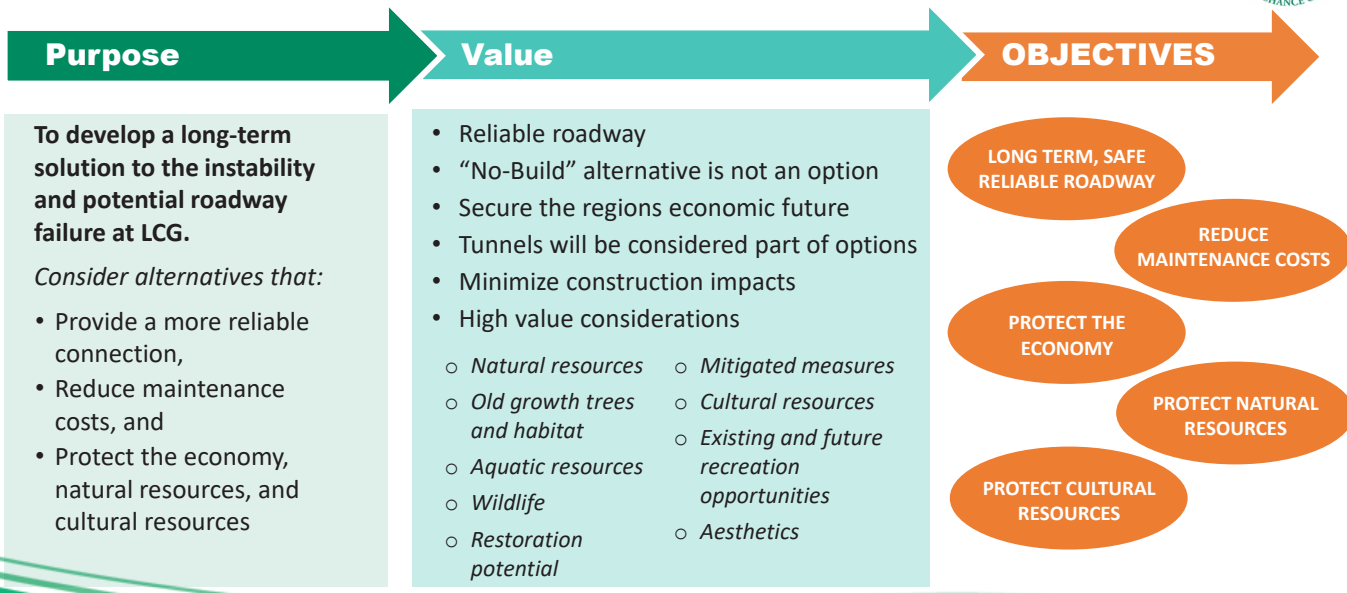
History of Alternatives

- 2015 Feasibility Study considered 14 alternatives and rejected eight
- 2016 Project Study Report considered six alternatives
- 2018 Risk Assessment added alternatives L and X
- 2018 Value Analysis rejected alternatives C3, C4 and C5
- 2019 Project Study Report Addendum added alternatives G1 and G2
- 2020 Seven build alternatives will be assessed and evaluated





Objectives + Performance Measures



Long-Term Safe, Reliable Roadway

Criteria	Performance Measure	How Measured
Road closure	Probability of long-term closure	Expert-based risk assessment including probability of deep ground displacement
Traffic mobility	Probability of lane reduction and mobility impact	Expert-based risk assessment including probability of unmitigable landslide activity / hydrogeological changes

Reduce Maintenance Costs

Criteria	Performance Measure	How Measured
Maintenance cost	Probability of increased maintenance costs	Expert-based risk assessment including probability of unmitigable earth movement

Protect the Economy

Criteria	Performance Measure	How Measured
Capital costs	Construction cost (millions)	Engineers' Order of Magnitude estimate
Mitigation costs	Mitigation cost range (high / medium / low)	Expert environmental estimate with historical cost data
Litigation costs	Risk of litigation (millions)	Risk based on costs of delay and level of potential controversy

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LiDAR

Protect Cultural Resources

Criteria	Performance Measure	How Measured
Cultural resources	Expert assessment of risk	Record search and pedestrian survey

Discussion of Criteria and Performance Measures by Objective



- Review the suggested criteria and metrics for each objective

Consider the following:

- Do these criteria reflect what is valued?
- Are there any gaps or duplicates?
- Do the performance measures quantify what is important to assess this criteria?
- Should any of these be weighted much higher than others?



Discussion

Polling on Overall Methodology



- What is your level of support for the overall process that has been described today?
 - Highly supportive
 - Somewhat supportive
 - Neutral
 - Somewhat unsupportive
 - Do not support

Polling on Each Objective



- *The poll is anonymous and is not a binding vote. Its purpose is intended as a way to gauge general support for the comments that were discussed.*
- To what degree do you support the revisions as discussed?
- Levels of Support:
 - Highly supportive
 - Somewhat supportive
 - Neutral
 - Somewhat unsupportive
 - Not supportive - revisions do not address my concerns

Next Steps and Next Meeting



- Meeting format is being replicated with all four groups
- Project Team will collectively review feedback and refine the methodology accordingly
- Project Team will apply the refined methodology will be applied to the alternatives and present the results for discussion at the next meeting
- Next workshop will be scheduled during the week of March 15

Appendix B: Workshop Results

Cultural Resources Working Group, 12-14-2020

Page 1

Overall Methodology

General Comments / Questions

Caltrans asks: will we need more collaboration / interim meeting prior to March workshop?	Maybe yes. It may depend on the participation of Tribes in the next few meetings. Will the results be shared out from all the meetings? (Caltrans response: Yes.)	Of value; cannot move forward without tribes' participation	Do think it would be valuable.	Would be valuable ✓	Add socioeconomic costs beyond just fiscal?	Close coordination with tribes is necessary
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Long-Term Safe, Reliable Roadway

Criteria	Performance Measure	How Measured
Road closure	Probability of long-term closure	Expert-based risk assessment including probability of deep ground displacement
Traffic mobility	Probability of lane reduction and mobility impact	Expert-based risk assessment including probability of unmitigable landslide activity / hydrogeological changes

Reduce Maintenance Costs

Criteria	Performance Measure	How Measured
Maintenance cost	Probability of increased maintenance costs	Expert-based risk assessment including probability of unmitigable earth movement

Criteria: Road closure

Performance Measure: Probability of long-term closure

No concerns about this particular performance measure.

Yes, comfortable with this metric

Thumbs up

Criteria: Traffic mobility

Performance Measure: Probability of lane reduction and mobility impact

No concerns with Traffic Mobility as performance measure ✓✓

Criteria: Maintenance cost

Performance Measure: Probability of increased maintenance costs

maintenance costs should be a performance measure moving forward

Thumbs up ✓✓

Protect the Economy

Criteria	Performance Measure	How Measured
Capital costs	Construction cost (millions)	Engineers' Order of Magnitude estimate
Mitigation costs	Mitigation cost range (high / medium / low)	Expert environmental estimate with historical cost data
Litigation costs	Risk of litigation (millions)	Risk based on costs of delay and level of potential controversy

Criteria: Capital costs

Performance Measure: Construction cost (millions)

Looks good, thumbs up

Criteria: Litigation costs

Performance Measure: Risk of litigation (millions)

No comments

Criteria: Mitigation costs

Performance Measure: Mitigation cost range (high / medium / low)

no concerns. However I'm waiting for some other indirect costs to see if they are considered later

Includes socioeconomic costs beyond fiscal concerns

This is just environmental?

Response: Could include ROW, utilities, but largely cost of mitigating environmental impacts

Thumbs up, Looks good

Add socioeconomic costs beyond just fiscal?

If adding a new metric, consider how to mitigate

Also includes cost of cultural mitigation

Protect Natural Resources		
Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LiDAR

Criteria: Trees / Forests

Criteria: Trees / Forests

Performance Measure: Old growth redwood forest (acres)

Just by acres? Or by trees? Suggest potentially doing so by tree; an individual tree can be a habitat for species Depends on the situation

Crosses line between natural & cultural resources; will be tricky to evaluate Recent point of contention in considering removal of one tree

What is the definition of old growth? Size of individual trees needs to be captured; public is responsive to big trees regardless of age Add DBH or some kind of measure

Caltrans: Have tree counts w/diameters for some areas Don't have count for Green Diamond; will count every tree during environmental process

Criteria: Trees / Forests

Performance Measure: Other types, i.e. coastal scrub (acres)

By adding "other types" you seem to cover all types

Criteria: Trees / Forests

Performance Measure: Young growth / mixed forest (acres)

No comments

Criteria: Trees / Forests

Performance Measure: Mature mixed coniferous forest (acres)

No comments

Criteria: Wildlife connectivity

Performance Measure: New habitat island generated (acres)

No comments

Criteria: Habitat

Consider changing measurements on habitat from acres to trees Or both trees and acres depending ... what about plant communities not trees, wetlands, etc... Again, plants may be cultural resources as well

Criteria: Recreational resources

Performance Measure: Number and type of sites / trails affected

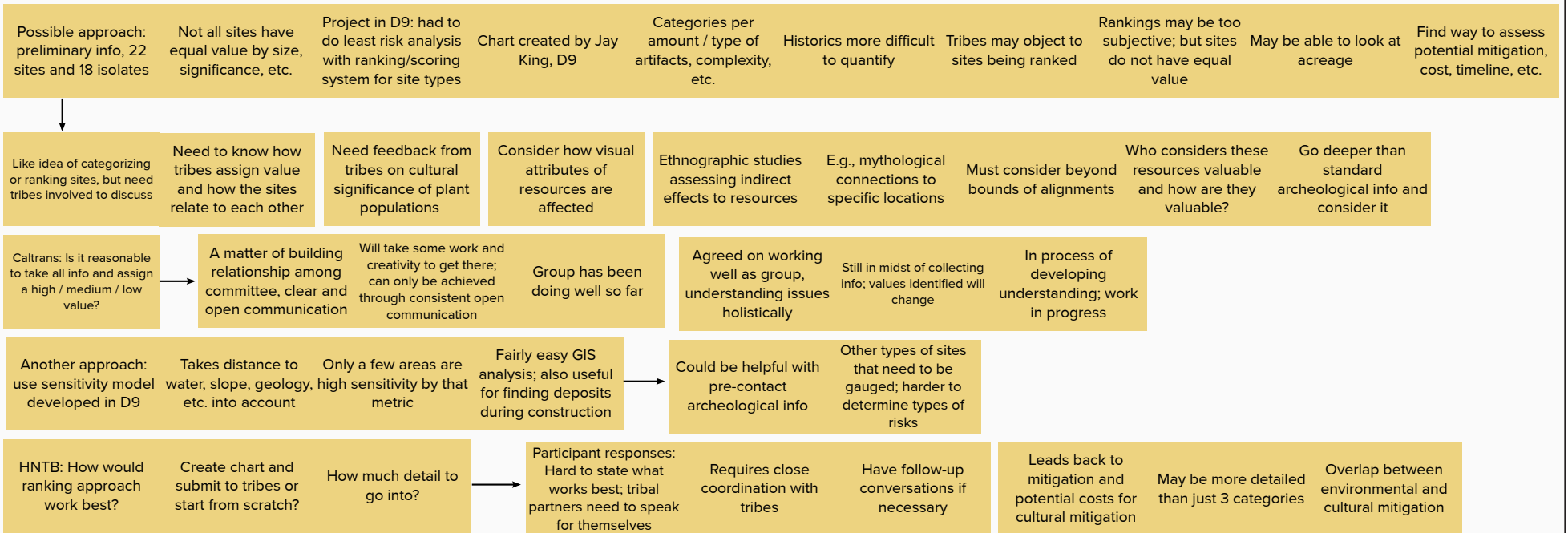
Will any new opportunities be added? This seems to speak to existing sites / trails only Road originally created for tourists, need to consider those resources

Protect Cultural Resources

Criteria	Performance Measure	How Measured
Cultural resources	Expert assessment of risk	Record search and pedestrian survey

Criteria: Cultural Resources

Performance Measure: Expert Assessment of Risk



Long-Term Safe, Reliable Roadway			Reduce Maintenance Costs		
Criteria	Performance Measure	How Measured	Criteria	Performance Measure	How Measured
Road closure	Probability of long-term closure	Expert-based risk assessment including probability of deep ground displacement	Maintenance cost	Probability of increased maintenance costs	Expert-based risk assessment including probability of unmitigated movement
Traffic mobility	Probability of lane reduction and mobility impact	Expert-based risk assessment including probability of unmitigated landslide activity / hydrogeological changes			

<p>Criteria: Road closure Performance Measure: Probability of long-term closure</p> <p>acceptable no questions or comments</p> <p>No comment from several people</p> <p>Consider community impacts - economic and social</p> <p>Road closures usually mean slides & sediment potentially impacts to waters</p>	<p>Criteria: Maintenance cost Performance Measure: Probability of increased maintenance costs</p> <p>No comments</p>
<p>Criteria: Traffic mobility Performance Measure: Probability of lane reduction and mobility impact</p> <p>Consider community impacts</p> <p>Otherwise no comments</p>	

Protect Cultural Resources			Overall Methodology					
Criteria	Performance Measure	How Measured						
Cultural resources	Expert assessment of risk	Record search and pedestrian survey	Group has captured "the big nasties:" things that can "blow up" project	Need to be drivers for decision making	Weighting some of these criteria can get us most of the way	Caltrans: hope to use expert-based qualitative judgments	Remember: worst case is just studying all 7 build alternatives - more expense and time	Hoping that presentation of results will help eliminate some alternatives
<p>Criteria: Cultural Resources Performance Measure: Expert Assessment of Risk</p> <p>Caltrans: must be sensitive to tribal preferences for information sharing</p> <p>No comments on cultural resources - should be handled in that working group.</p> <p>As long as the tribes' comments are addressed, the Corps has no comments on cultural resources.</p> <p>Thank you for your comments Jaime. No further comments from Elk Valley.</p> <p>Consider fisheries value to tribes and cultural resources.</p>	<p>General Comments / Questions</p> <p>Not sure where to mention multi modal issues as they relate to equity and the coastal bike trail. How would a tunnel accommodate these modes of travel?</p>							

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LiDAR

Criteria: Trees / Forests

Criteria: Trees / Forests

Performance Measure: Old growth redwood forest (acres)

Caltrans: considering eliminating A2 and G2 which cut into old growth

consider the number of trees along newly created edges that may later die or be damaged or be considered hazardous

This category will be the biggest driver of any controversy or value, it should be heavily weighted beyond just acres. Young forest acres does not equal old growth forest.

Agree, you need a metric to assess value of the conditional difference provided by these forests

loss of carbon sequestration from trees removed

Edge effect if putting in a highway adjacent to old growth or other forest type.

Removal of old growth redwoods will be the primary metric for a MAMU, NSO, and marten ESA jeopardy analysis

Redwoods a resource you can't mitigate for - an invaluable resource

Agree, old growth impacts pose the highest risk to the project.

If acres of old growth forest used to determine the acres of old growth forest to be mitigated for, additional metrics of the characteristics of the old growth forest lost/impacted,

will need to be compared to any candidate 'old growth' forest that may be considered as mitigation habitat.

A qualitative assessment for the old growth is imperative on many levels.

Also affects water quality, habitat, etc. - important aspect to look at

Can aerial surveys and estimates be done based on mapping?

Caltrans: yes, we have aerials and tree counts in some areas; others would require on-the-ground surveys

Caltrans: hoping that acreage will serve as measurement to help screen

Does group feel that tree diameters are needed?

It may come down to measuring every tree

HNTB: that's the plan, question is whether now or later

Caltrans: in support of using tree counts for old growth only?

both are important - acres and individual trees

Does this consider just direct impacts of old growth forest lost or also the acres of new edge created by each alternative? An alternative creating more old growth edge than other may have a greater impact on trees and wildlife.

and the contiguousness of the acres. Either fragmented or continuous.

Caltrans: can't answer now but could consider - possibly more qualitatively

Acre descriptions (i.e. non tree counts) in the non old growth forest types should be suitable for this exercise.

Can tree counts in old growth and mixed forests be estimated from mapping resources?

Caltrans: somewhat; can look at crown diameters through LiDAR but diameter and shape requires looking on ground

Related to loss of carbon sequestration from loss of temperate rainforest are effects on climate change

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LIDAR

Criteria: Trees / Forests

Performance Measure: Young growth / mixed forest (acres)

Criteria: Trees / Forests

Performance Measure: Mature mixed coniferous forest (acres)

We should discuss how you are defining young and mature forests. What is the difference/cutoff between these two?

Caltrans: Young forest is Green Diamond area

Mature forest in park east of road, landslide area

Old growth never cut, outside landslides is different habitat - that's mature forest

I would suggest not mixing forest type and habitat type, it gets pretty confusing. Capture the "mature forest" in the habitat acres only.

Criteria: Wildlife connectivity

Performance Measure: New habitat island generated (acres)

Wildlife Connectivity - measure: probability of number of animals that may be hit on each alternative

Wildlife connectivity: ability of each alternative to incorporate migration corridors into the design(s)

Criteria: Trees / Forests

Performance Measure: Other types, i.e. coastal scrub (acres)

No comments on this specific measure

Protect Natural Resources - Water is not on the list?

I do not see aquatic resources (e.g., tributaries, wetlands) on this list. This is the key resource regulated by the Corps.

For connectivity, alternatives may also have greater or lesser impacts to the permeability of each alternative for wildlife movement.

New habitat islands created assumes the permeability of alternatives is fixed across species.

For example, an alternative that can incorporate wildlife crossing features versus one that doesn't will have more impact on connectivity than just considering the acres fragmented by the alternative.

A tunnel versus a surface road is probably the greatest contrast for connectivity represented by the alternative.

Agree with everything said re. habitat connectivity above

Agree re wildlife connectivity, and also remember fish habitat and stream connectivity

Caltrans: appreciated; some things are difficult to quantify.

Need expert assessment on level of impact for these, e.g. connectivity.

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
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Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LiDAR

Criteria: Habitat

Suitability of various ESA species

Agree with need for qualitative assessments in sufficient detail to determine habitat value for different species.

Agree, acres of habitat will have to be weighted because they are not equal across species.

Habitat - will you use other sensitive species as performance measures?

Will other sensitive species be considered?

Bats, plants, migratory nesting birds

amphibians - understudied

Response: Caltrans will consider others but these habitat areas will help determine alts to move forward

Need to come up with some umbrella species that capture different habitats that are essential to many interconnected trophic levels.

We may need to give this some more thought - might be missing something by only considering those 3 species

The Coastal Act requires protection of all environmentally sensitive habitat areas (ESHAs) from non-resource dependent uses - hesitate to oversimplify between one sensitive species and another.

Would be helpful to know the difference in acreage of habitat impacts, perhaps a ranking of various "qualities" of ESHA (eg, o.g. redwoods).

Also, the Coastal Act has other provisions so it would also be important to evaluate the effects of various alternatives in relation to minimizing risks from hazards, maximizing public access, etc.

Need to evaluate what is most consistent with policies and resolve conflicts

Must look at hazards: e.g., how would on-alignment alternative affect risks from hazards?

Fishers aren't listed in NW CA

Criteria: Habitat

Performance Measure: Marbled murrelet habitat (acres)

Performance Measure: Northern spotted owl habitat (acres)

No comments specific to these measures

Criteria: Habitat

Performance Measure: Marten/fisher habitat (acres)

Martens and fishers: 1. have different habitat requirements

2. the value of the habitat impacted or mitigated for will have vastly different impacts for the overall conservation of these species.

(e.g., 5 acres of suitable marten habitat not equivalent to 5 acres of fisher habitat with respect to their impact of benefit for respective conservation)

For these reasons, they should really be considered separate performance measures.

Criteria: Recreational resources

Performance Measure: Number and type of sites / trails affected

This may be controversial, but the recreational infrastructure DeMartin Backcountry Campground and the Coastal Trail that may be destroyed

or have to be moved is not extraordinarily important, it is only moderately important. They are not irreplaceable, could be modified.

noise effects to Mill Creek Campground

Disregard my comment on Mill Creek Campground - those alternatives have already been dropped

Long-Term Safe, Reliable Roadway

Criteria	Performance Measure	How Measured
Road closure	Probability of long-term closure	Expert-based risk assessment including probability of deep ground displacement
Traffic mobility	Probability of lane reduction and mobility impact	Expert-based risk assessment including probability of unmitigable landslide activity / hydrogeological changes

Criteria: Road closure

Performance Measure: Probability of long-term closure

Need a sustainable route	Looks good ✓	This is a really important, especially for schoolchildren, businesses, tribal offices in CC and Klamath	Plus safety, access to hospitals	agree with these thoughts re importance of sustainable route for access
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Criteria: Traffic mobility

Performance Measure: Probability of lane reduction and mobility impact

Consider frequency of traffic impact	Fine - is this a measure of alternative as built? Caltrans response: yes, will be assessing each and comparing	Are they in landslide area and therefore still prone to possibility of lane reduction?			
Is there a related metric of what percentage of time when there would be a lane reduction?	Caltrans response: Believe it's still in same number but will have to clarify	Modeling what was done in expert-based risk assessment: probability of event w/ in time periods	So baseline for existing route would be 100% on this metric, correct?	Caltrans response: yes, no build as a baseline	
This goes to ongoing maintenance and long term costs. Most sustainable route again. Look to avoid closures and possibility for re-routes once it is built	We do not want to shift the route and in ten years be back to tens of millions to maintain the new route after all the resource impacts to change the location	completely agree re prior comments. also an impact on travel time for the community of Klamath for essential services such as school, food, health care etc.	Don't want to be back in this same position we are in now where travel times are high	agree with thoughts re most sustainable route	
Where is limit if running into complications once project is started?	Caltrans response: Good question, haven't considered for this effort	Any alternatives have that risk. Considering litigation risk, for instance	Can build time for changing conditions into time to build metric	No cap to time for repairing existing location. Have not experienced lack of emergency funds	On construction, will document risk of changing conditions and apply for more \$ if needed

Reduce Maintenance Costs

Criteria	Performance Measure	How Measured
Maintenance cost	Probability of increased maintenance costs	Expert-based risk assessment including probability of unmitigable earth movement

Traffic mobility criterion goes to ongoing maintenance and long term costs, Most sustainable route again. Look to avoid closures and possibility for re-routes once it is built

Criteria: Maintenance cost

Performance Measure: Probability of increased maintenance costs

This is a good measure	want to reduce maintenance costs especially in light of resource impacts associated with a new alignment	Seems fine but needs to be benchmarked against current maintenance costs	Response: would be benchmark used; have lots of data
Good with me, super-important for Caltrans	Nothing at this time	No comments	

Overall Methodology

Are these criteria and measures for each alternative route? Answer: yes	criteria, most sustainable alignment, least resource impacts	If assessing impacts of each alternative, what area is being assessed - footprint / ROW or cumulative impacts for each alt?	Caltrans response: for this tool, just looking at footprint / direct construction & long term impact	In environmental phase, must look at bigger picture	Need your help to determine critical criteria
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yes, should focus on protection with realistic expectations based on cost to build. A no impact trillion dollar project might not be feasible ; -) ✓	On front end, based on geology; then look at impacts with regard to cultural & natural resources, activities, etc.
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General Comments / Questions

I think this was very supportive, thank you very much

Protect the Economy

Criteria	Performance Measure	How Measured
Capital costs	Construction cost (millions)	Engineers' Order of Magnitude estimate
Mitigation costs	Mitigation cost range (high / medium / low)	Expert environmental estimate with historical cost data
Litigation costs	Risk of litigation (millions)	Risk based on costs of delay and level of potential controversy

Criteria: Capital costs

Performance Measure: Construction cost (millions)

No comments at this time from most

Are mitigation costs rolled into this criteria? Response: no, they're separate

Is "sustainable" interpreted as reliability or sustainability for the use of resources? Response: will consider whether it's sustainable and costs of maintaining

Add duration of construction?

Criteria: Mitigation costs

Performance Measure: Mitigation cost range (high / medium / low)

Count on 20% of project cost for mitigation

Avoid cultural resources as much as possible rather than mitigation

What will happen to the existing 101? Will there be a cost to take it down?

→

Response: still uncertain; part of mitigation potential

May use as recreational resource. Varies from alternative to alternative

What maintenance costs are needed for these new uses?

Criteria: Litigation costs

Performance Measure: Risk of litigation (millions)

Agreed upon actions on the front end, stick to decisions where geology allows, continue communications and we should not have litigation.

I agree, also keeping local tribes included in the process and having real meaningful consultation will help with not having litigation

Litigation and mitigation costs may not be mutually exclusive; costs for one may reduce other

How will you gauge litigation costs? Based on historic cases or just projections?

Response: Historic #s and looking at costs to repair this road; e.g., \$10M per year

Or could make high / medium / low determination of risk. #s are estimated

Believe this can be ranked as H / M / L risk - a meaningful criterion for this objective

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LIDAR

Agree on avoidance, not mitigation for both cultural and natural resource impacts

Natural resources fall under cultural for tribes

Seek ways to use mitigation to enhance habitat / natural resources, for instance thin conifers in old growth areas

Can look at an area based on what it contains but must consider significance for tribes, link to cultural resource value

Criteria: Trees / Forests

Criteria: Trees / Forests

Performance Measure: Old growth redwood forest (acres)

Question: Where will the old growth logs be going? Local Tribes?

Response: have not yet considered; big question requiring work with parks and tribes

we have talked about in the cultural resource group, could be part of mitigation

We've discussed it and noted the desire of tribes to be provided any old growth

Suggest: give to tribes to create artworks to be displayed

Parks have agreements re old growth wood, will honor

Elk Valley is absolutely interested in obtaining redwood resources if/ when available

Other items Caltrans is considering related to comment re wood for artworks are aesthetic project treatments to highlight tribal their ancestral connections

Criteria: Trees / Forests

Performance Measure: Young growth / mixed forest (acres)

Criteria: Trees / Forests

Performance Measure: Mature mixed coniferous forest (acres)

Criteria: Trees / Forests

Performance Measure: Other types, i.e. coastal scrub (acres)

No comments regarding these specific criteria

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
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Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LIDAR

Criteria: Habitat

No comments on specific habitats	Could impact multiple species; would have to determine if habitat is impacted by each alt and characteristics such as tree type	Very important for other species as well, e.g. elk	Consider creative mitigation, ways to improve habitat in nearby areas		
Can't ignore aquatic habitat even if it doesn't impact specific species; may be downstream impacts	Measure risk of sediment delivery to stream system; more watercourse crossings, more impact	Plus volume, scope and size of watercourse impact	Agreed. Biological group will be looking at this		
Adding, reaching out to Tribal Natural Resources to see what they have been doing and how they can assist the project	Should already be staff from tribes in those groups	Proposed: create category for # of stream crossings	Can more deeply investigate water impacts in later stages	Stick to aquatic resource impacts as a criterion; stream crossings are a specific metric, not a major category	May also be influenced by other factors re. water
This is a multi-dimensional consideration	Amount of fill may be a factor, for instance; broaden the metric to be multi-dimensional	Must consider more than just # of crossings	Agreed, must take into consideration	Like idea of adding this performance measure, agree more complex than just # of crossings	

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
	Mature mixed coniferous forest (acres)	
	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
	Marten/fisher habitat (acres)	
	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LIDAR

Criteria: Wildlife connectivity

Performance Measure: New habitat island generated (acres)

Good to see this metric, nothing to add	connectivity will be critical for any alternative
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Criteria: Recreational resources

Performance Measure: Number and type of sites / trails affected

Access to these resources must be considered; connectivity for humans to be considered along w/ wildlife	Agreed; performance measure is looking at existing	Criterion very easily mitigated; many opportunities to improve access and recreational opportunity in project area	Therefore almost beside the point	Agreed with both; add an element of tribal access	Some tribal routes already impacted; those areas still accessed, even if pre-contact
Agree, accessibility was one of the opportunities overlooked with the Prairie Creek bypass	Important; consider impacts to vista points, parking areas, etc.	Don't just provide another opportunity for people to trash area	Opportunity to include that component; think of area going through, magnitude of potential impacts	More than just road going through	

Protect Cultural Resources

Criteria	Performance Measure	How Measured
Cultural resources	Expert assessment of risk	Record search and pedestrian survey

Criteria: Cultural Resources

Performance Measure: Expert Assessment of Risk

Question: Where will the old growth logs be going? Local Tribes?	Caltrans response: have not yet considered; big question requiring work with parks and tribes	we have talked about in the cultural resource group, could be part of mitigation	We've discussed it and noted the desire of tribes to be provided any old growth	Parks have agreements re old growth wood, will honor		
Elk Valley is absolutely interested in obtaining redwood resources if/ when available	Suggest: give to tribes to create artworks to be displayed	Other items Caltrans is considering related to that suggestion are aesthetic project treatments to highlight tribal ancestral connections	Redwood to tribes could fall under mitigation ✓✓			
Natural resources fall under cultural for tribes	Can look at an area based on what it contains but must consider significance for tribes, link to cultural resource value	Agreed re protecting access for humans; add an element of tribal access	Some tribal routes already impacted; those areas still accessed, even if pre-contact	Can look at an area based on what it contains but must consider significance for tribes, link to cultural resource value	Avoid cultural resources as much as possible rather than mitigation	Agree on avoidance for both cultural and natural resource impacts
Elk Valley would appreciate continued consultation as they were unavailable for Cultural Resources Group Monday	Tribes don't distinguish between sites; need to take oral histories, traditional cultural landscape, etc. into account	Factors on a larger scale and how individual sites play into context of tribes	Impact to cultural resources and properties very important criterion to tribes	Hard to break resources down into individual sites	Consider having a cultural monitor on hand	Caltrans: acknowledged and will be key to project; talk to Amanda from Tolowa who knows details of how we'll proceed
Appreciate tribe's trust in the process	Caltrans doing a good job reaching out to all, treating with sensitivity and respect	Agree with what was said; can consider from a material perspective, but also consider holistic significance of area, connection to other areas	Consider how areas relate to each other re. access, etc.	May not be able to specify precise considerations	Have big picture in mind, not just from a material perspective, informed by tribes	

Long-Term Safe, Reliable Roadway

Criteria	Performance Measure	How Measured
Road closure	Probability of long-term closure	Expert-based risk assessment including probability of deep ground displacement
Traffic mobility	Probability of lane reduction and mobility impact	Expert-based risk assessment including probability of unmitigable landslide activity / hydrogeological changes

These 2 criteria and metrics make sense.

Criteria: Road closure

Performance Measure: Probability of long-term closure

Makes sense ✓	No comment	These 2 criteria and metrics make sense.	What is the duration of the "closure" used in the metric? They make sense, just wondering. Caltrans: not certain, but think approximately a week used in study - will get back to you	This seems appropriate and straight forward	Might be good to differentiate short term closure and long term
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Caltrans asks: Does a week make sense?	→ I would be concerned of long term of more than 1 week	Short term 1 week or less long term longer than 1 week	is there a way to keep closure to part of a day period? Caltrans response: yes, if construction closure; may be longer if not under our control
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Criteria: Traffic mobility

Performance Measure: Probability of lane reduction and mobility impact

This seems less important than long-term closure. We have lived with this as the "normal" for a while now. Not ideal, but not the worst!

Overall Methodology

Seems we're always behind on info; would be more effective if we had info prior to meetings (e.g., geotechnical)

Protect the Economy

Criteria	Performance Measure	How Measured
Capital costs	Construction cost (millions)	Engineers' Order of Magnitude estimate
Mitigation costs	Mitigation cost range (high / medium / low)	Expert environmental estimate with historical cost data
Litigation costs	Risk of litigation (millions)	Risk based on costs of delay and level of potential controversy

These seem weird to group under "protect the economy"

Criteria: Capital costs

Performance Measure: Construction cost (millions)

This seems more related to feasibility of the project, so if the costs are too high then the likelihood of project completion is more difficult

Capital costs are straightforward.

Question for Jaime, is there any requirement for local government contributions?

Caltrans response: not that we're aware of

Criteria: Mitigation costs

Performance Measure: Mitigation cost range (high / medium / low)

Could occur to sway one alt higher than another: for Caltrans to declare cost of mitigation has exceeded some degree of possibility

Could choose to limit mitigation. important not to assume we'll use this to avoid full cost of mitigation

That would externalize cost onto the environment

Caltrans response: will put thought into that

Mitigation process important; old growth redwoods hardest to overcome

Should rethink this measure; hadn't considered that project success would be based on mitigation cost

Incentivizes doing as little mitigation as possible

However, haven't given this angle much thought; different ways to look at it

Agree that mitigation will be make-or-break; must put in forefront, not have it be elephant in room

It is something we must take seriously, understand what it means to each chosen route

Hoping to see what comes out of geo studies, hope that helps us eliminate some alts

Mitigation is a big focus; how to measure cost of mitigation?

Possibly use other Caltrans projects as benchmarks

More mitigation creates less litigation which equals sooner implementation

How would you put a dollar amount on mitigation?

For example, if different #s of tree, would you use an amount per tree? How would you apply?

Caltrans: noted that an old growth tree is not mitigatable; will do our best to determine H / M / L

...since you can't compare apples to oranges. If spending too much to mitigate, consider spending more to avoid impact instead

Don't want to minimize value of old growth, but many old growth redwoods.

May need to move beyond attitude of protecting one specific plant or tree

Consider what else can be done to mitigate

Criteria: Litigation costs

Performance Measure: Risk of litigation (millions)

I think risk of litigation could be both a financial cost but also a cost of time for project completion

Caltrans: yes, discussing cost of greater time to complete project

Mitigation is going to determine litigation

That is the quote of the day

Mitigation and litigation may not be mutually exclusive

Revelation that alternatives have different attributes needing mitigation, so those will be weighed

Agree in part that mitigation could influence litigation but it is only one criteria (As someone who has sued Caltrans)

Good point that this cost is less about dollars than about time and project feasibility.

Important point; perhaps most important. Value Congressman Huffman's process

All of us want a project that happens sooner than later and works for all

This will be the tipping point; if only bottom-line mitigation will wind up in court

If we come up with substantial mitigation right at the start, can avoid delay

Not sure how we do that through CEQA process, but can proceed differently from usual

Criteria: Trees / Forests

Criteria: Trees / Forests

Performance Measure: Old growth redwood forest (acres)

Old growth can be harmed by adjacent effects, not just by cutting.

For instance, on Hwy 101 along Ave of Giants show tree die off due to the changes in ground water flow and ambient moisture availability.

That area is a 4 lane hwy and many old growth trees have died back 50-100 feet. Dead tops abound.

Mitigation process important; old growth redwoods hardest to overcome

Old growth redwood is going to be the key to this project.

Criteria: Trees / Forests

Performance Measure: Mature mixed coniferous forest (acres)

Criteria: Trees / Forests

Performance Measure: Young growth / mixed forest (acres)

Criteria: Trees / Forests

Performance Measure: Other types, i.e. coastal scrub (acres)

No specific comments on these measures

Criteria: Habitat

Habitat continuity/performance is an important, albeit harder to quantify, criteria

Some of the mitigation options may include adding protections to some of these habitats.

i.e., ..such as a purchase of lands from GDRC that have Murrelet habitat in temporary protection that if added to the park would be more permanent protection.

I think considerations of water (stormwater runoff, erosion, stream alteration, etc.) should be included.

Also wondering why sensitive plants aren't a consideration? I realize there are many areas of NR that could be included, but these seem key

I had a similar thought. In addition to acres, measures of success could be based on hydrologic function and forest ecosystem function

Agree with adding an aquatic criteria as discussed yesterday (sedimentation into streams).

To the extent that there are large amounts of fill to be deposited elsewhere, are there specific measures for ails where that would be criterion?

HNTB: We are calculating cut and fill; not certain where it's going but important to consider and evaluate

Great point about the spill disposal sites. If we look regionally there may be projects in need of some fill.

The trick will be timing so that when we need to dispose there are areas ready to accept the fill.

Protect Natural Resources

Criteria	Performance Measure	How Measured
Trees / Forests	Old growth redwood forest (acres)	Aerials / field review information
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	Young growth / mixed forest (acres)	
	Other types, i.e., coastal scrub (acres)	
Habitat	Marbled murrelet habitat (acres)	Aerials / existing reports
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	Northern spotted owl habitat (acres)	
Wildlife connectivity	New habitat islands generated (acres)	Aerials
Recreational resources	Number and type of sites / trails affected	Aerials / LIDAR

Criteria: Wildlife connectivity

Performance Measure: New habitat island generated (acres)

Habitat continuity/performance is an important, albeit harder to quantify, criteria

Glad to see connectivity in there

Criteria: Recreational resources

Performance Measure: Number and type of sites / trails affected

new access can be more thoughtfully planned and make it better so that the highway isn't a "wall" for recreation and habitat connectivity both.

These two criteria makes sense to me but I'm curious what measuring wildlife connectivity with acres look like.

Generating new habitat islands would not guarantee increased wildlife habitat connectivity.

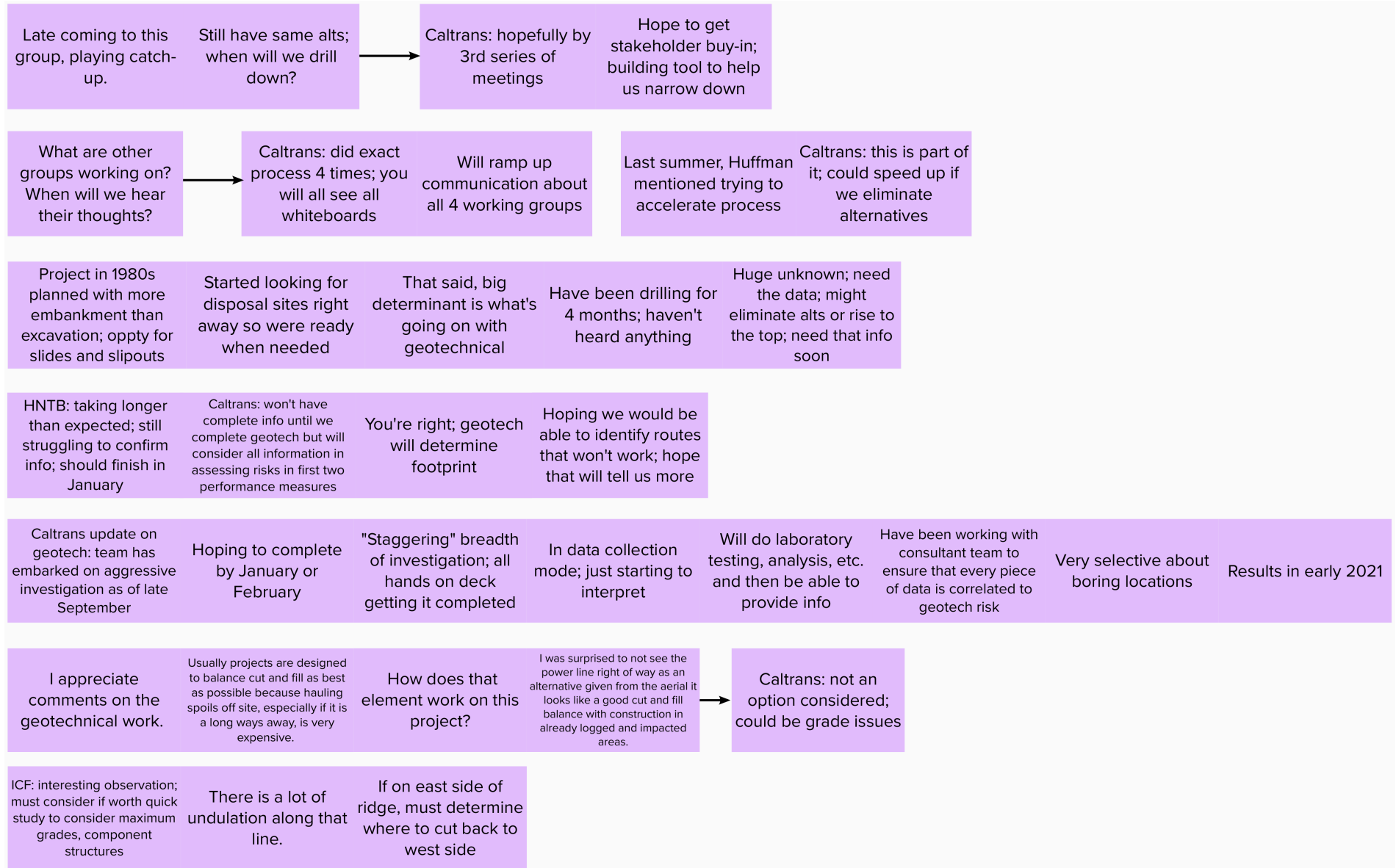
Where are cultural trails included?

Caltrans: developed list at other meetings, will share

On recreational access I think everyone's assumption is that the project can mitigate to improve whatever is impacted and leave it better than before

Opportunity to create new recreational opportunities / enhance access to this resource

General Comments / Questions



Last Chance Grade Working Group Alternative Workshop 1 - Polling Results

1. Overall Methodology: What is your level of support for the overall process that has been described today?	Highly supportive		Somewhat supportive		Neutral		Somewhat		Do not support		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	33%	2	50%	3	17%	1	0%	0	0%	0	6
Biological Resources Working Group	46%	6	23%	3	31%	4	0%	0	0%	0	13
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	50%	5	40%	4	0%	0	10%	1	0%	0	10

2. Objective: Long-Term Safe, Reliable Roadway - To what degree do you support the revisions as discussed for the Objective: Long-Term Safe, Reliable Roadway?	Highly supportive		Somewhat supportive		Neutral		Somewhat unresponsive		Not supportive - revisions do not address my concerns		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	33%	2	17%	1	50%	3	0%	0	0%	0	6
Biological Resources Working Group	56%	9	25%	4	19%	3	0%	0	0%	0	16
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	33%	3	44%	4	22%	2	0%	0	0%	0	9

3. Objective: Reduce Maintenance Costs - To what degree do you support the revisions as discussed for the Objective: Reduce Maintenance Costs?	Highly supportive		Somewhat supportive		Neutral		Somewhat unresponsive		Not supportive - revisions do not address my concerns		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	33%	2	17%	1	50%	3	0%	0	0%	0	6
Biological Resources Working Group	36%	5	43%	6	21%	3	0%	0	0%	0	14
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	22%	2	33%	3	44%	4	0%	0	0%	0	9

4. Objective: Protect the Economy - To what degree do you support the revisions as discussed for the Objective: Protect the Economy?	Highly supportive		Somewhat supportive		Neutral		Somewhat unresponsive		Not supportive - revisions do not address my concerns		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	0%	0	50%	3	50%	3	0%	0	0%	0	6
Biological Resources Working Group	21%	3	50%	7	29%	4	0%	0	0%	0	14
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	25%	2	50%	4	13%	1	13%	1	0%	0	8

5. Objective: Protect Natural Resources - To what degree do you support the revisions as discussed for the Objective: Protect Natural Resources?	Highly supportive		Somewhat supportive		Neutral		Somewhat unsupportive		Not supportive - revisions do not address my concerns		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	0%	0	50%	3	50%	3	0%	0	0%	0	6
Biological Resources Working Group	27%	4	47%	7	27%	4	0%	0	0%	0	15
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	38%	3	25%	2	38%	3	0%	0	0%	0	8

6. Objective: Protect Cultural Resources - To what degree do you support the revisions as discussed for the Objective: Protect Cultural Resources?	Highly supportive		Somewhat supportive		Neutral		Somewhat unsupportive		Not supportive - revisions do not address my concerns		Total #
	%	#	%	#	%	#	%	#	%	#	
Cultural Resources Working Group	0%	0	100%	6	0%	0	0%	0	0%	0	6
Biological Resources Working Group	33%	4	33%	4	33%	4	0%	0	0%	0	12
LCG Partners	100%	6	0%	0	0%	0	0%	0	0%	0	6
Huffman Stakeholder Group	63%	5	0%	0	38%	3	0%	0	0%	0	8