

Last Chance Grade July 2018 Community Open House Summary

Prepared by:



800 Hearst Avenue
Berkeley, CA 94710
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Last Chance Grade



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Last Chance Grade Summary of July 2018 Community Open House

I. INTRODUCTION

The “Last Chance Grade” (LCG) is a 3-mile segment of US Highway 101 in Del Norte County, California located between Klamath and Crescent City. Last Chance Grade is an area of highway prone to geological activity. Landslides and road failures have been an ongoing issue for decades and substantial funds have been invested in repairs. The road is currently safe to use, but a long-term solution is needed to ensure continued safe and reliable transportation on US 101.

In March 2014, Caltrans established the Last Chance Grade Partnership to create an active, working relationship with the agencies and groups that have management responsibilities for lands and resources that would be directly impacted by any realignment of Highway 101 at Last Chance Grade.

During January 2015, the LCG Partners hosted three community workshops presenting possible alternatives for future study, and provided opportunities for stakeholders and the public to submit input regarding the alternatives. In June 2015, Caltrans completed the Last Chance Grade Feasibility Study which identified a full range of alternatives that could provide a long-term solution. Following the Feasibility Study, Caltrans initiated the preparation of the Project Initiation Document (PID), also referred to as the Project Study Report (PSR), which describes the scope, cost, and potential schedule for a transportation project. The PID also narrows down the number of project alternatives to be studied, which allows for a more efficient design and engineering process. A further set of three community Town Halls in March 2016 allowed the LCG Partners to provide updated project information to the public and to receive additional feedback. The Project Study Report was completed in June 2016.

In May 2017, Caltrans received approval of \$5 Million to perform preliminary geotechnical investigations. Caltrans and the Federal Highway Administration (FHWA) began coordinating an Expert Risk Assessment to study the practicality of maintaining an open and resilient highway in the current location, and consider the risks associated with remaining on the current alignment and with realigning the highway. The LCG Partners hosted a Community Open House in October 2017 to provide updated project information to the public. The Final Expert-Based Risk Assessment (EBRA) was completed in June 2018.

The conditions at Last Chance Grade are complex and there is no alternative that can be achieved without impacts to the significant natural and cultural resources within the project area. As a result, Caltrans is engaged in extensive activities to ensure coordination with the wide variety of federal, state and local agencies and interests who need to be involved. Caltrans has also been meeting with and providing information to area officials regarding the funding needs of the project. Caltrans is limited in its efforts to advance the planning process until additional funding sources are identified.

II. METHODOLOGY

On July 19, 2018, Caltrans hosted a Community Open House at the Del Norte County Fairgrounds in Crescent City, California to inform the community of the status of the project and current efforts to ensure the continued safety of travelers on Last Chance Grade. The Open House was held in response to stakeholder inquiry as well as Caltrans' commitment to keeping the community updated on the substantial project progress made since the last Open House held in October 2017.

Outreach Methods

The Community Open House was promoted and advertised through a variety of methods including:

- Informational brochure mailed to all residents of Del Norte County
- Posting on dedicated webpage at www.lastchancegrade.com, with update emails to registered users, and on District 1 social media
- Social media and other outreach by partner agencies through established communications channels
- Advertisement on Del Norte County Fairgrounds electronic signage
- Press releases and media coverage including local and regional online and print newspapers and radio.

Outreach materials are reproduced in Appendix A.

Community Open House

The Community Open House was conducted by Caltrans, with support from agency partners and assistance provided by MIG, Inc. MIG is Caltrans' On-Call contractor whose participation is made available through funding and resources provided through the statewide Planning Public Engagement Contract.

The Open House was held at the Main Hall of the Del Norte County Fairgrounds in Crescent City from 6:30 – 8:00 p.m. The venue is an ADA-accessible location.



Open House Format

Facilitator Joan Chaplick, MIG, Inc. welcomed participants and briefly summarized the agenda for the evening. She then introduced Senator Mike McGuire, who provided brief opening remarks regarding the project. Senator McGuire acknowledged the partners and stakeholders who have contributed their efforts, many of whom were present at the Open House. He spoke of the crucial importance of a solution for Last Chance Grade to the region's economy and the safety of its residents and visitors and outlined the current status of the project, including funding considerations. He briefly noted the need for detailed environmental studies before proceeding further and thanked participants for their continued strong interest and advocacy. Senator McGuire introduced Caltrans District 1 Director, Matt Brady. Senator McGuire took questions directly from the audience following his remarks and also requested assistance from Director Brady in



responding to some of the questions received. Director Brady noted that the District considered Last Chance Grade to be one of the District's highest priority project and that it was one that the new Statewide Caltrans Director has been briefed on and given a tour by local state and nation park partners.

The program continued with PowerPoint presentations by Jaime Matteoli, Caltrans Project Manager for Last Chance Grade, and Scott Anderson of BGC Engineering, who headed up the Expert-Based Geotechnical Risk Assessment (EBRA). Mr. Matteoli and Mr. Anderson were accompanied by a panel of representatives from partner agencies, including:

- Victor Bjelajac, Superintendent, California State Parks
- Matt Brady, Caltrans District 1 Director
- Larry Depee, Commander, California Highway Patrol
- John Driscoll, District Representative for Congressman Jared Huffman
- Gerry Hemmingson, Vice Chair, Del Norte County Board of Supervisors
- Steven Mietz, Superintendent, Redwood National and State Parks, National Park Service
- Matt Schmitz, California Division Director, Project Delivery, Federal Highway Administration

Presentation by Caltrans District 1

The Caltrans presentation, as provided by Mr. Matteoli with contributions from several partner agency representatives, included:

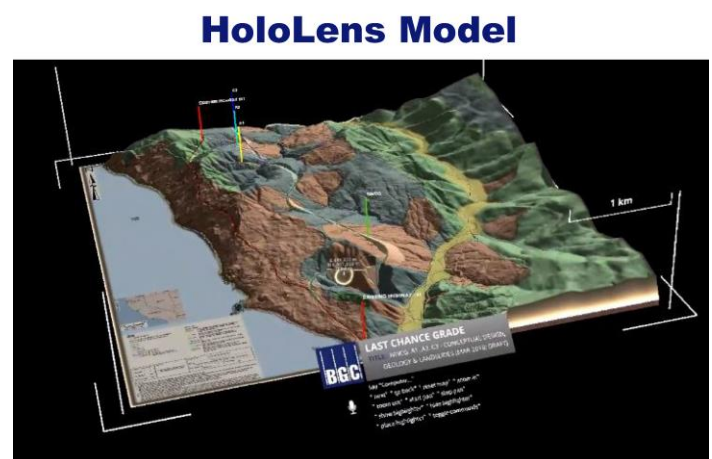
- Introduction to the agencies and their representatives taking part in the panel.

- A brief summary of efforts to continue to keep the road open and safe, as well as developing a more long-term solution, and an analysis of project need
- An update on project progress including details of current and ongoing improvements, repairs to 2017-2018 storm damage and other construction work
- Details of monitoring and safety measures
 - Monitoring measures include “boots on the ground” for frequent site checks, the Near Real Time Monitoring System, aerial photography and ground surveys
 - Safety measures include public information, barriers and railing, and paving and grinding to smooth the road surface
- A history of funding and project development, including stakeholder collaboration, completed studies and documents, preliminary geotechnical studies, and the steps needed to ensure a complete and efficient process. This includes a value analysis to assist Caltrans in determining the extent of the studies needed.
- A brief description of alternative alignments and the introduction of two new alternatives, located on or near the present alignment but consisting of substantial upgrades rather than simple repair and maintenance, generated by the recently completed EBRA.
- A summary of next steps and proposed scheduling
- Sources of further information including the Last Chance Grade website address and contact details for Project Manager Jaime Matteoli.

Presentation by BGC Engineering

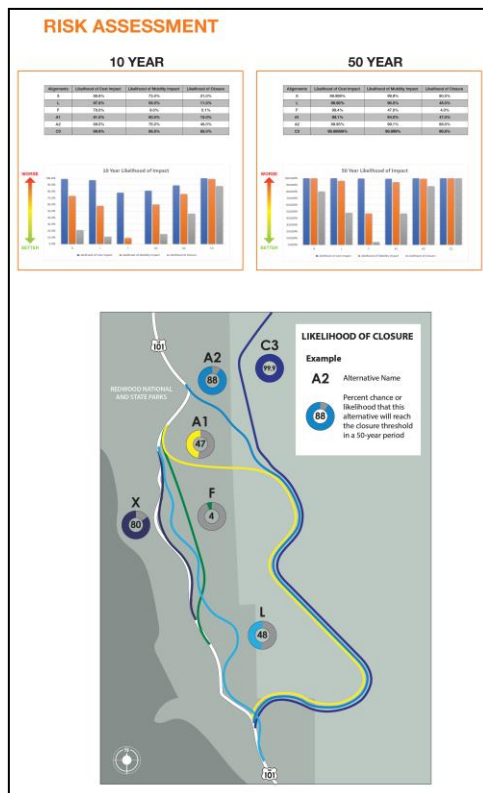
The presentation by Scott Anderson of BGC Engineering provided an explanation of how the panel of geotechnical risk experts responsible for the EBRA arrived at their conclusions. His presentation included the following:

- A brief introduction to the geology of the area and the issues caused by seismic instability
- An explanation of how engineers utilize their experience, judgment and best practices to analyze geotechnical risk
- Discussion of technology used to assess the geology of the various alternative sites, including “lidar” (laser-enabled distance measurement) and development of HoloLens (a 3D holographic visualization platform) models of the sites.
- Summary of methodology for assessing the chance of high maintenance costs, unusual repairs causing delay, and/or the necessity for long-term closure or abandonment for each of the alternatives after construction.



- Likelihood of mobility impacts or closure for each alternative, expressed as a percentage and categorized as high, medium or low risk.
- A summary of overall conclusions reached regarding initial assessment of geotechnical risks for the alternatives currently proposed for study.

Following the presentations, the panelists introduced themselves, their agencies and their roles in the Last Chance Grade project, and answered questions from participants. Afterwards, participants were welcomed to view the Open House consisting of the following maps and displays:



- **Storm Damage and Repairs:** A map showing the locations, with accompanying photographs and information, of work to repair storm damage sustained during heavy rains in March 2016 and the winter of 2016/2017.
- **Project Alternatives:** Map showing the 8 alternative alignments currently being studied; their position in relation to the existing Last Chance Grade alignment, Highway 101, and State and National Parks; and the topology of the region.
- **Geotechnical Studies:** Types of geotechnical studies anticipated for Last Chance Grade and the location of different geologic units in the area. Results will be used to validate or refine the project alternatives.
- **Risk Assessment:** Information on the results of the Expert-Based Geotechnical Risk Assessment, including the estimated likelihoods of impact and risk of closure for each alternative in a 50-year period.

Last Chance Grade Caltrans and partner staff experts were available at each display to answer questions.

In addition to the static displays, BGC Engineering provided an “augmented reality” experience, utilizing the HoloLens technology, which allowed participants to virtually view site conditions for the various alternative alignments (the majority of which are currently inaccessible to the public). Five participants at a time donned a HoloLens headset—a head-mounted mobile holographic computer that allows the user to interact with 3D digital data sets and environments—and were led by Mr. Anderson on a brief virtual “tour” of the alternative site models. The majority of Open House attendees took part, and many remarked that it helped them gain a much improved understanding of the difficulties presented in choosing a viable alternative.

Attendees were also provided with a handout including the Open House agenda, information on the Risk Assessment results and a Comment Card for any additional comments they would prefer to submit in writing. For reproductions of all handouts, presentations and displays, please see Appendix B, "Open House Meeting Materials."



III. COMMUNITY OPEN HOUSE PARTICIPATION AND RESULTS

Community Open House Participation

More than 90 people from throughout the region signed in with an estimated 120+ attendees at the Community Open House. They represented a variety of organizations and interests, including:

- Area residents, many of whom regularly travel Last Chance Grade
- Local and regional transportation agencies
- Law enforcement agencies
- County and municipal governments
- Fire departments and Community Service Districts
- Regional and local planning staff
- Native American tribes
- Environmental organizations
- National and State Parks and natural resources agencies
- Political organizations
- Local and regional Chambers of Commerce
- Local business interests
- Local news media

Community Open House Results

Questions and comments addressed to Senator McGuire following his remarks included:

- What about getting some federal funding for this project?
 - **Responses:**
 - **Senator McGuire:** Federal funding will be challenging, although we are working diligently on pursuing it. Right now, state dollars are our best bet, and we're convening a meeting next week with all California transportation leaders to try to get these dollars secured on behalf of the environmental work.
 - **Caltrans:** We have been meeting with the Federal Highway Administration representative to discuss funding options as well.
- If the gas tax is repealed in November, what will you do?
 - **Response (Senator McGuire):** If that happens, it will be a significant challenge. We need those gas tax dollars.
- Exactly what does the \$60M for environmental studies go towards?
 - **Response (Senator McGuire):** Note that the estimate of \$60M is the high end of the range—we are estimating approximately \$50-\$60M needed. It's a high figure, but reduced from what was originally discussed. That money will go toward assessing every kind of impact—trees, habitat, watersheds, Native American cultural assets, etc.—based on the preliminary design. Given that there are several possible alignments and all must be studied under a variety of conditions at different times of year, there are a lot of studies to do. The number could get smaller depending on how many alignments we ultimately decided to study. Jaime Matteoli will tell you more in his presentation.
- Is this project in competition with other large projects statewide, such as the water tunnels in Sacramento and the high-speed train?
 - **Responses:**
 - **Senator McGuire:** No, they will be completely separate funds. Funding for the water tunnels comes from the Department of Natural Resources. There are some SB1 gas tax dollars going to the high-speed train, but we will not be in competition with that. Our first goal is to get the \$50-\$60M here in the next year or two. Once we're at the stage of the larger construction project we'll be competition with other construction projects, but that will be awhile in the future.
 - **Caltrans:** These projects, with all the studies required, can get quite expensive—the studies for the Willits bypass exceeded \$100M. There are many factors to be examined, and with a World heritage site, critical habitats, endangered species, etc., we'll have a lot of pushback, and a lot of things to consider and avoid. The more of this work we do upfront, the better and more efficient this project will be in the long term.
- If there are three different alternatives to study instead of nine, will that bring the cost down a bit?

- **Response (Caltrans):** Yes, that will bring down the cost and that’s what we’re trying to accomplish, if possible, working with our partners and the stakeholder group. Some of the alignments you see here will turn out to be infeasible.
- How many studies have already been completed, and do they show anything different from those that have been done before? I’ve been here since 1989, wondering when something was going to be done about Highway 101. When I first asked, I was told that it was too expensive. But something must be done soon.
 - **Responses:**
 - **Caltrans:** This project has been studied in the 1980s, 1990s, 2000s and now in the present day, but we’ve never been at a point where we’ve had the amount of funding necessary to fully begin the environmental studies. We’ve also had different approaches to the solution over time—for instance, at one point we were considering a four-lane facility, but we now know we want a two-lane facility, so our current approach is fundamentally different.
 - **Senator McGuire:** You speak for all of us. We have to get the funding, and thanks to everyone’s hard work over the last 24 months, we’re starting to see progress. We’ve still got a lot of work to do, but what we can do is continue to work together. Caltrans is engaged in this at the highest level—Caltrans’ statewide Director Laurie Berman will meet with District 1 Director Matt Brady and I in Sacramento next week.

Questions and comments addressed to Caltrans and partner agency panelists included:

- In the case of our frequent power and cell phone tower outages, bad weather, etc.—how does the message that the road needs repair get from the person in the field to the District so they can send out repair personnel?
 - **Response (Caltrans):** Because we have “boots on the ground” every day, we are very familiar with cracks in the road or other areas that bear watching. During storm events, we have someone out watching 24/7 and repair crews in the field. Also, the sensor system is solar-powered so power outages are not an issue. We have a number of ways to get messages back to the district headquarters, and when we see something, we take action as quickly as possible.



- Where it says 80% risk of closure within 50 years—does the risk of closure get greater as time goes on?
 - **Response (BGC Engineering):** As engineers, we certainly don’t like to build things if we’re fairly confident they won’t last 50 years. We’ll be able to refine those number as we get more information, and they’re likely to change as we remove

uncertainties. We'll get better percentages than 80%. But it's also necessary to keep in mind that this is a very challenging and unusual place to build a road. It's difficult to ensure that we're building something that will last forever.

- Isn't there a system of logging roads through that area that could be used as a temporary route in the case of an emergency, just as they are?
 - **Responses:**
 - **Caltrans:** In selecting the alternative designs that we have, we looked at all the different possibilities for using the existing terrain, including whether the existing private roads could be used. There's one 25-mile route through Green Diamond and park lands that could be used for emergency services if necessary, but none that are really suitable for general public use.
 - **California State Parks:** Some of those roads are private and some are abandoned roads which we maintain. We have a reciprocal agreement with Green Diamond for emergency personnel transportation, and an alignment exists that can be used for that, but no, it's not suitable as a public road.



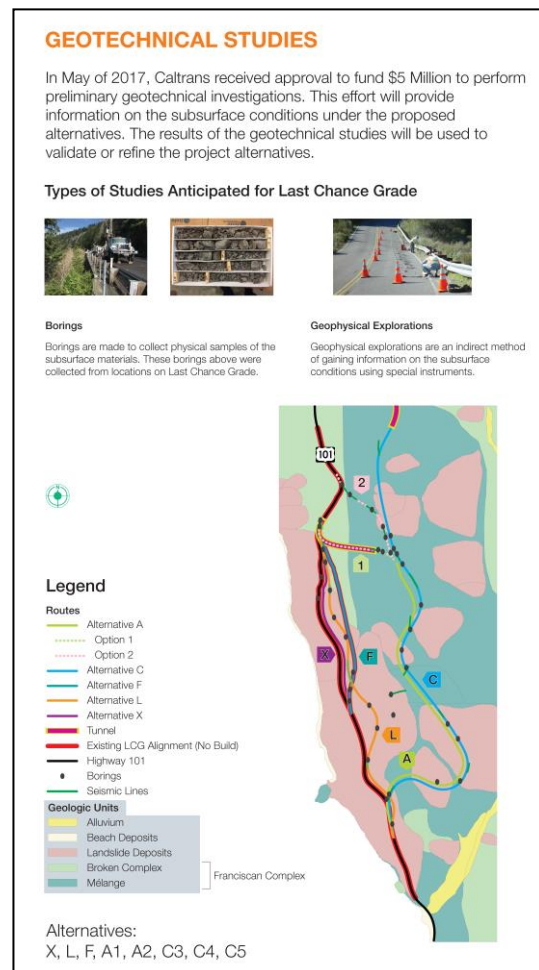
- With so many groups working on the project, there's a high probability of turnover through people retiring, going somewhere else, etc. What's the impact on the project of losing key players (both internally and among the stakeholders) and needing to bring new people up to speed?
 - **Response (Caltrans):** Yes, that's a risk with these long-term projects. We're already

had turnover in staff within the last few years, so we're carefully documenting all discussions and what agreements have been made and emphasizing accountability. You'll find documentation of all our partner meetings on our project website. In terms of the Huffman stakeholder group, we have turnover there as well, with new elected officials and other changes. There is a state-appointed moderator who works with the stakeholder group and is very careful to keep everyone up to date and keep close notes.

- Would it be possible to consider bypassing Last Chance Grade with a floating bridge?
 - **Response (Caltrans):** This was considered during the feasibility study process, and it wasn't really feasible in terms of cost or environmental impacts.
- I'm wondering why you say that all alternatives are expected to have a high maintenance cost, when the maintenance cost for Alternative F is miniscule compared to the others.
 - **Response (BGC Engineering):** I think you may have been confused because I summarized the results very quickly for the sake of moving through the presentation. It was the risk of closure that was very small for Alternative F

compared to the others. Maintenance costs are indicated by the blue bars, and they're very high for all alternatives.

- Assuming that everything works on schedule with no further complications, what would be the construction schedule with fewer alternatives compared to that estimated for the original set of alternatives?
 - **Response (Caltrans):** The estimated date for completion for the original alternatives was 2039. It was based on an estimated schedule for the most challenging alternative, which is C5. The process of narrowing the number of alternatives will probably cut that down. The environmental process will become simpler, and we'll save both time and dollars. At this point we don't know the likelihood of selecting any of the proposed alternatives. Once we complete the value analysis, which should be later this summer, I'll have a better answer for you.
- If that was the timeline for the longest alternative, what was the timeline for the shortest?
 - **Response (Caltrans):** We don't have an estimated schedule for the shorter alternatives.
- How much was spent on the construction for re-establishing the Big Sur Highway within the last couple of years, and what relevance might that have to Last Chance Grade?
 - **Response (Caltrans):** I don't have that number offhand, but will get you that information.
- Will there be a formal Environmental Impact Report/Environmental Impact Statement (EIR/EIS) process?
 - **Response (Caltrans):** Absolutely—we will be using federal funds and both an EIR and EIS will be required.
- You say that we need more information so you can make a better judgement of the risk. How certain can you be about it? Can any alternatives be eliminated based on the information you have at this point?
 - **Response (BGC Engineering):** These are still very broad-brush numbers. Every alternative has some considerable information that has to be discovered through the geotechnical investigations.



- My question is for John Driscoll. I heard that \$15 billion was transferred out of the California gas tax funds, and I don't know where it went. I'd be interested in knowing if that was true, and if that is the correct figure.
 - **Response (Congress Huffman's Office):** We will need to follow-up on that.
- What's the timeline for the drilling that will be done—will it happen this year? I assume that's what will really tell us where a viable location for a bypass would be.
 - **Response (Caltrans):** We're beginning the first phase of drilling right now in areas that are lower-impact and easily accessible through Green Diamond and their roads. We're still determining when drilling will take place in some of the less accessible locations; it will probably take place in 2019, possibly as early as summer 2019. The value analysis will be an important step to help us determine where we are actually drilling, as the drilling has its own impacts and we don't want to impact those resources if it's not necessary.
- 2039 is a long way away. What will happen if the road fails prior to that?
 - **Responses:**
 - **Caltrans:** If there is a large-scale failure, we would immediately begin digging into the hillside so we could restore traffic as soon as possible—probably within a number of days.
 - **BGC Engineering:** I would agree that if a large-scale failure occurred, it may be feasible to construct an emergency route along the current alignment but it's very unlikely that it will be as useful. But none of the five experts conducting the geotechnical risk assessment—who have a wealth of experience from Washington, Oregon and California and are very familiar with the highways and coast ranges under all conditions—expressed a real concern that a large-scale failure was likely to happen. They demonstrated a comfort level with assuming it would not occur.
- If Last Chance Grade is replaced with a bypass, what would happen to the existing road?
 - **Response (Caltrans):** The road would most likely be restored to some extent, but it would not be used as a highway. We're exploring options with our partners and stakeholders.
- Since Alternative F seems to have least impact on the wildlife and topography of the area, would choosing that alternative reduce the amount of studies that need to be done.
 - **Response (Caltrans):** F is the most expensive alternative, and there would still be an environmental impact, particularly at the areas where portals of the tunnel would be located, so we would still have to do environmental studies.
- How are you defining the impact of closure? I know there's variable risk, but what's the timeline—a day, a year?
 - **Response (Caltrans):** The factsheet on the back of the agenda gives details regarding this. It defines three conditions, any one of which would bring the highway to the closure threshold: costs that are impractically high to continue maintaining it; full closures could last more than a few weeks; or structures could be distressed and not safe for traffic.

- How much money have you spent on Last Chance Grade in the last two years, and, if you were to calculate what there is to spend keeping it in repair until 2039—would it be less costly if you invested it toward a more permanent solution instead?
 - **Response (Caltrans):** It's difficult to say. We do know that we will have spent \$85M on repairs since 1997. It's estimated that about \$10M has been spent just on repairs in the last two years. However, we have the responsibility to bring the road back into a condition of repair when it is damaged, and spend whatever resources are necessary to keep it safe. Someone mentioned earlier that back in the late 1980s/early 1990s a permanent solution was not economically viable. A lot has changed since then, and we do have funding to begin these studies, so now we're in a better position to pursue the large amount of funding needed for a long-term solution.
- How long will the environmental studies take, and can you use any of the environmental studies done in the past by other local organizations such as Humboldt State? And how much money has been spent on Last Chance Grade from the beginning until now?
 - **Response (Caltrans):** We did spend money before 1997, but we don't have a complete total. We do know that it's \$85M beginning in 1997. As to using past studies, there is a wealth of existing information about the area, and we will use all that is available to help us continue the environmental process. Green Diamond has been very cooperative in providing the information that they have as well.

Participants were encouraged to fill out the comment card on the back of the agenda if they wished to submit further comments or questions. Comments submitted are included in Appendix C, "Open House Results." Attendees were also encouraged to continue participating in the process—there will be many more opportunities, including the next Community Open House to be held in Spring 2019.



APPENDIX A: OUTREACH MATERIALS

I. Informational Mailer

Last Chance Grade Project

Safe, Smart and Sustainable Solutions



The Last Chance Grade Project is a collaborative, multi-year effort to identify and implement **safe, smart and sustainable solutions** for a 3-mile segment of coastal Highway 101 through Del Norte County.

Over 5,000 people drive Last Chance Grade every day.

It is a vital connection for everyone who lives, works and travels in Del Norte County.

Project Goals:

- Ensure the safety and reliability of the highway—now and for the future.
- Find a technically feasible, cost-effective alternative.
- Respect our important environmental and cultural resources.
- Keep Del Norte moving!



CURRENT CONDITIONS

The Geology of Last Chance Grade

Last Chance Grade is in a unique geological setting—the land constantly shifts and settles. Road movement is normal in a seismically active area like this, and it requires ongoing monitoring, maintenance and repairs.



Caltrans works diligently to ensure that Last Chance Grade stays safe and reliable for everyone who travels on it. The road has never been fully closed for longer than one day.

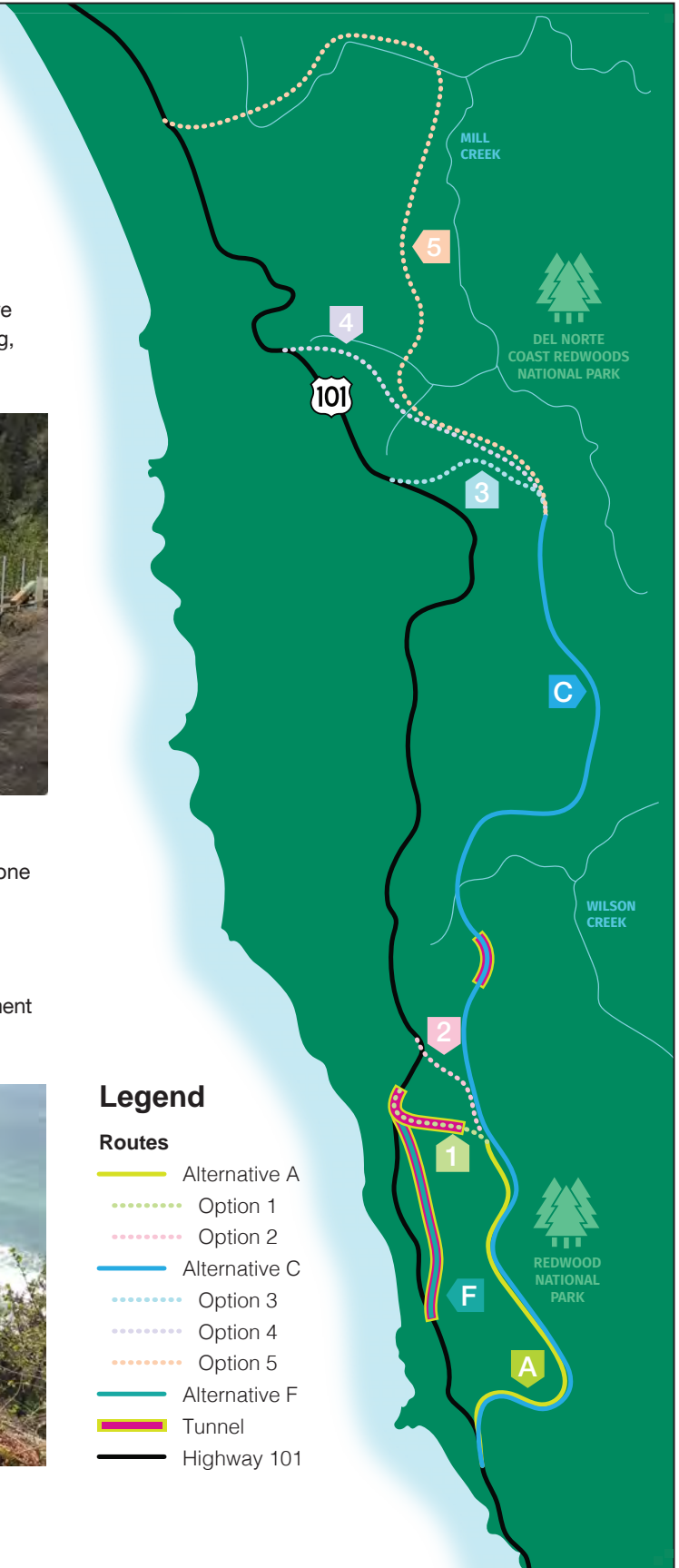
Since 1997, Caltrans has spent over \$85 million repairing this 3-mile stretch. This level of investment simply isn't sustainable over the long term.



Legend

Routes

- Alternative A
- Option 1
- Option 2
- Alternative C
- Option 3
- Option 4
- Option 5
- Alternative F
- Tunnel
- Highway 101



THE LAST CHANCE GRADE PROJECT

Project Alternatives

Working with local, regional, state and federal agencies and community organizations, Caltrans has identified **a number of alternatives** to consider—from a partial realignment of the roadway to extensive construction with new tunnels and bridges.

The alternatives now being considered range from the no-build option (maintaining the status quo) to the most expensive option of a 1.3 mile tunnel that would cost over \$1 Billion. Other options would re-align the highway above or around the current location and would have various costs and impacts to this highly sensitive environment.

Identifying and analyzing each alternative takes time and requires coordination with agencies and organizations that have management and regulatory responsibilities for the lands and resources directly impacted by any route realignment.

Each alternative is described in detail on the project website: LastChanceGrade.com.

Last Chance Grade Partners

The Last Chance Grade Partners is a collaborative partnership with expertise in biological, archaeological, cultural, geological, and other areas critical to understanding the full nature of the sensitive areas that surround Last Chance Grade.

- California Department of Parks and Recreation
- Caltrans District 1
- Elk Valley Rancheria
- Green Diamond Resource Company
- National Park Service
- Resighini Rancheria
- Tolowa Dee-ni' Nation
- Yurok Tribe

Issues to Consider

As we evaluate each alternative, we must consider a number of factors:

Geology

Using technical measurements, **Caltrans engineers study the area to determine if it is feasible to build on**, and also to **assess the potential impact** of a new road on the surrounding environment.

Ecology

The Del Norte Coast is a unique ecosystem—**home to old-growth redwoods and threatened animal species**. Caltrans works closely with the National Park Service, California State Parks and others to ensure that any alternative respects the significant ecological resources of the region.

Culture

Designated a United Nations Educational, Scientific and Cultural Organization World Heritage Site, the region has important cultural significance. Native American tribes consider many areas fundamental to their tradition and history. Caltrans has engaged local tribes as key stakeholders and partners throughout the process.

Economy

Caltrans conducts a detailed financial analysis of each alternative to **determine the costs and possible economic impacts**. These detailed estimates help identify potential funding sources so that a long-term fix for Last Chance Grade can get built.



Get Involved!

Caltrans encourages community members to learn about the project alternatives and get involved. This summer, we invite you to a **Community Open House** to provide you with updated information about Last Chance Grade.

Community Open House

July 19th, 2018

6:30–8:00 PM

**Del Norte County Fairgrounds
Main Exhibit Building**

421 Highway 101 North

Crescent City, California

Or Contact

Jaime Matteoli,

Last Chance Grade Project Manager
lastchancegrade@dot.ca.gov
(707) 441-2097, TTY 711

For more information, visit
LastChanceGrade.com

APPENDIX B: OPEN HOUSE MEETING MATERIALS

I. Handouts

Last Chance Grade COMMUNITY OPEN HOUSE

Thursday, July 19, 2018
6:30-8:00 p.m.
Del Norte County Fairgrounds
421 Highway 101 North
Crescent City, CA

A G E N D A

Welcome and Introductions

Senator Mike McGuire
Matt Brady, Director, Caltrans District 1

Presentation and Panel

- Scott Anderson, BGC Engineering
- Victor Bjelajac, California State Parks
- Matt Brady, Caltrans District 1
- Larry Depee, California Highway Patrol
- John Driscoll, Office of Congressman Jared Huffman
- Gerry Hemmingson, Del Norte Board of Supervisors
- Jaime Matteoli, Caltrans District 1
- Jason Meyer, Caltrans District 1
- Steven Mietz, Redwood National and State Parks
- Matt Schmitz, Federal Highway Administration

Questions and Answers

Open House

Last Chance Grade

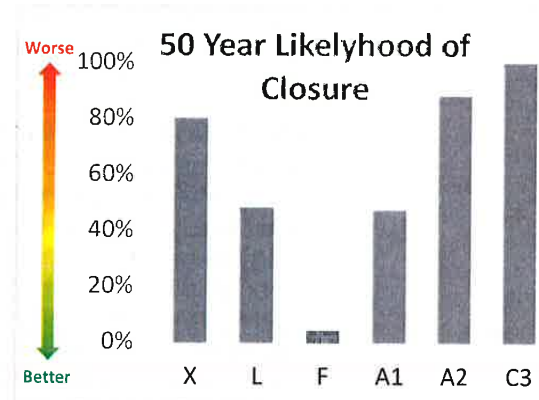
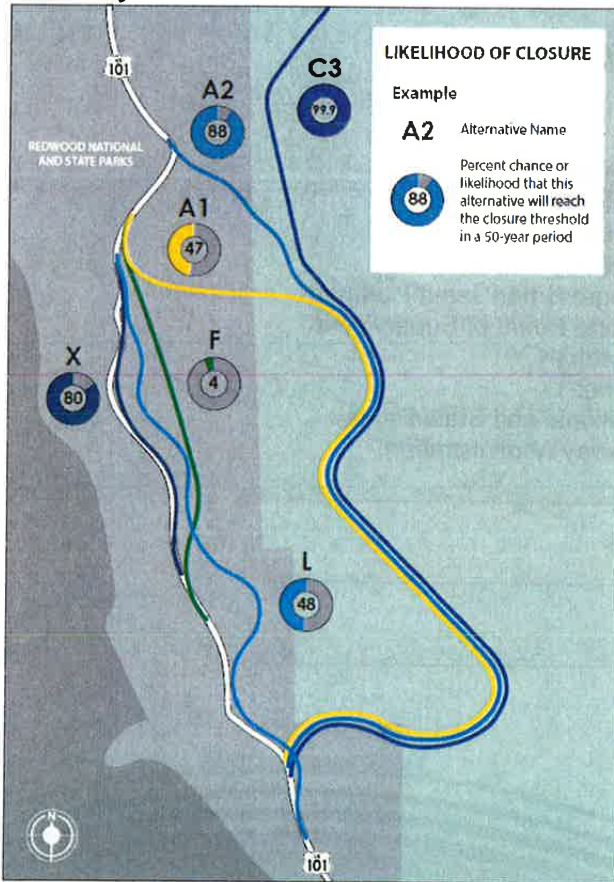


Expert-Based Risk Assessment Fact Sheet

Key Points:

- The work was done by an independent panel of geotechnical experts with a combined 180 years of experience with landslides.
- The Risk Assessment focusses only on geotechnical issues. It is one of many tools that Caltrans and the partners will use to narrow down the set of alternatives that will be fully studied in the environmental phase.
- The Risk Assessment generated two new project alternatives:
 - Alternative X, On Alignment Improvements
 - Alternative L, Upslope Alternative

Summary of Results:



Alternative F has the lowest risk of reaching the closure threshold* at some point within a 50-year time-period. Alternative F is the highest cost alternative and the expert panel also agreed that alternative F has the highest risk of major construction cost increases. Alternatives L and A1 have a medium risk of closure. Alternatives X, A2, and C3 have a high risk of closure, with C3 having the highest risk.

* For the highway to reach the closure threshold, any one of the three following conditions could be true:

1. It would be impractical to keep the highway open using emergency or maintenance programs because the costs are too high.
2. There could be closures that last more than a few weeks.
3. Bridges, walls, or tunnels could be distressed and not safe for traffic.

COMMENT FORM

Please share your comments regarding Last Chance Grade.

Optional:

Name: _____ Affiliation: _____

Contact Info: (Mailing address or email):

Thank you for your participation! Please turn this form in at the end of the meeting. You may also return it by mail or email. Please mail to: Caltrans District 1, c/o Jaime Matteoli, 1656 Union Street, Eureka, CA 95501, or email to: lastchancegrade@dot.ca.gov.

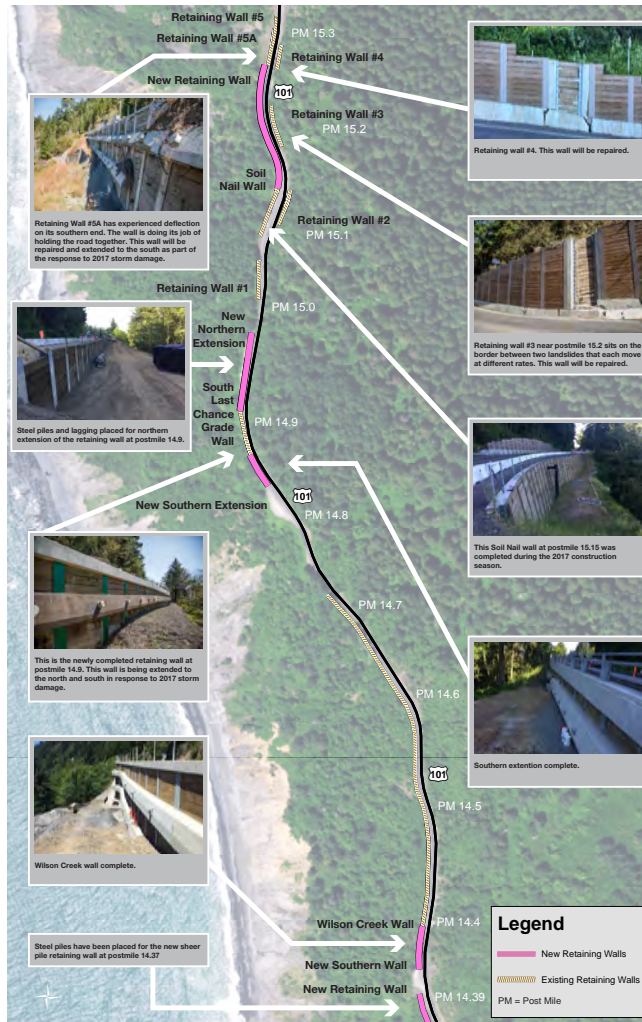
Last Chance Grade



II. Displays

STORM DAMAGE AND REPAIRS

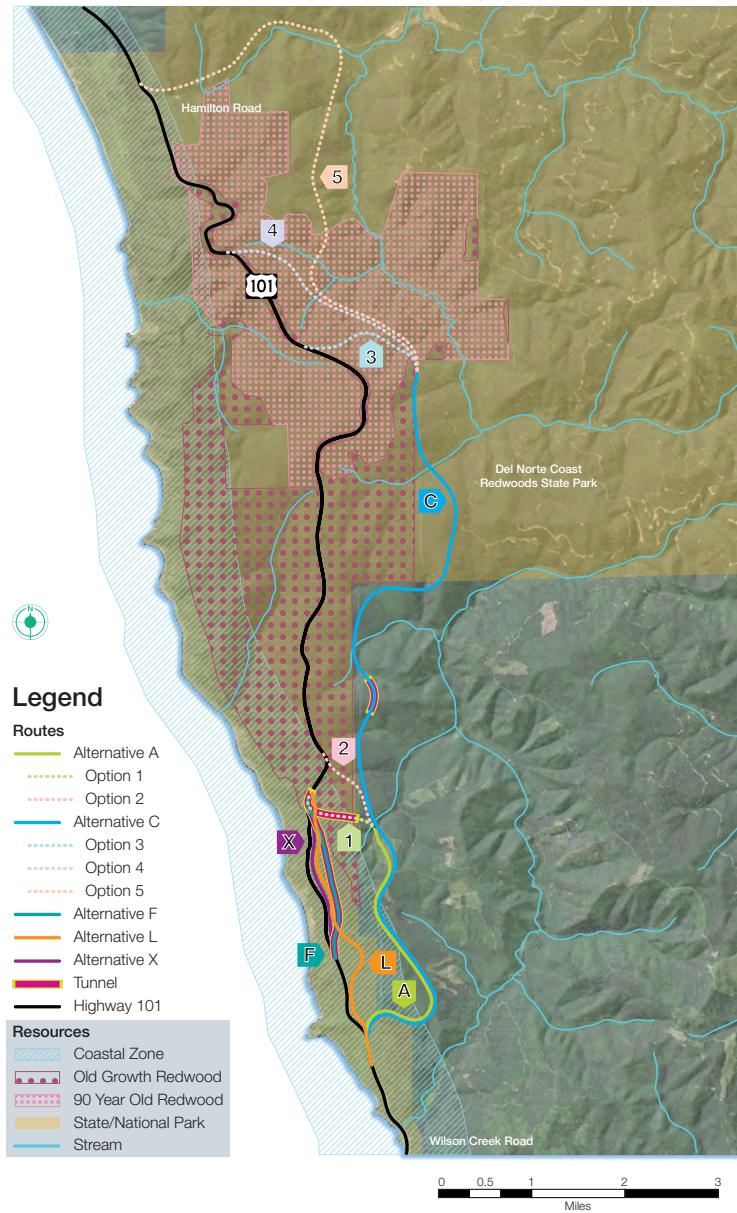
Caltrans continues to maintain and repair the highway at Last Chance Grade. Heavy rains from March 2016 and the winter of 2016/2017 resulted in storm damage including cracks and settlement of the roadway, deformation of retaining walls, and temporary loss of the roadway at a localized landslide at postmile 14.4. In April 2017, the Federal Highway Administration approved funding of \$27.6M in construction dollars to repair this recent storm damage. The scope of this work includes repairs to three retaining walls and construction of five new retaining walls. Construction crews will continue paving and grinding to smooth out the ride.



Last Chance Grade



PROJECT ALTERNATIVES



Alternatives:
X, L, F, A1, A2, C3, C4, C5

Last Chance Grade



GEOTECHNICAL STUDIES

In May of 2017, Caltrans received approval to fund \$5 Million to perform preliminary geotechnical investigations. This effort will provide information on the subsurface conditions under the proposed alternatives. The results of the geotechnical studies will be used to validate or refine the project alternatives.

Types of Studies Anticipated for Last Chance Grade

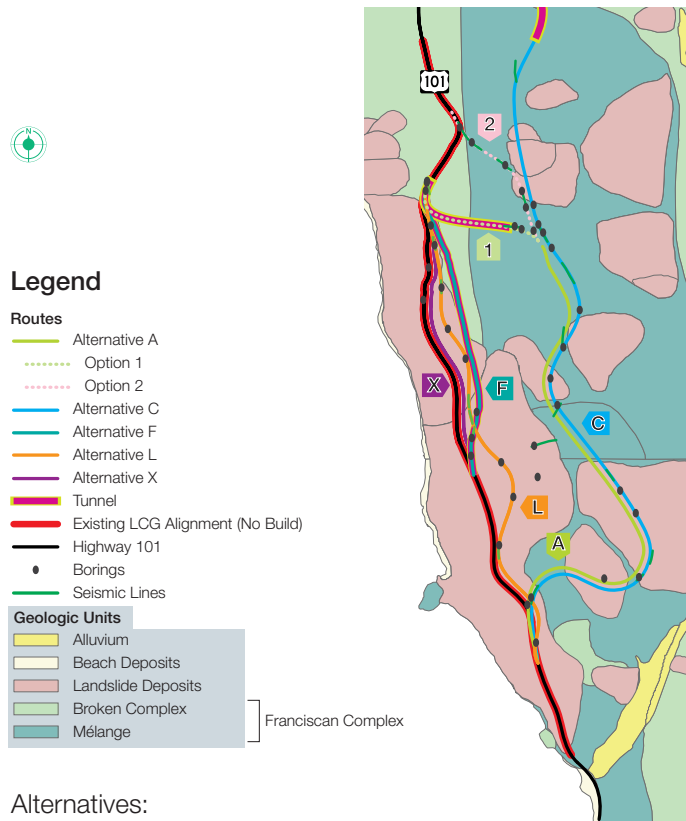


Borings

Borings are made to collect physical samples of the subsurface materials. These borings above were collected from locations on Last Chance Grade.

Geophysical Explorations

Geophysical explorations are an indirect method of gaining information on the subsurface conditions using special instruments.

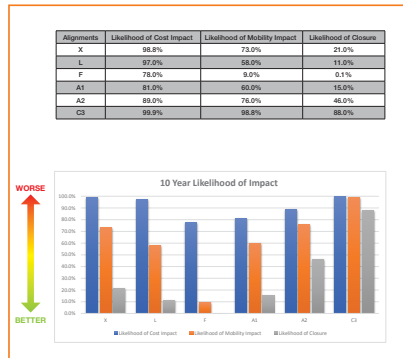


Last Chance Grade

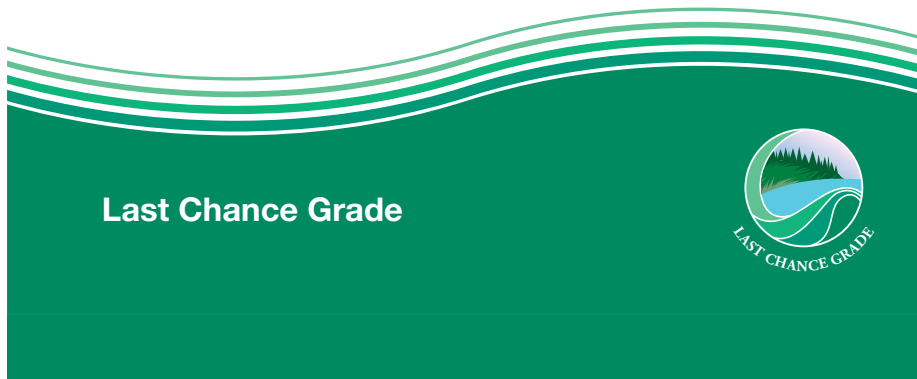
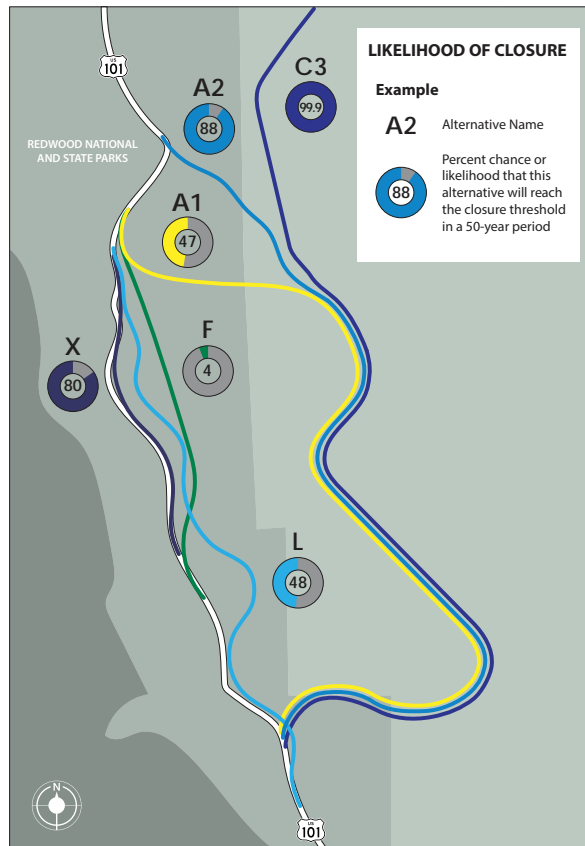
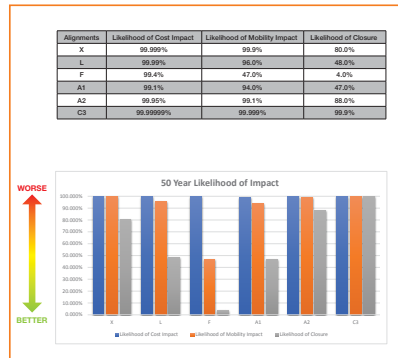


RISK ASSESSMENT

10 YEAR



50 YEAR



III. Presentations

A. Presentation by Caltrans District 1

LAST CHANCE GRADE



Community Open House
7/19/18



Last Chance Grade Presenters and Panel Members



State Senator
Mike McGuire



JARED HUFFMAN
US CONGRESSMAN
Serving California's 2nd District



Agenda

- Presentation
 - Project Update
 - Risk Assessment Update
- Question and Answer Period with Panel
- Open House and Additional Q&A

LAST CHANCE GRADE



Outline

- Recent History
 - Process Overview
- Current Activities
 - Preliminary Geotechnical Studies
 - **Expert-based Risk Assessment**
- Next Steps
 - **Beginning Environmental**

LAST CHANCE GRADE





Two Paths to Safe, Smart, & Sustainable Solutions

Keep Road Open & Safe

- Monitor
- Maintain
- Repair - \$35M

Long-Term Solution

- \$10M Long Lead Project
 - Risk Assessment
 - Prelim Geotech
 - Environmental



Storm Damage Repairs

- 2016 and 2017 Storm Damage
- \$35M approved total (\$27M in construction costs)

LAST CHANCE GRADE



Wilson Creek Wall



PM 15.0 Wall Southern Extension



PM 15.0 Wall Northern Extension



PM 15.2 Soil Nail Wall



**Pre 2016
Storm**



**Post 2017
movement**



Monitoring and Safety Measures

- Monitoring
 - “Boots on the Ground”
 - Near Real Time Monitoring System
 - Aerial Photography
 - Ground Surveys
- Safety
 - Public Information
 - Barriers and Rail
 - Paving and Grinding

LAST CHANCE GRADE

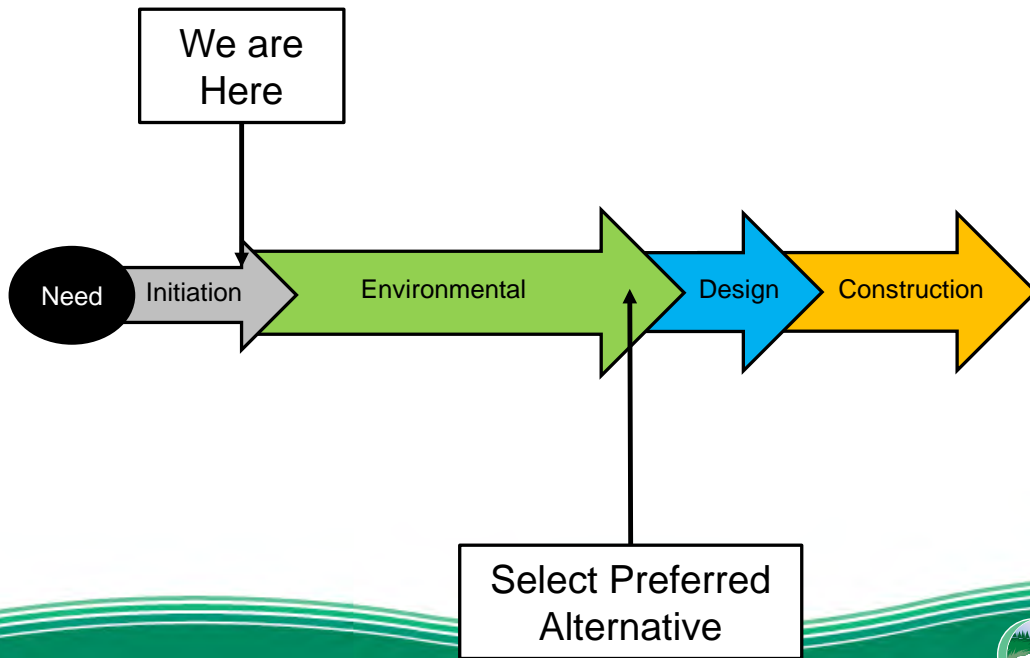


Project Need

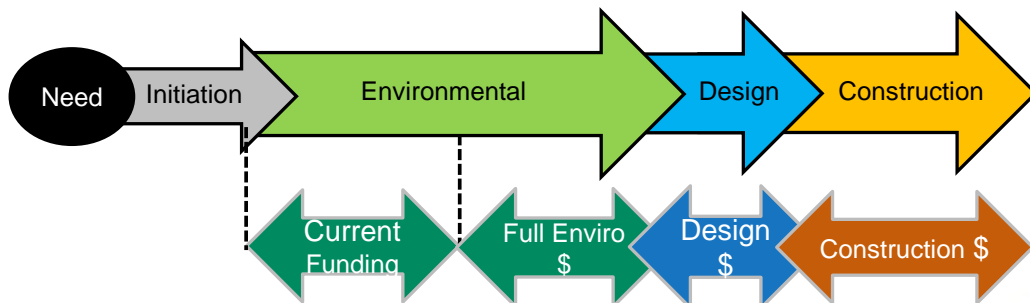
- ~\$85M in Repair Costs (Capital) since 1997
- 320 mi Detour 6 hours extra
- 1-Yr Closure Costs \$1.5B



Project Phases



Funding by Phase



Coordination and Partnerships

- Huffman Stakeholder Group
- LCG Partner Group
- Biological Working Group
 - 13 Resource Agencies
- Cultural Resources Working Group
- Elected Officials (Fed, State, and Local)
 - McGuire, Wood, Huffman, DeFazio, DN BOS, Crescent City Council, and Others

LAST CHANCE GRADE

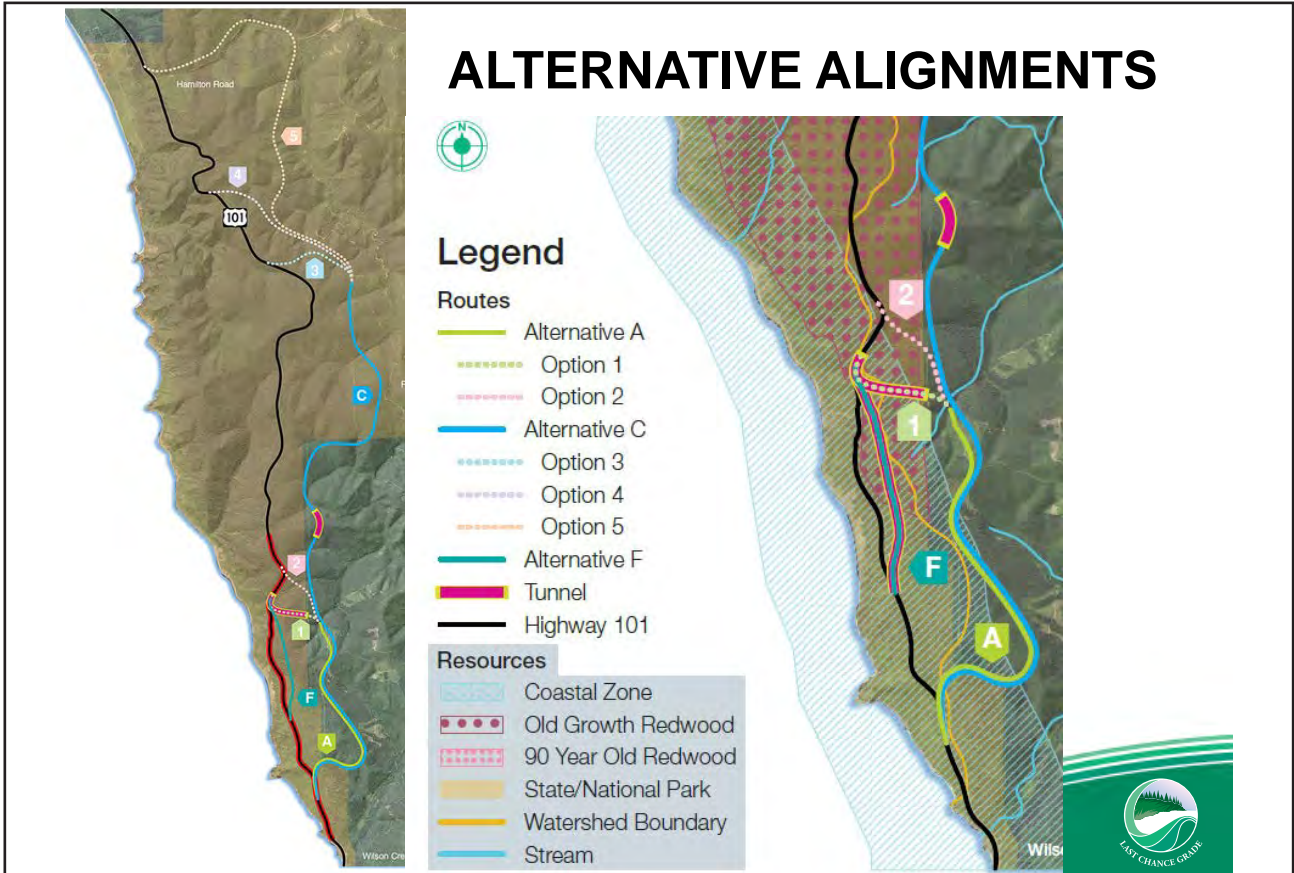
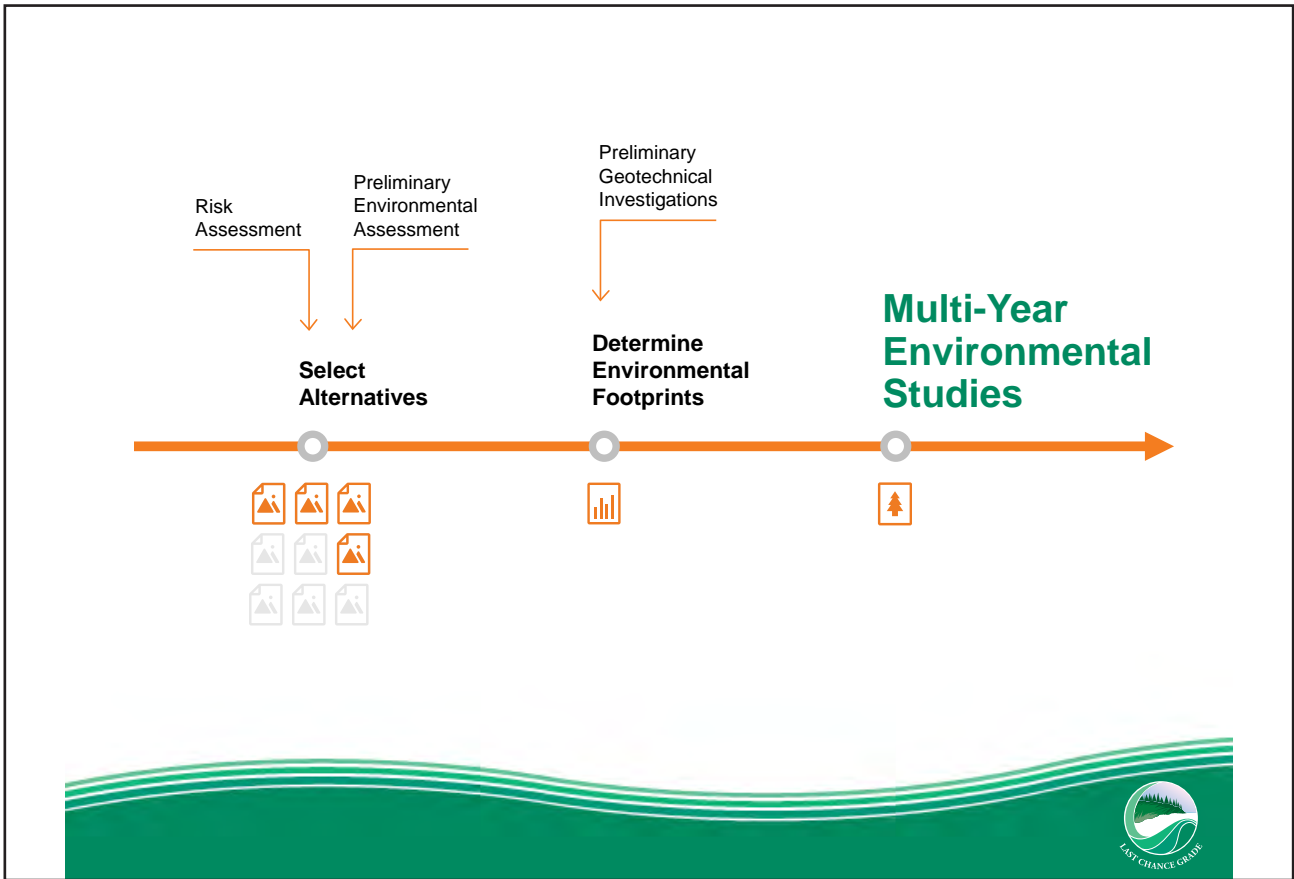


Funding and Project Development

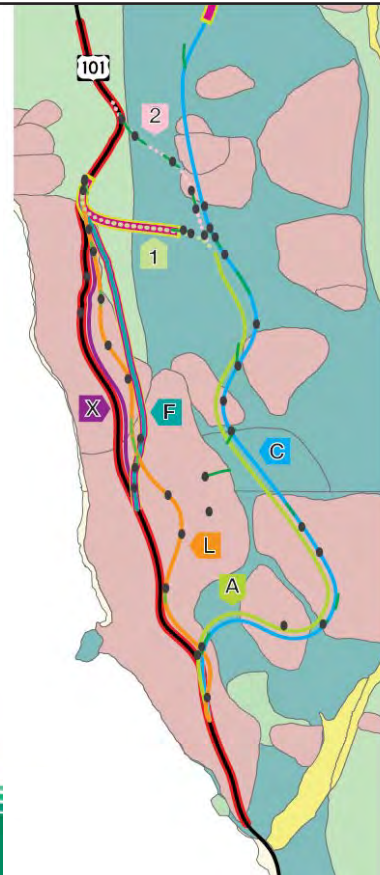
- 2015 Feasibility Study
- 2016 Project Study Report
 - 6 Build Alternatives
- 2017 \$5M for Preliminary Geotechnical Studies
- 2018 \$5M for Environmental Studies

LAST CHANCE GRADE





Preliminary Geotechnical Investigations



LAST CHANCE GRADE



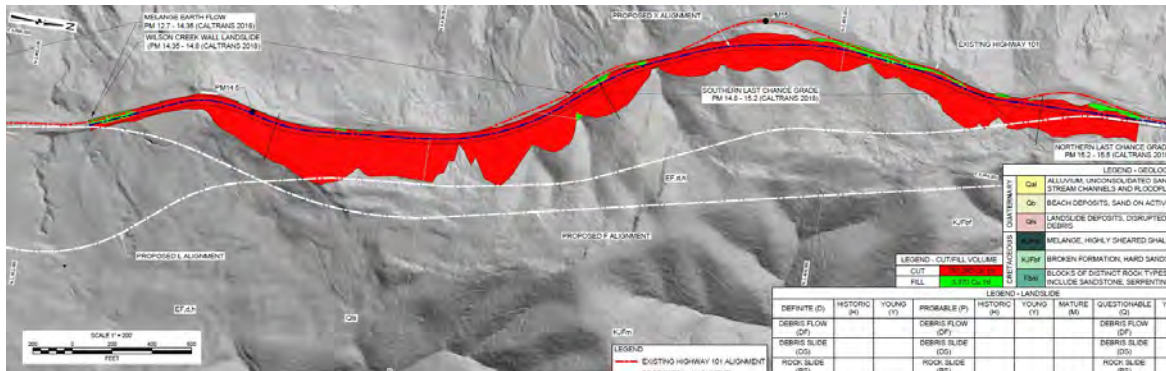
Expert Based Risk Assessment

- A Tool that Helps Narrow List of Alternatives
- Independent Panel of Geotechnical Experts
- Generated Two New Alternatives
 - Alternative X
 - Alternative L

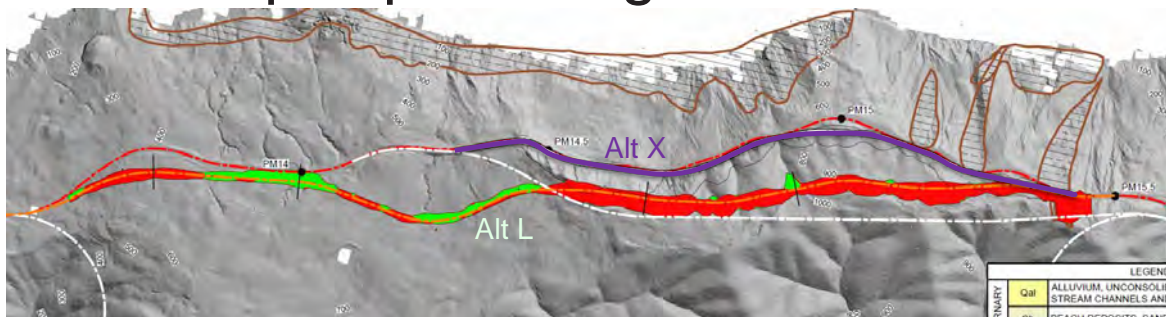
LAST CHANCE GRADE



Alt X – On Alignment Improvements



Alt L – Upslope Realignment



Next Steps

- Summer/Fall 2018 – Collaborative Scoping to Select Alternatives Using:
 - Risk Assessment
 - Preliminary Geotechnical Investigations
 - Value Analysis
- Early 2019 - Initiate Multi-Year Studies
 - Smaller List of **Reasonable** Alternatives
- Spring 2019 - Community Open House

FOR MORE INFORMATION

Website

lastchancegrade.com

Contact:

Jaime Matteoli, Project Manager

jaime.matteoli@dot.ca.gov

707-441-2097

LAST CHANCE GRADE



B. Presentation by BGC Engineering

Expert-based Risk Assessment

U.S. Highway 101
Last Chance Grade
Del Norte County, CA

bgcengineering.com

MAP OF ALTERNATIVES
A1, A2, C3, C4, C5, F

Legend

- Alternative A
- Alternative C
- Alternative F
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Tunnel
- Existing LCG Alignment (No Build)
- Highway 101
- State/National Park

ENVIRONMENTAL RESOURCES

Legend

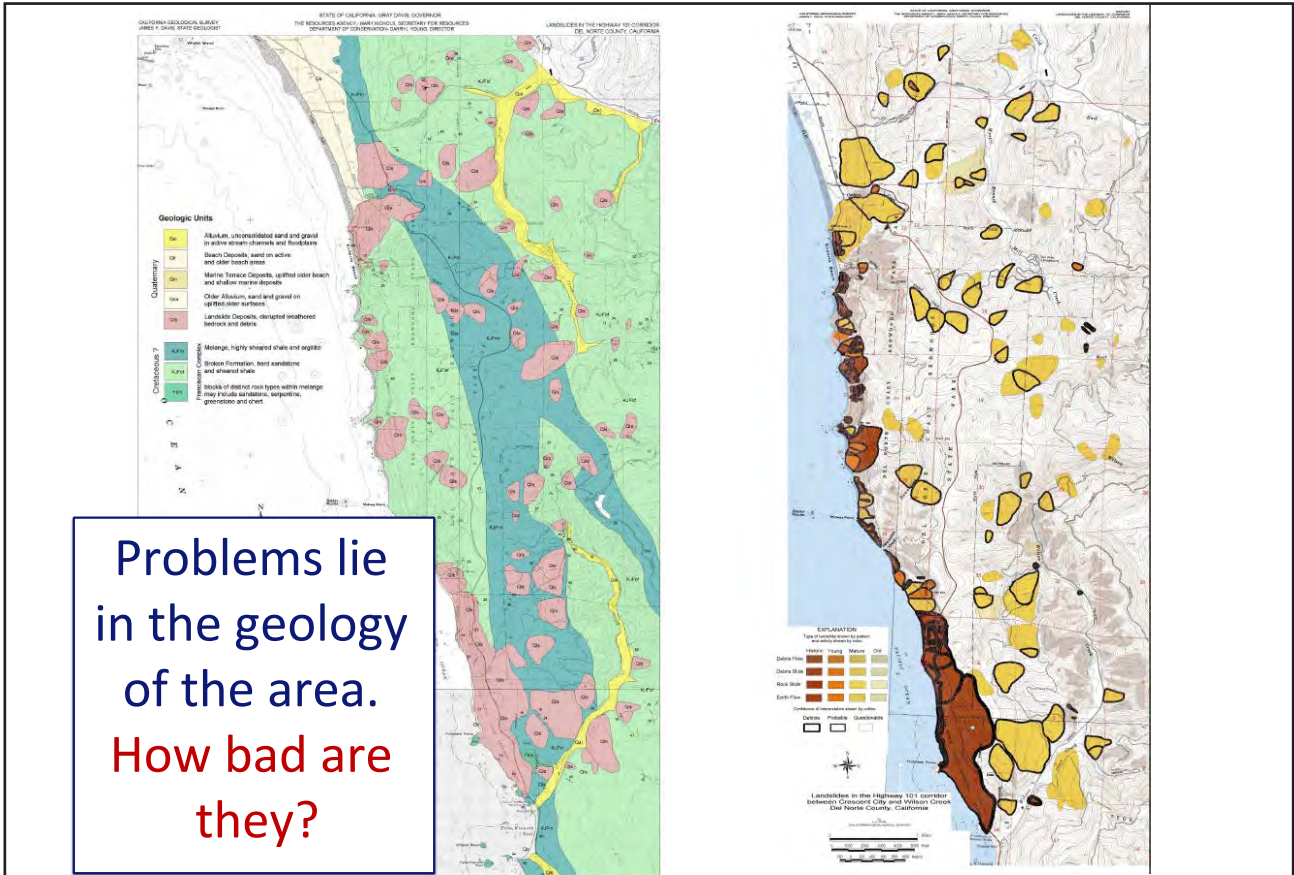
- Routes
 - Alternative A
 - Alternative C
 - Alternative F
- Segment 1
- Segment 2
- Segment 3
- Segment 4
- Segment 5
- Highway 101

Resources

- Coastal Zone
- Old Growth Redwood
- 90 Year Old Redwood
- State/National Park
- Watershed
- Stream

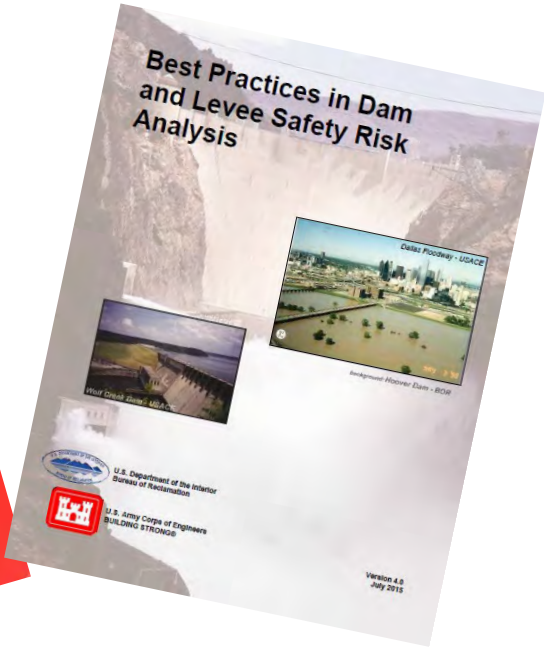
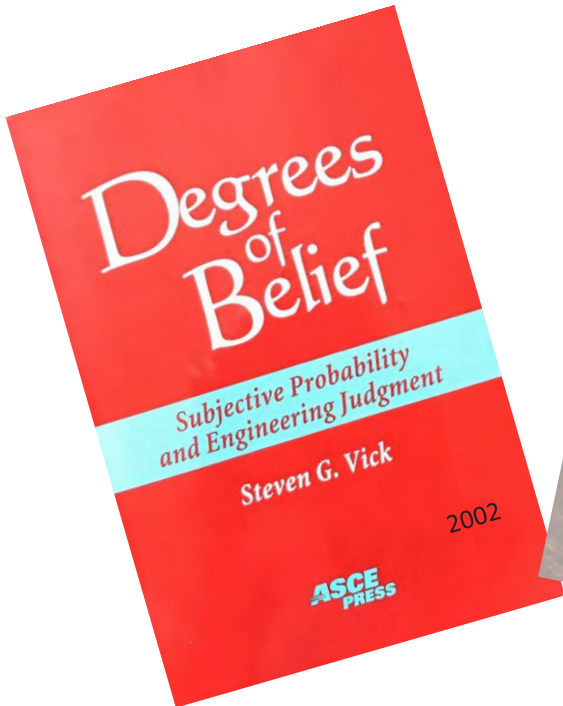
Preliminary Alternatives:
A1, A2, C3, C4, C5, F

Alternative	Segment 1	Segment 2	Segment 3	Segment 4	Segment 5	Highway 101	Other
A1	Yes	Yes	Yes	Yes	Yes	Yes	Yes
A2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C3	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C4	Yes	Yes	Yes	Yes	Yes	Yes	Yes
C5	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F	Yes	Yes	Yes	Yes	Yes	Yes	Yes



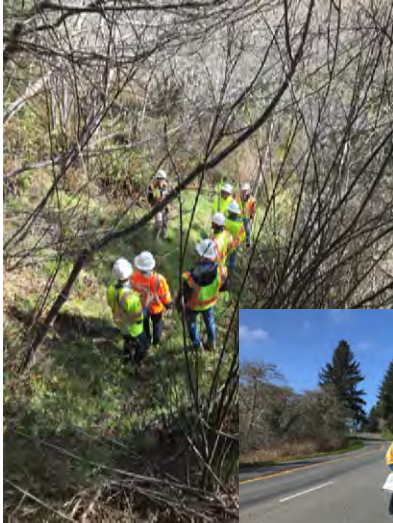
Problems lie in the geology of the area. How bad are they?

Quantifying Judgment



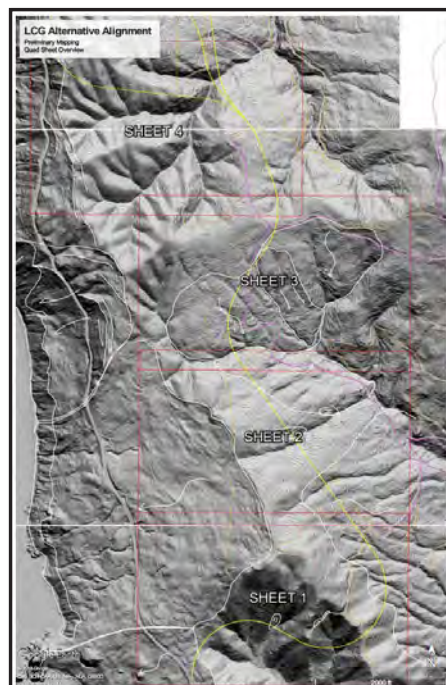
Transfer Project Understanding

- In the field

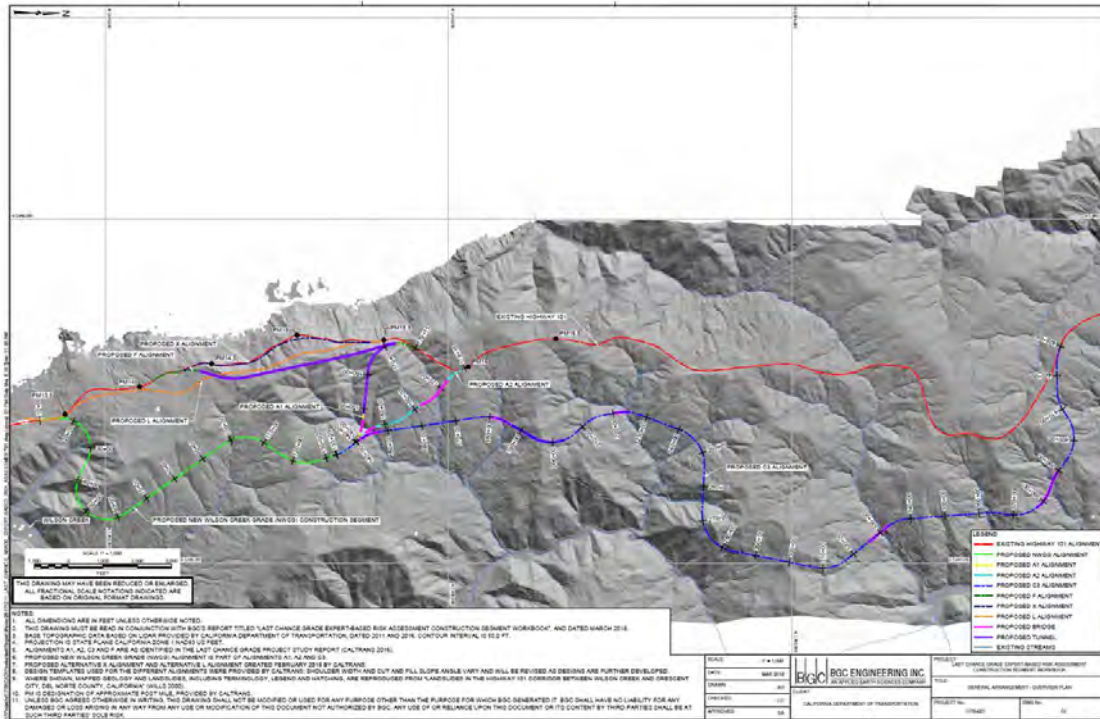


Transfer Project Understanding

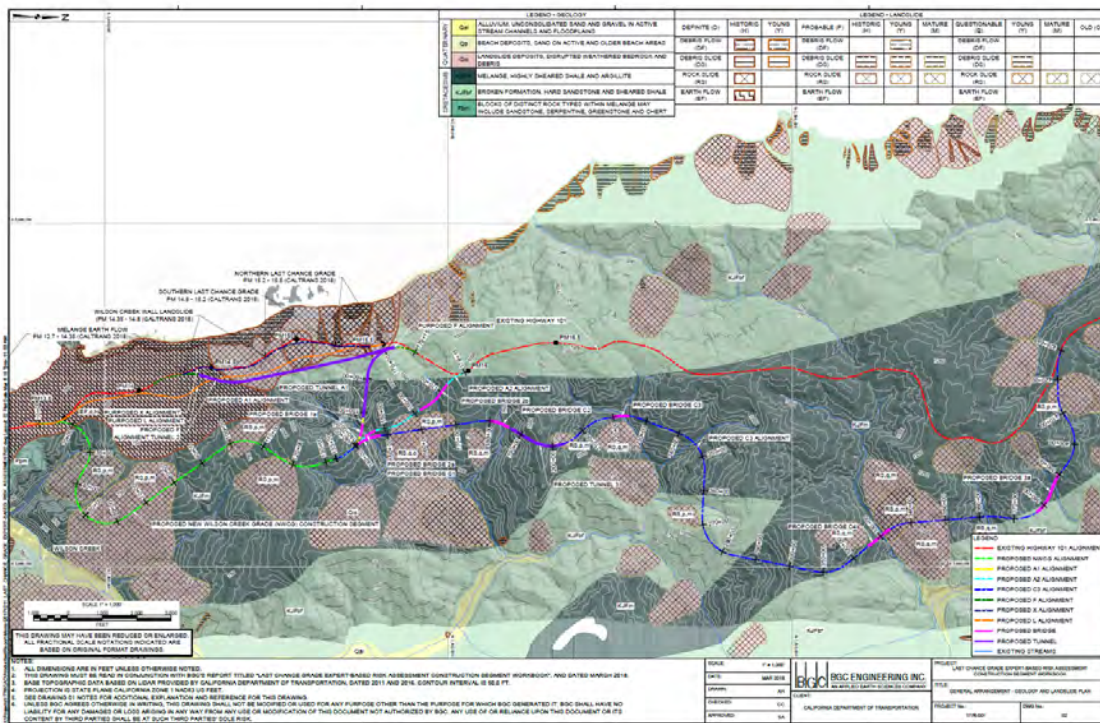
- At the desk
 - Caltrans' experience
 - Published reports and materials
 - Geologic and landslide studies



Lidar Hillshade of Alternatives



Geology and Landslides

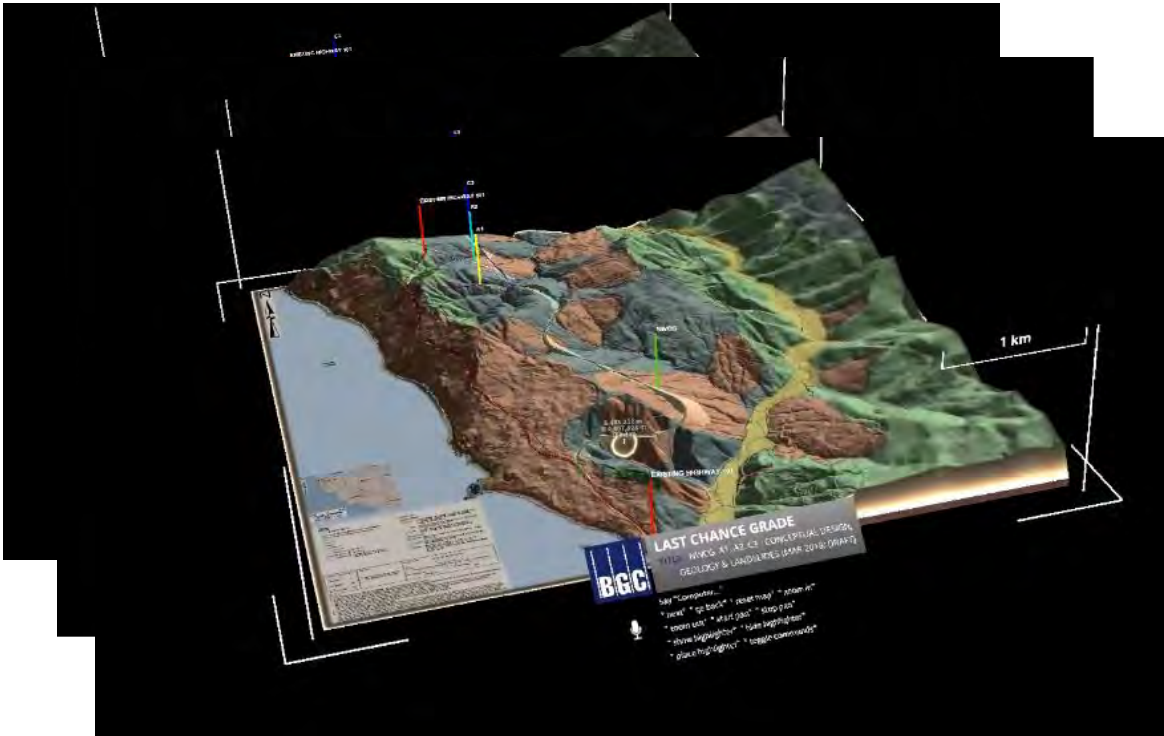


HoloLens Model



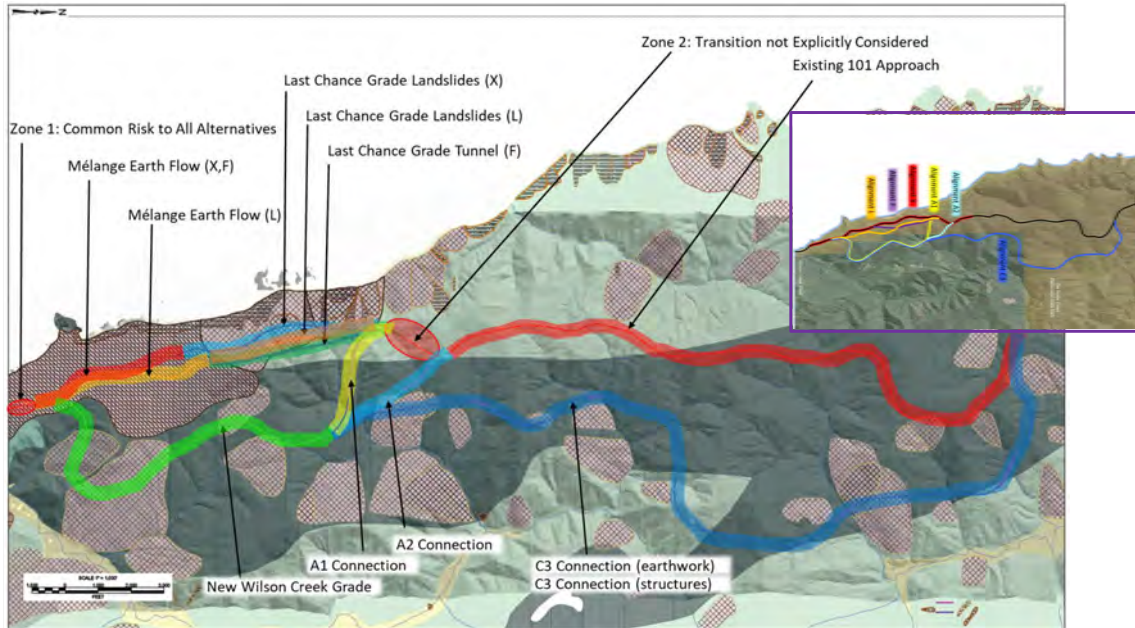
Mixed Reality partnership with Microsoft

HoloLens Model



The panel gets to work:

- One Construction Segment at a time
- Precise Definitions
- Rules of Probability



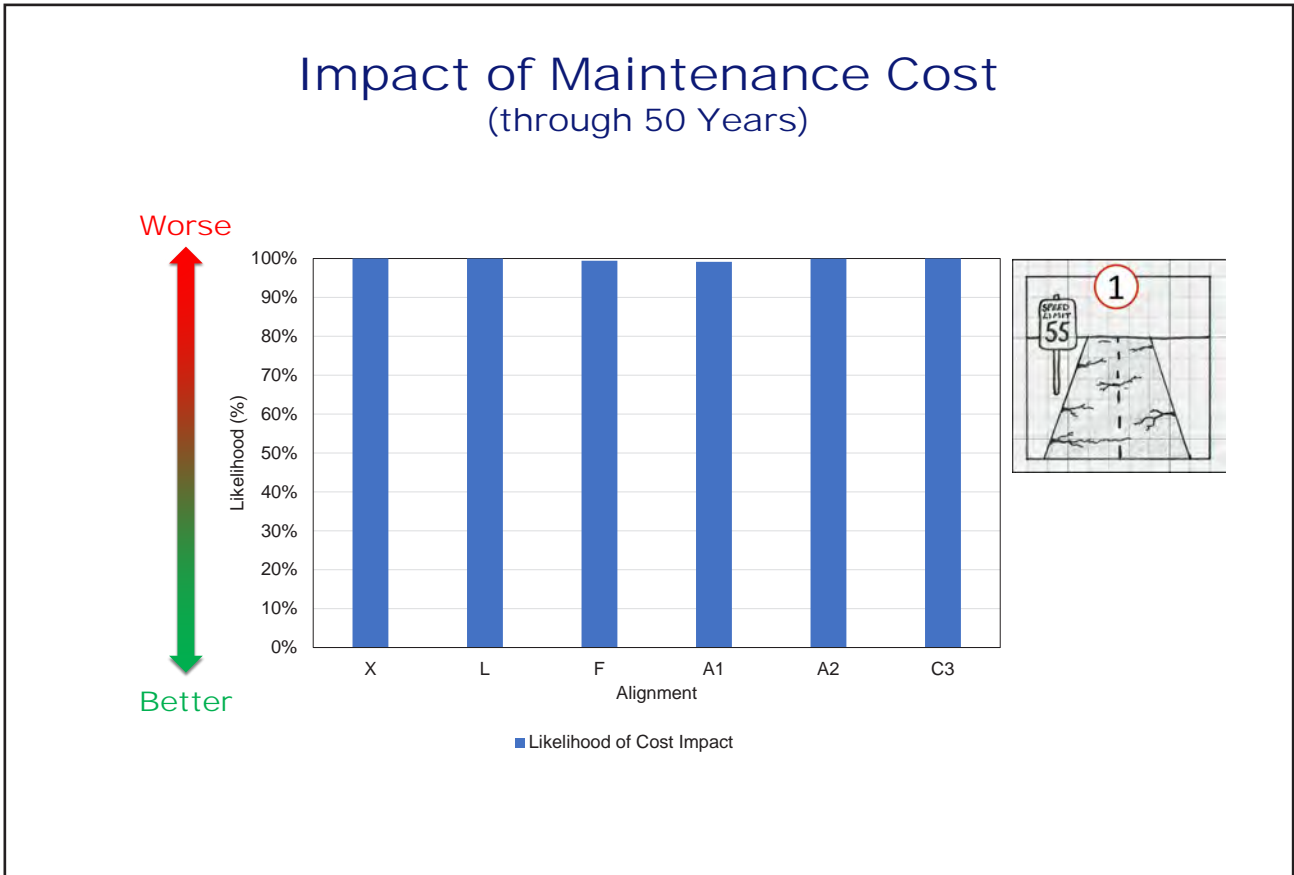
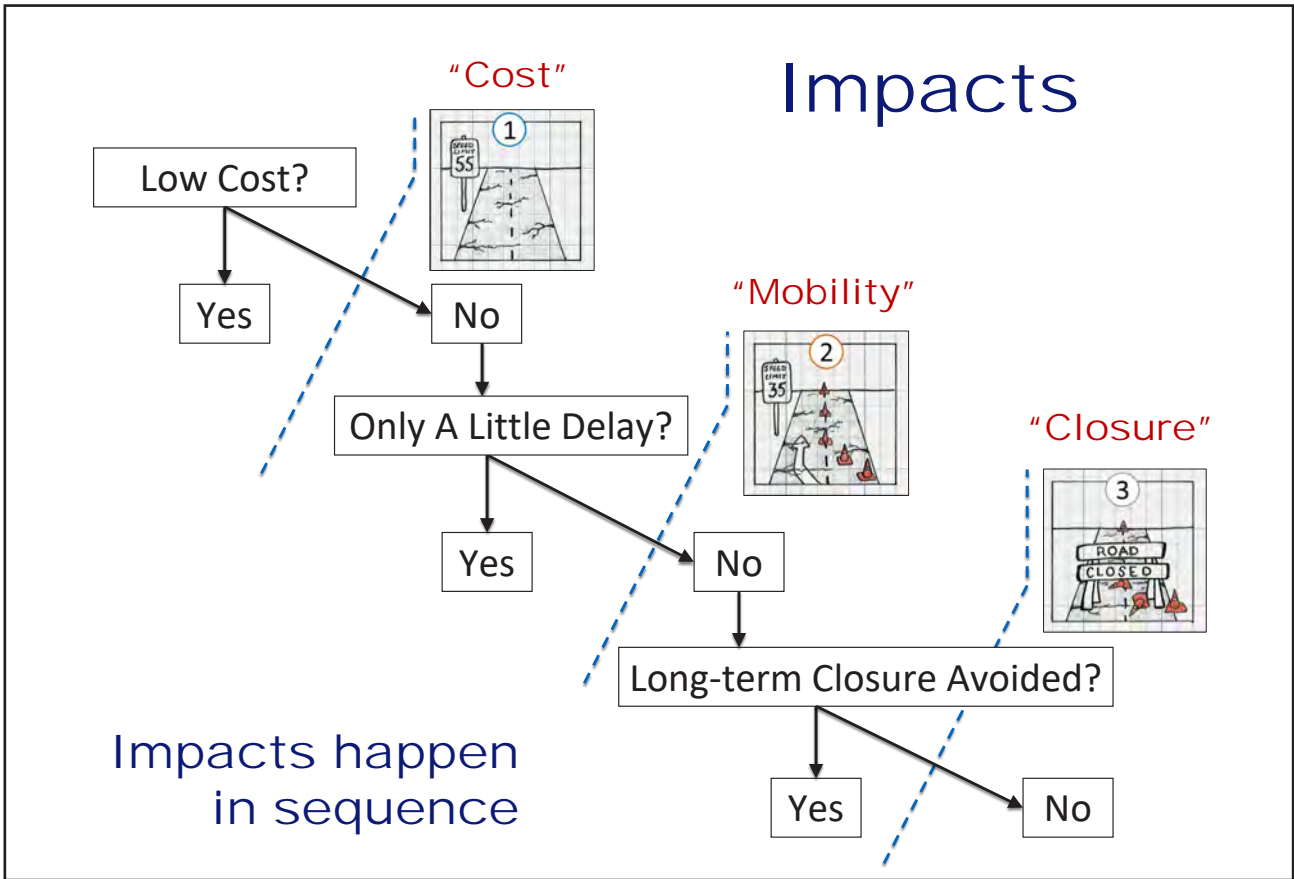
Sometime after construction, what is the chance of:

- ... having high maintenance cost?
- ... unusual repairs that cause delays?
- ... requiring long-term closure or abandonment?

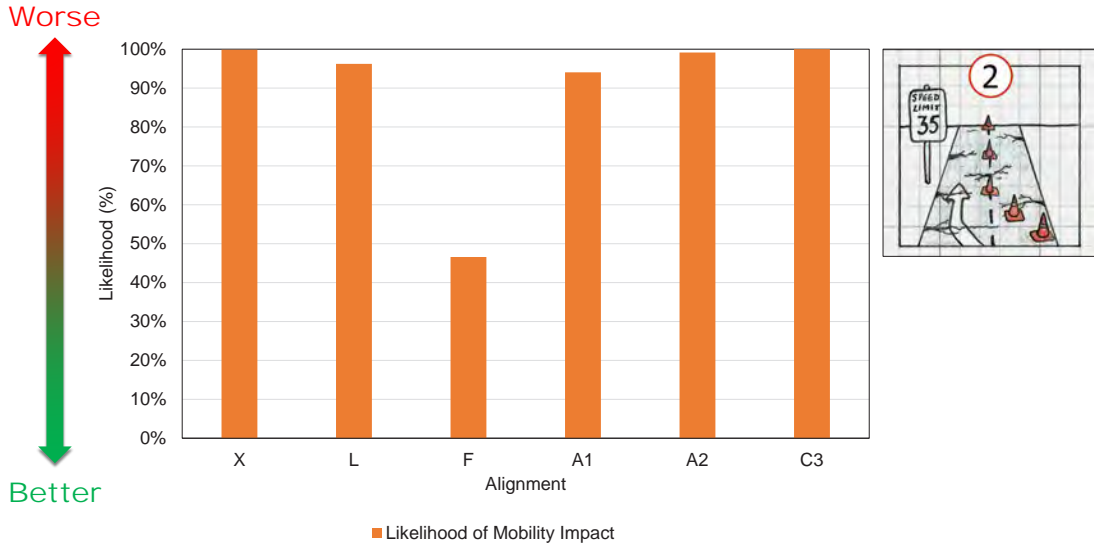
Two Times *and* Three Impacts
10 & 50 years *and* "Cost", "Mobility", "Closure"

Six Alternatives
Alignments X, L, F, A1, A2, C3 (as viewed from the south)

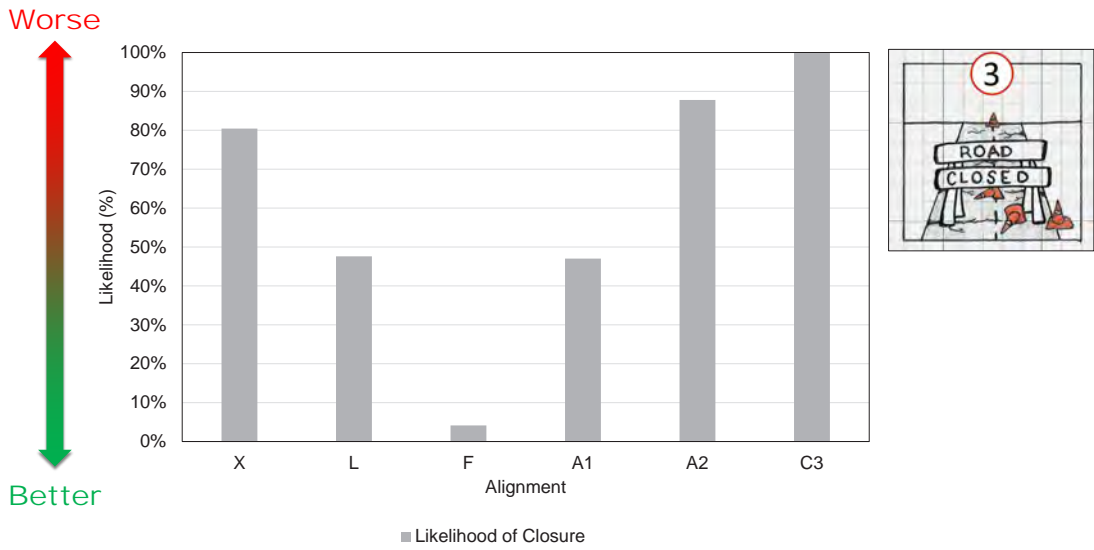
Partial results shown here



Impact of Repair Delays (through 50 Years)

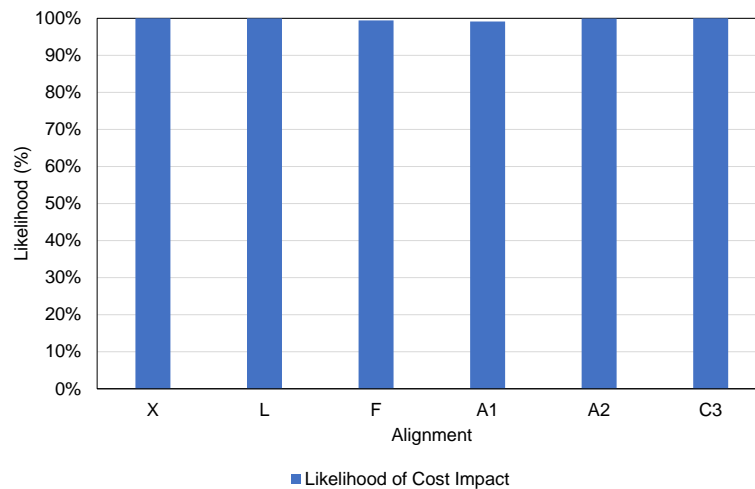


Risk of Closure (through 50 Years)



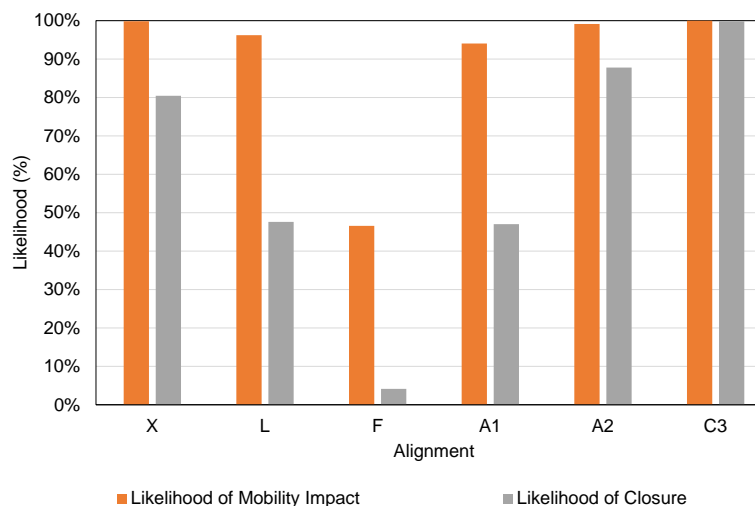
Summary of Observations

- All Alternatives are expected to be high cost:



Summary of Observations

- Likelihood of delays and closure vary:



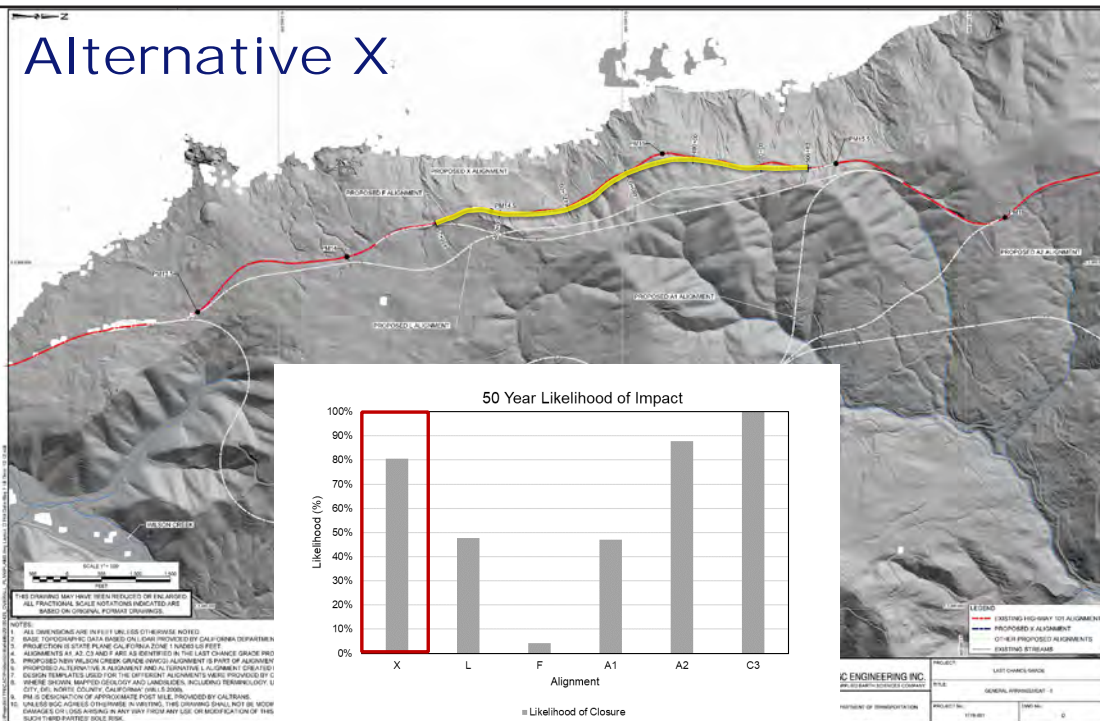
Summary of Observations

Closure in 50 years

3 general categories: **High**, **Medium** and **Low**

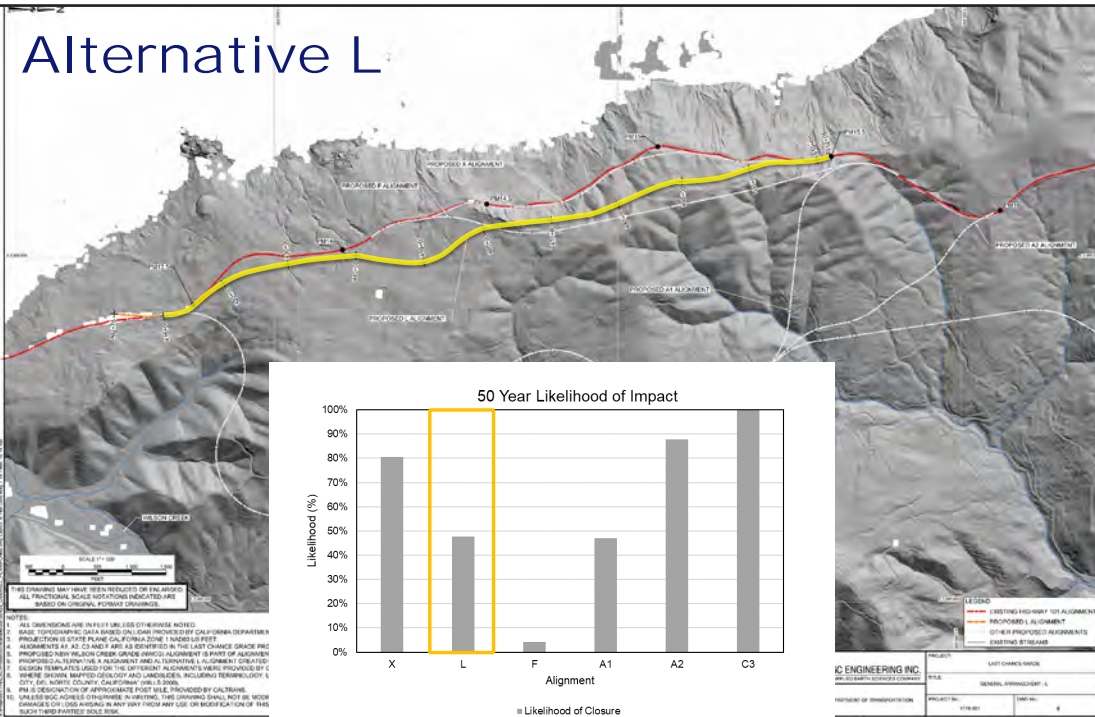
Review Alternatives in [map view](#)

Alternative X



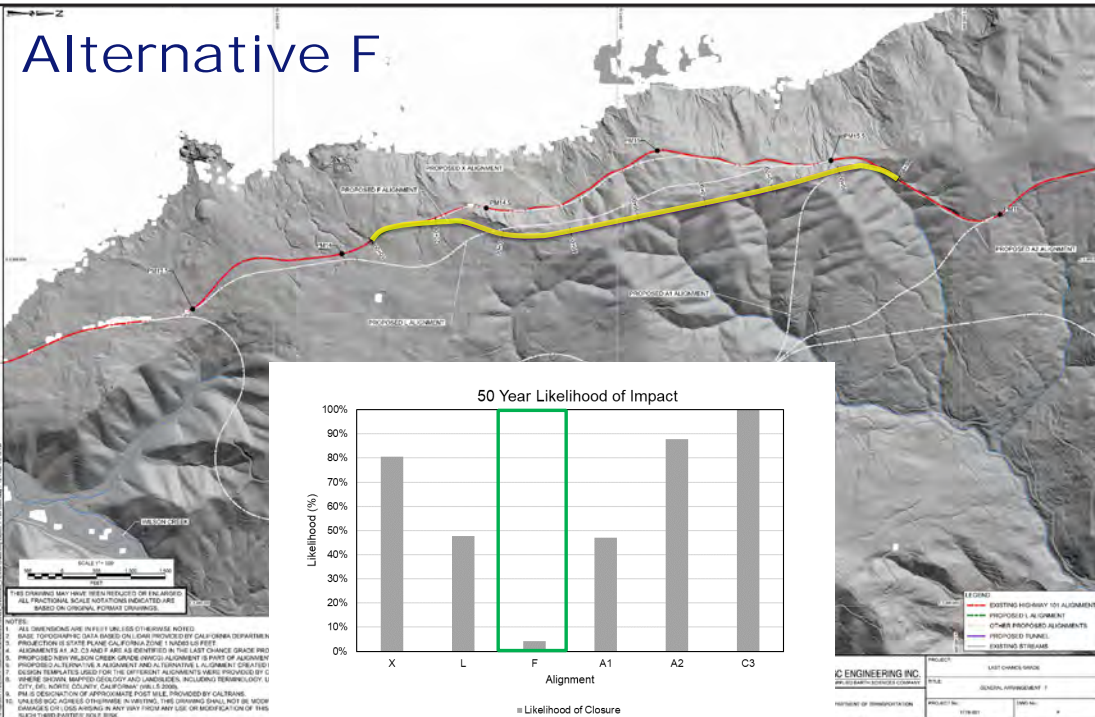
HIGH RISK

Alternative L



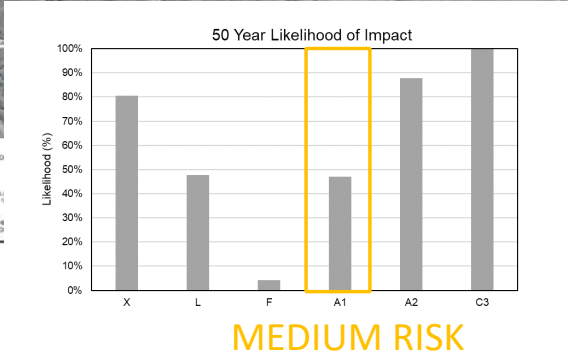
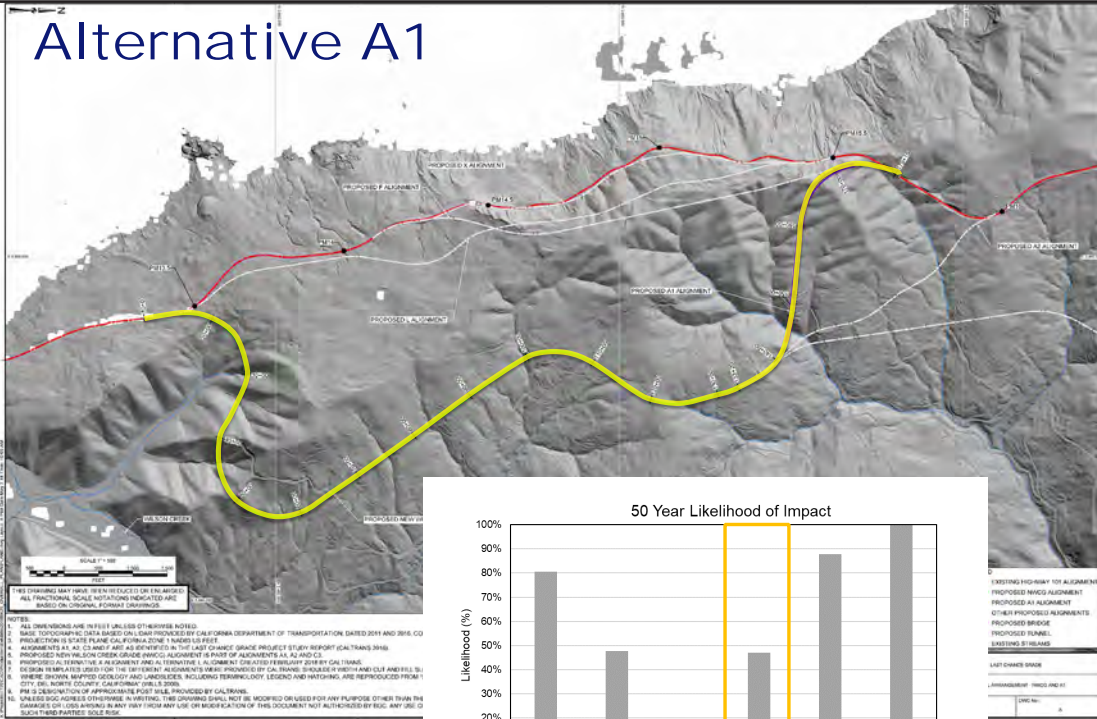
MEDIUM RISK

Alternative F

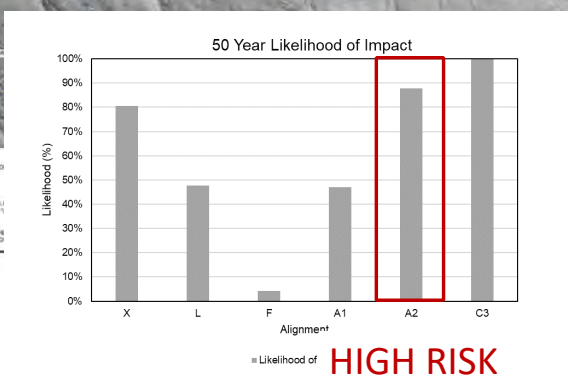
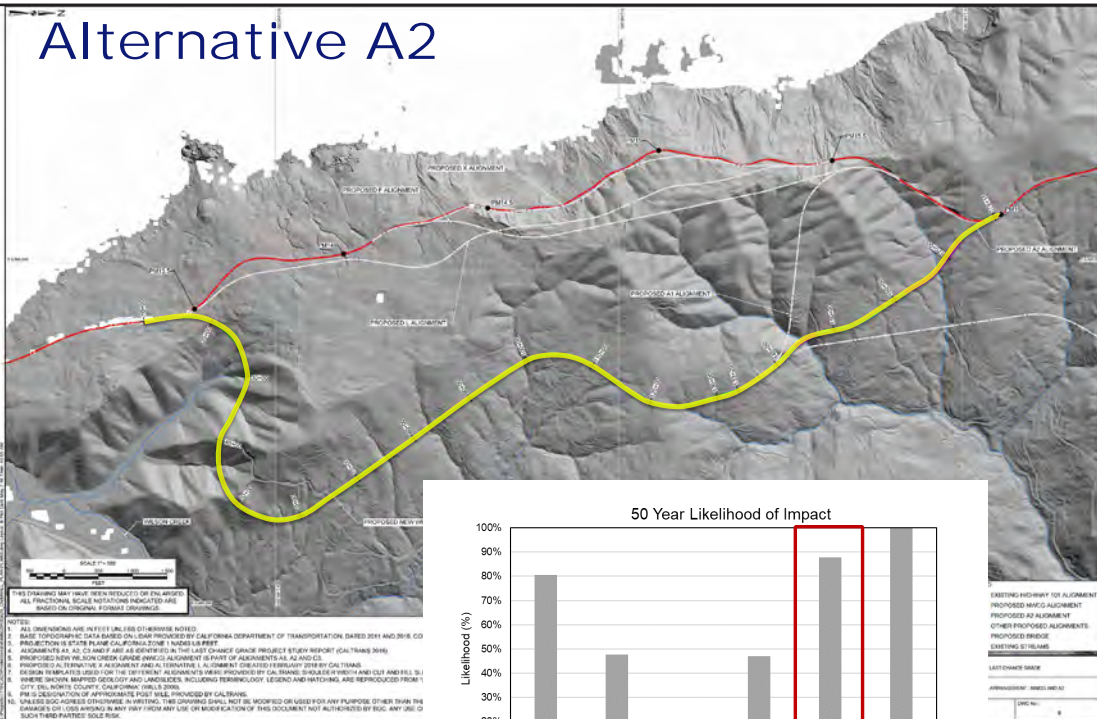


LOW RISK

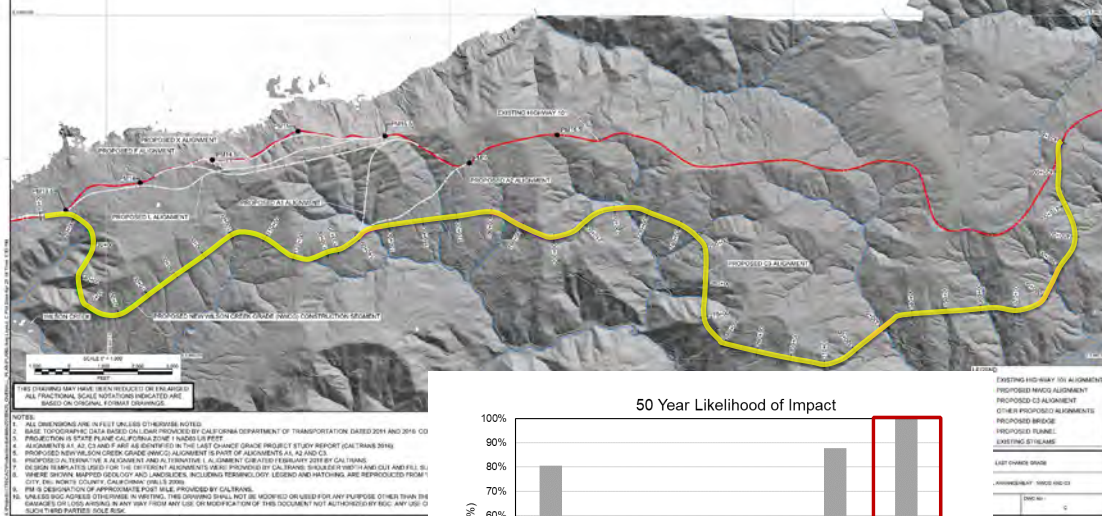
Alternative A1



Alternative A2



Alternative C3



Conclusions

- All Alternatives are expected to have high maintenance cost
- Risks of delay and closure vary
- Alternative C is judged highest risk
- Alternative F is judged lowest risk
- Risks are for long-term ownership
- More information can lead to better judgment of risks

bgcengineering.com



APPENDIX C: OPEN HOUSE RESULTS

I. Comment Cards

COMMENT CARDS

Extremely thoughtful explanation of why it's expensive, why it takes times, why careful advance study is vital to an efficient project. Really enjoyed it.

Suggestion: when the VR is further detailed – it could easily be used as an info tool on Channel 3. You've probably thought of that. Part of this is to get this area together on this. Info helps.

We must have the best alternative that is the least environmentally impactful. Cost to produce the safest and least damaging alternative can be measured in many ways – cost to build, cost to maintain, cost to old growth trees. If we are committed to the pivot to passive recreation from extractive models that destroy the pristine forest and free-flowing rivers (that are a major reason tourists come here) the priority is preserving trees and old trees in particular. If our economy is based on reliability and lowest impact, the tunnel is the best alternative (F). As Senator McGuire pointed out, \$1 billion spent through Caltrans created 14,000 full-time jobs. Please keep the tunnel alternative for study. There may be a better way but we have yet to see and understand it.

P.S. Suggest making 101 and State Scenic Highway and then a National Scenic Highway.