LAST CHANCE GRADE

COMMUNITY TOWN HALL

Eureka: 03/22/16

Crescent City: 03/23/16

Klamath: 03/24/16

Sebastian Cohen

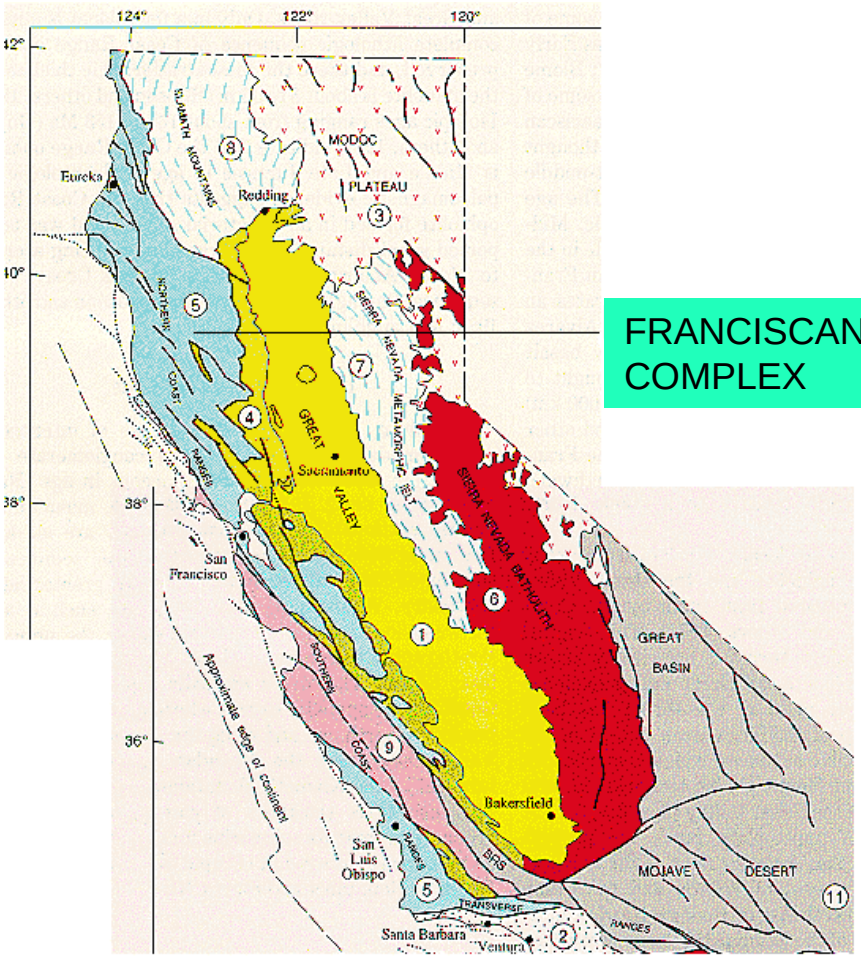
Caltrans-Project Manager

Presentation Overview

- Geology
- History
- Site Status
  - What's Occurring
- Status of Permanent Repair Project (Realignment)
  - Alternatives, Cultural & Environmental Resources
  - Challenges
  - Emergency Project / Emergency Response / Emergency Funding
  - Stakeholders

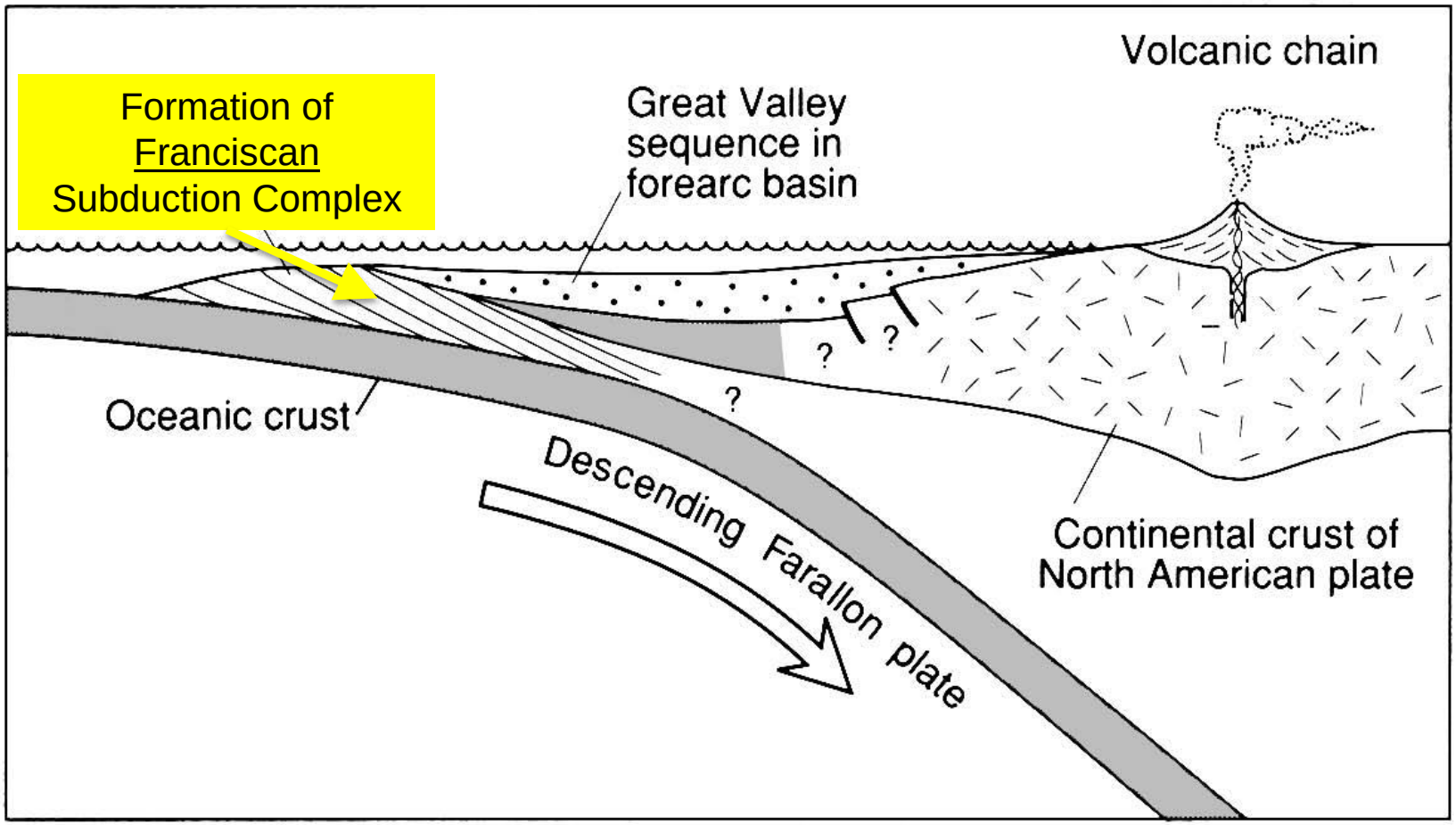

Post Mile 15.6
“Last Chance Grade”
Wilson Creek Bridge
Post Mile 12.6

GEOLOGY

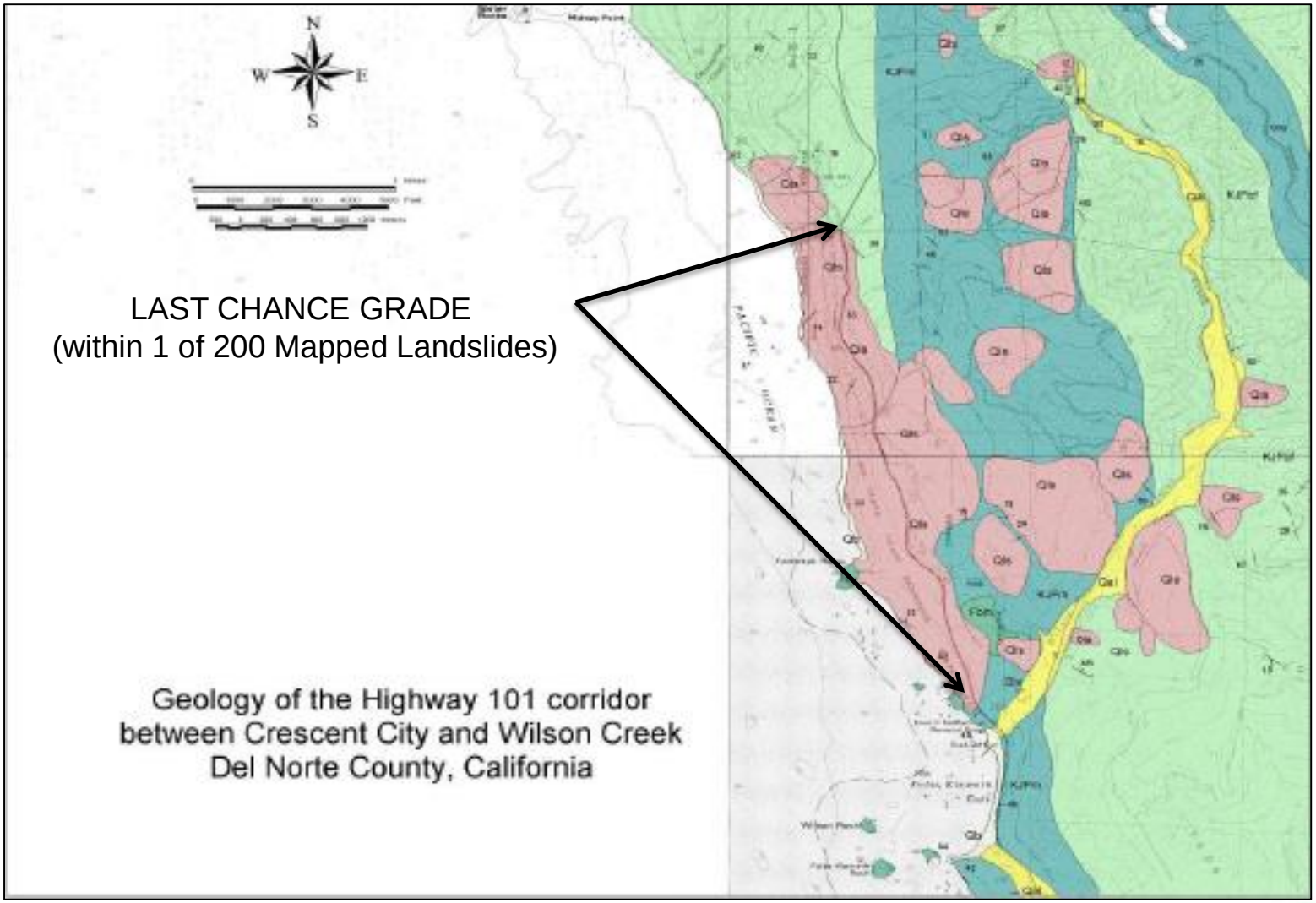


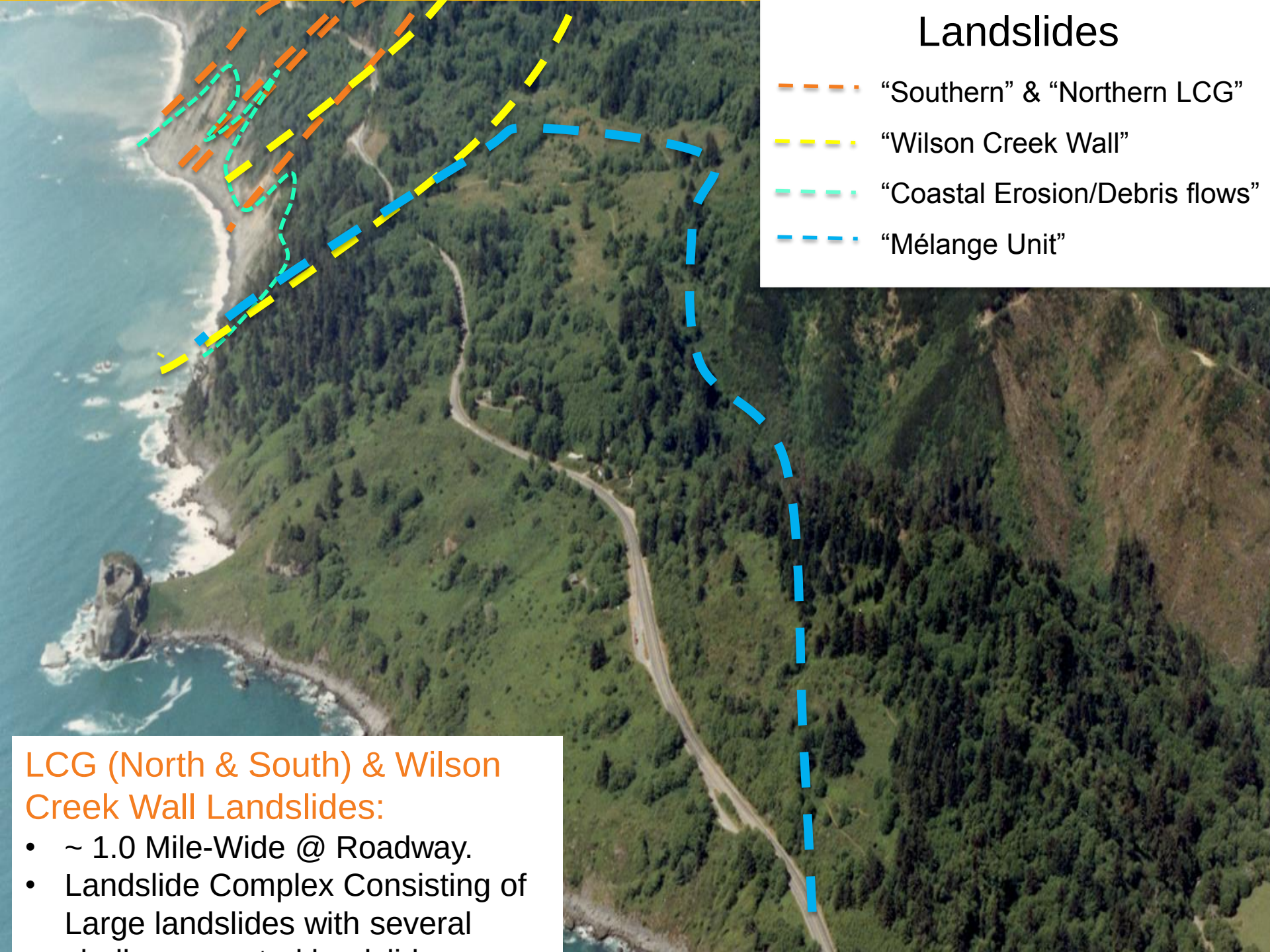
FRANCISCAN COMPLEX

GEOLOGY


Formation of
Franciscan
Subduction Complex
Volcanic chain
Great Valley
sequence in
forearc basin
?
?
?
Oceanic crust
Descending Farallon plate
Continental crust of
North American plate

LANDSLIDE OVERVIEW MAP

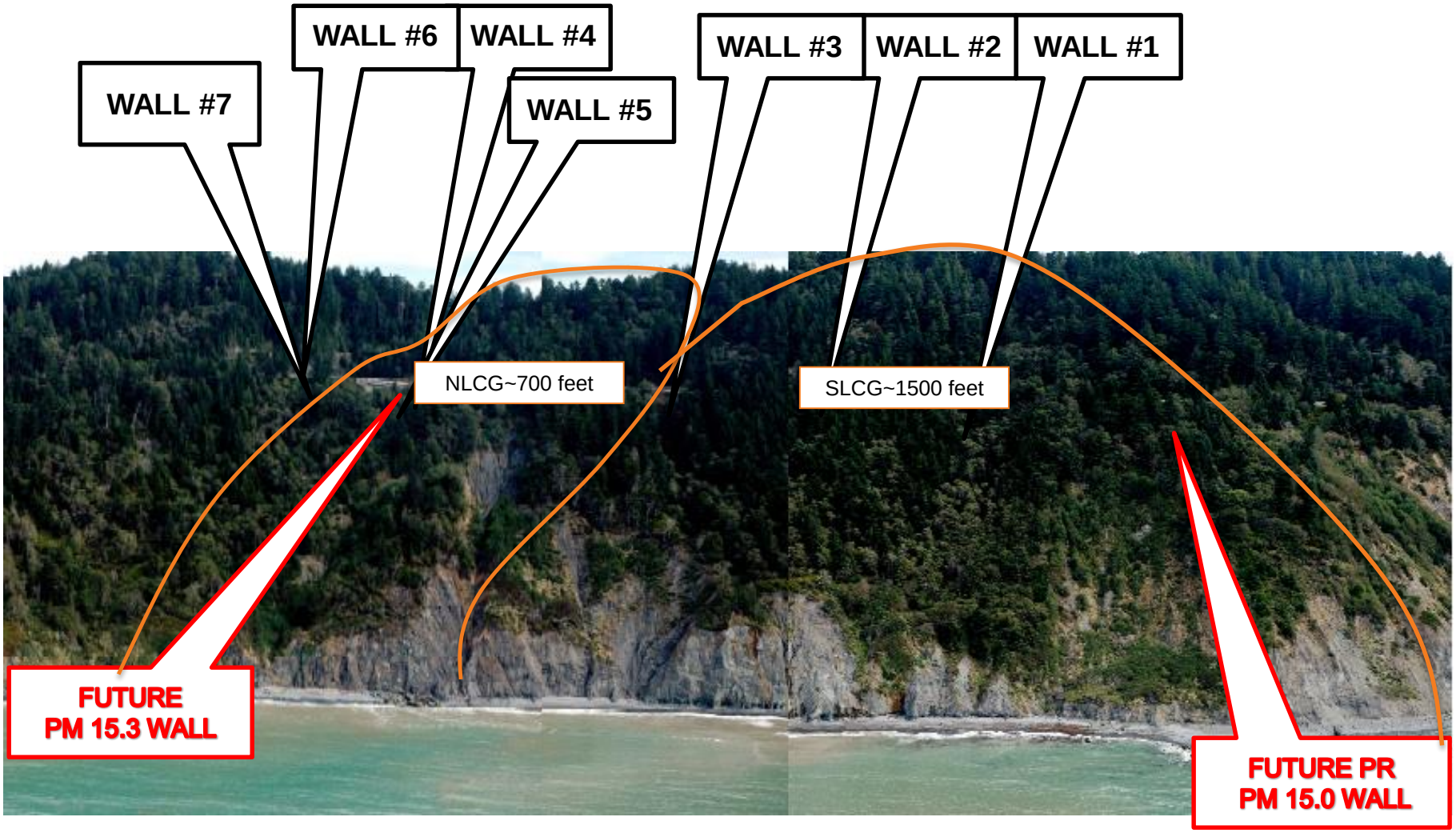




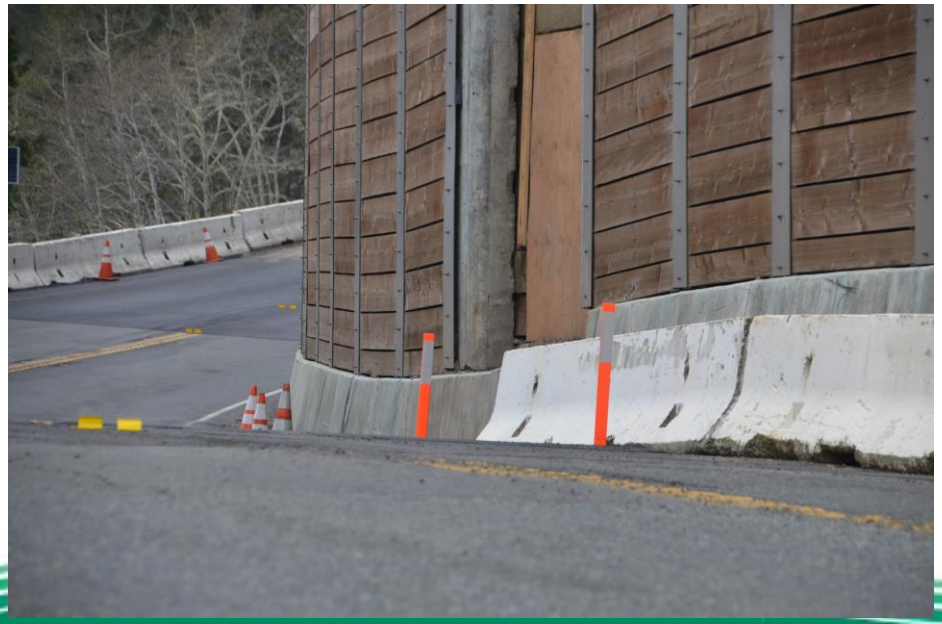
LCG (North & South) & Wilson Creek Wall Landslides:

- ~ 1.0 Mile-Wide @ Roadway.
- Landslide Complex Consisting of Large landslides with several

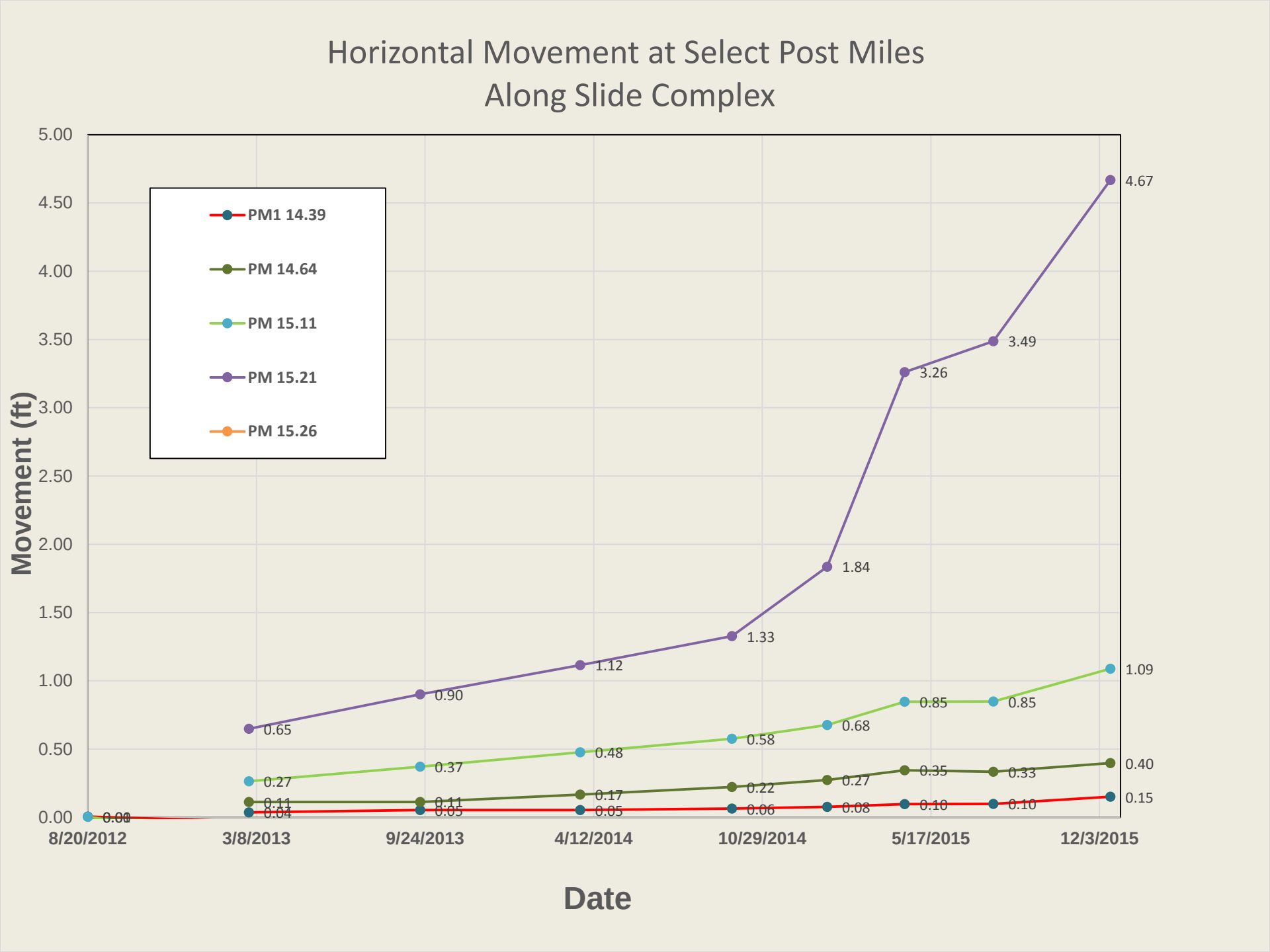
CURRENTLY MOVING

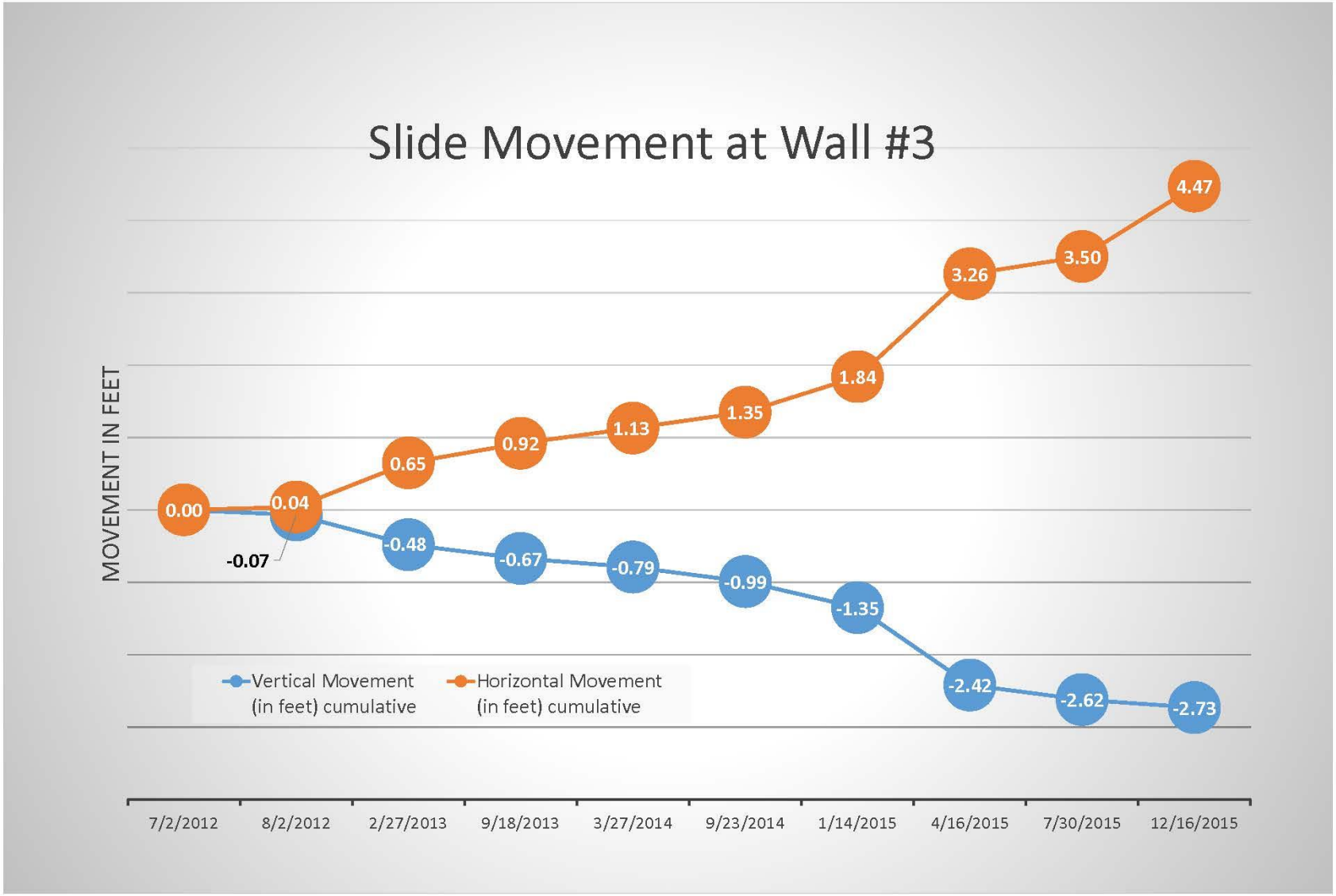


Undulating Vertical Alignment

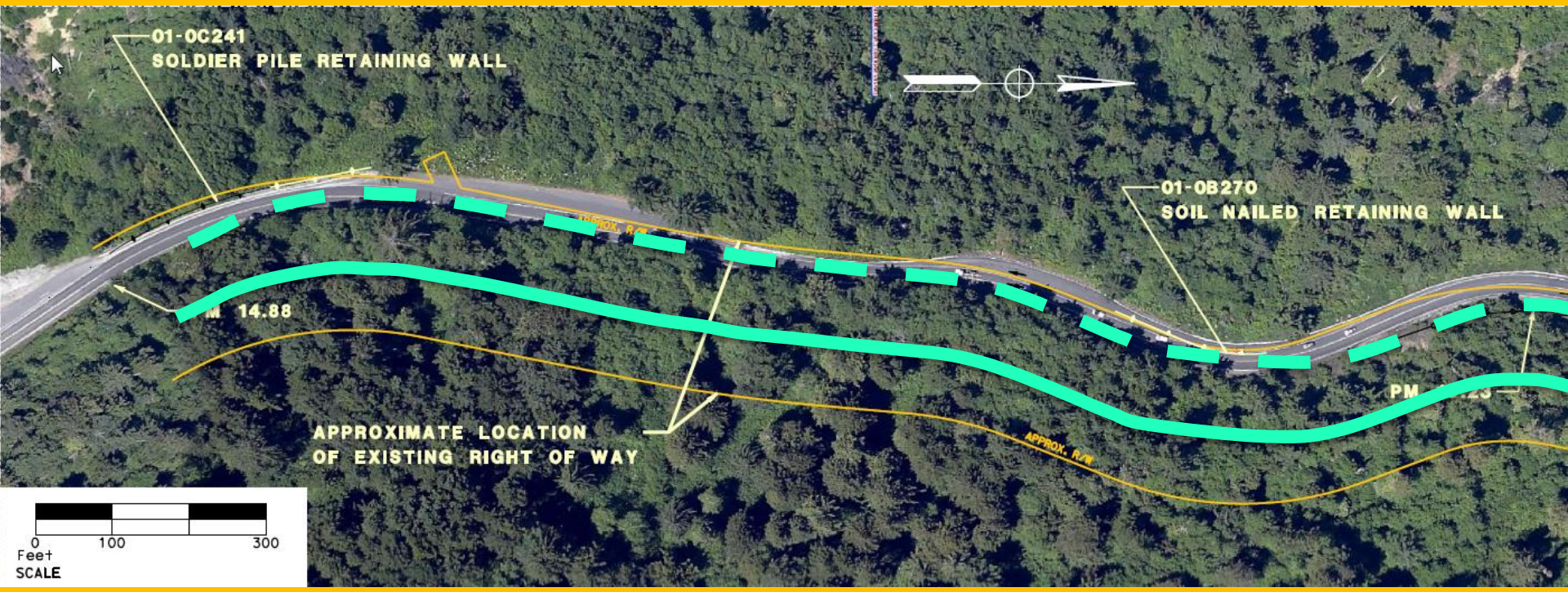


Work To Be Done This Summer


Horizontal Movement at Select Post Miles
Along Slide Complex
Movement (ft)
Date
PM1 14.39
PM 14.64
PM 15.11
PM 15.21
PM 15.26
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
8/20/2012
3/8/2013
9/24/2013
4/12/2014
10/29/2014
5/17/2015
12/3/2015
0.65
0.90
1.12
1.33
1.84
3.26
3.49
4.67
0.27
0.37
0.48
0.58
0.68
0.85
0.85
1.09
0.11
0.11
0.17
0.22
0.27
0.35
0.33
0.40
0.04
0.05
0.05
0.06
0.08
0.10
0.10
0.15


Slide Movement at Wall #3
MOVEMENT IN FEET
0.00
0.04
0.65
0.92
1.13
1.35
1.84
3.26
3.50
4.47
-0.07
-0.48
-0.67
-0.79
-0.99
-1.35
-2.42
-2.62
-2.73
Vertical Movement (in feet) cumulative
Horizontal Movement (in feet) cumulative
7/2/2012
8/2/2012
2/27/2013
9/18/2013
3/27/2014
9/23/2014
1/14/2015
4/16/2015
7/30/2015
12/16/2015

ROADWAY LATERAL MOVEMENT

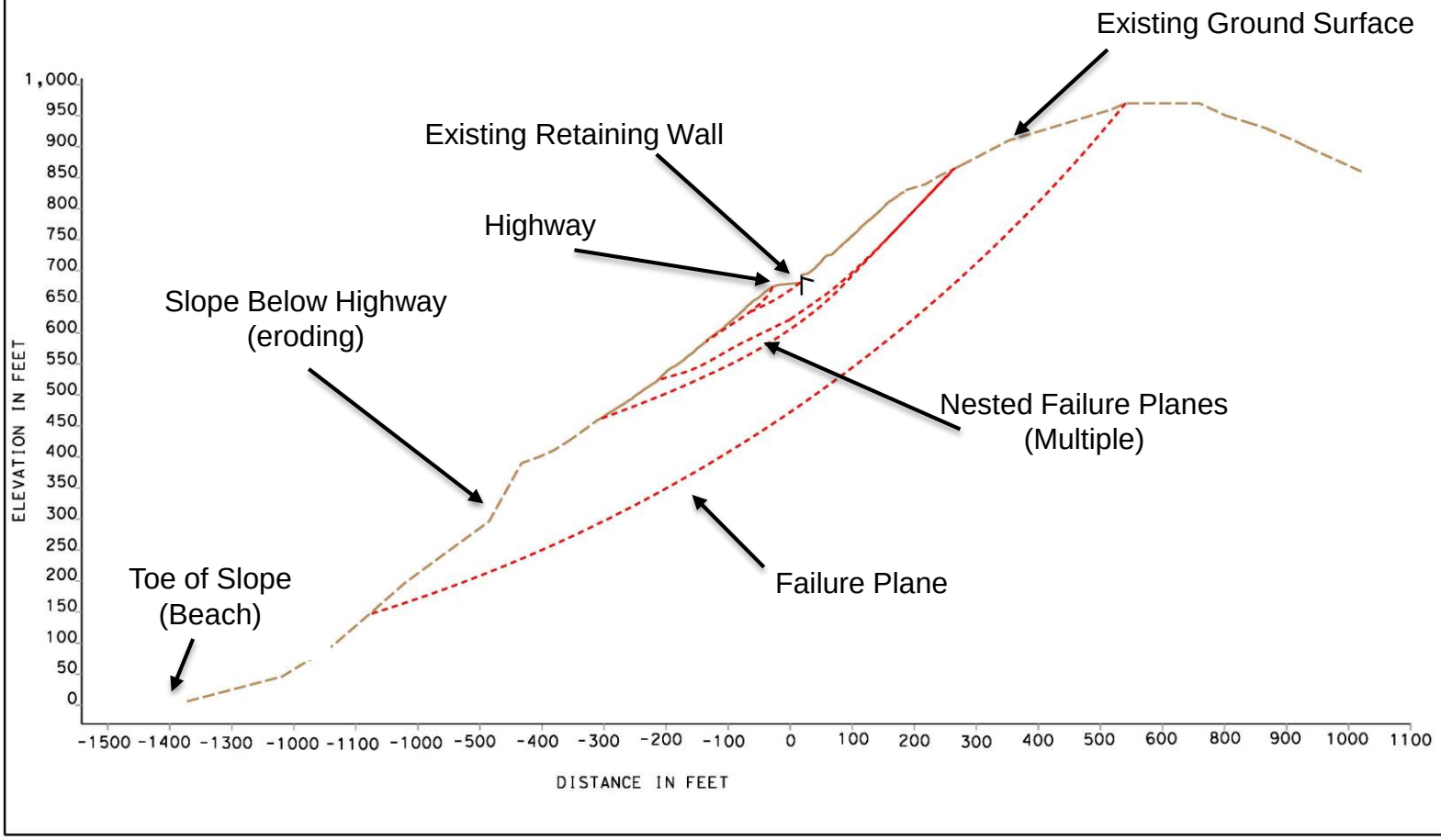


Surface Monitoring Data (Land Surveys) July 2012 – December 2015

- Recent LCG slide movement near RW #3: Vertical ~ **2.5'** Horizontal ~ **3.5'**
- Max horizontal movement near PM 15.21 ~ **4.67'**

CROSS-SECTION

TYPICAL



DESIGN-CROSS-SECTB-B'.DGN 3/21/2016 12:56:49 PM

HISTORIC TIMELINE

- 1894- Initial “Roadway” built across the site
  - Landslide Noted- “Last Chance Slide”
- 1930’s- Minor realignment performed
  - Landslide Noted-Expensive Maintenance Noted
- 1970’s -$ and frequency of movement increasing
- 1980’s -Initiated studies for major realignment
  - Realignment Costly & Infeasible
- 1990’s –Reanalyzed major realignment
  - Realignment Costly & Infeasible
  - Maintain Existing Alignment
- 2009 -Safety Project
  - 6 Retaining Walls Constructed

HISTORIC TIMELINE

- 2010 & 2011 -Federally Declared Storm Event
  - Received Federal Emergency Relief Program Funding
  - Additional Retaining Walls Necessary to Maintain Alignment
- 2012 –Increased Landslide Movement
  - Community Interest Rapidly Increased
  - Congressmen & Assemblymen Involvement
- 2014/15- Feasibility Study & Economic Impact Study
  - Congressman Huffman Working Group
  - Official Partnering with Parks & Tribes
  - Monitoring Systems Installed
  - Project Initiation Document Started
- Currently
  - Emergency Project (RW#3 / Undulating Alignment))
  - Funding Being Sought

SUMMARY of HISTORY

- **Longstanding History of Road Failures**
- **No Full Closures**
- **Average Repair Cost**
  - **$1.2 mil / yr (1981-2012)**
  - **$1.5 mil / yr (2012-2016)**
  - **Over $40 mil (1981-present)**

PROJECT DEVELOPMENT (To-Date)

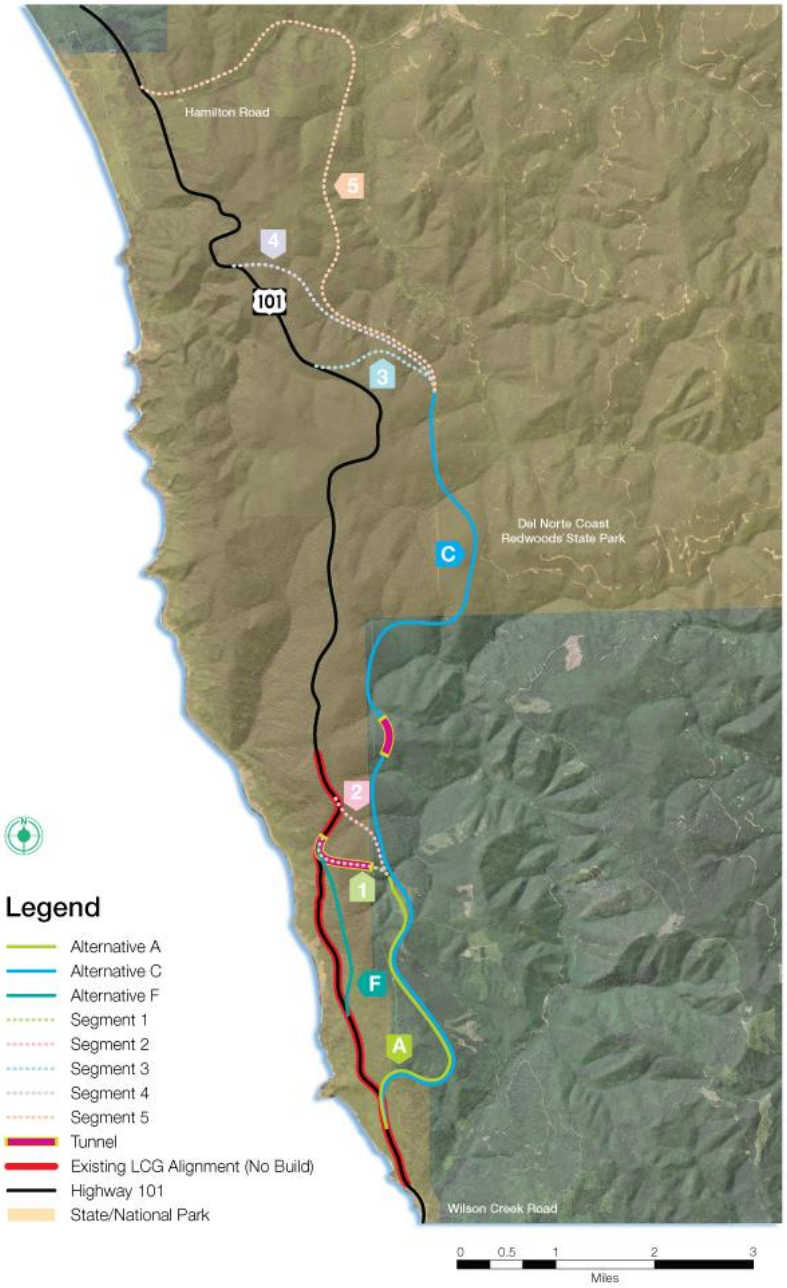
- Feasibility Study Completed
    - Included Economic Analysis
- Project Initiation Document: On track to be completed this summer
    - Funding identification is next critical step
- Public Engagement Plan – Proactive Engagement w/ Stakeholders
    - Initiated early
    - Will continue through out project
- Several Working Groups
        - Caltrans Staff/Specialists
        - Congressman Huffman's Working Group
        - Biological Resources Working Group (Agencies)
        - Partnering with Tribes & Parks (not Gov. to Gov)
        - Cultural Resources Working Group

SIGNIFICANT SUPPORT FOR A PERMANENT SOLUTION

- Congressman Huffman's Stakeholder Group
- Last Chance Grade Partners
- Biological Resources Working Group
- Caltrans Multi-Disciplinary Project Development Team
- Cultural Resources Sub-Working Group
- Del Norte County LCG Citizens Advisory Committee
- Many Others……(local and regional)

MAP OF ALTERNATIVES

A1, A2, C3, C4, C5, F



PRELIMINARY ALTERNATIVES FOR STUDY

Note: All ALTERNATIVES STILL REQUIRE GEOTECHNICAL & ENVIRONMENTAL STUDIES (CEQA / NEPA)

PRELIMINARY ALTERNATIVES COMPARISON*

		NEW CONSTRUCTION							WATERSHED CROSSINGS			EXISTING HABITAT TYPE	
			STRUCTURES										
ALTERNATIVE	TRAVEL TIME ADDED (MINUTES)	CONSTRUCTION LENGTH (MILES)	CULVERTS > 36"	TUNNEL	BRIDGES	LENGTH WITHIN PARKS (MILES)	CONSTRUCTION FOOTPRINT (ACRES)	CONSTRUCTION SCHEDULE (YEARS)	WILSON CREEK	MILL CREEK	CONSTRUCTION COST IN 2016 $ (MILLIONS)	TYPE	ACRES
A1 Rudisill Road to LCG Tunnel (Includes 2,425 ft. tunnel)	1.0 min.	3.2 miles	9	Yes	1	0.8 miles	80 acres	3 years	1	0	$680	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	7 1 13 57 0 1.5
A2 Rudisill Road to Damnation Trailhead	0.8 min.	3.2 miles	10	No	2	0.6 miles	85 acres	2 years	2	0	$275	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	7 1 13 61 0 3
C3 Rudisill Road to South of Mill Creek Access (Includes 1,680 ft. tunnel)	1.7 min.	7.8 miles	19	Yes	4	3.2 miles	245 acres	3 years	6	3	$950	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	7 1 13 200 23 0
C4 Rudisill Road to North of Mill Creek Access (Includes 1,680 ft. tunnel)	1.5 min.	8.6 miles	14	Yes	5	4.0 miles	265 acres	4 years	6	4	$1,000	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	7 1 13 200 43 0
C5 Rudisill Road to Hamilton Road (Includes 1,680 ft. tunnel)	2.6 min.	11.7 miles	21	Yes	11	7.0 miles	330 acres	4 years	6	10	$1,250	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	7 1 13 216 93 0
F Full Tunnel Parallel to Existing Alignment (5,600 ft.)	1.0 min.	1.3 miles	N/A	Yes	N/A	N/A	4.5 acres	6.5 years	N/A	N/A	$1,050	Coastal scrub/grassland/spruce Riparian Clear cut Young Redwood Forest Mature Redwood Forest Old Growth Redwood Forest	2 0 0 0 1 1.5
Maintain Existing Alignment	Unknown and unquantifiable												

*All figures are estimates

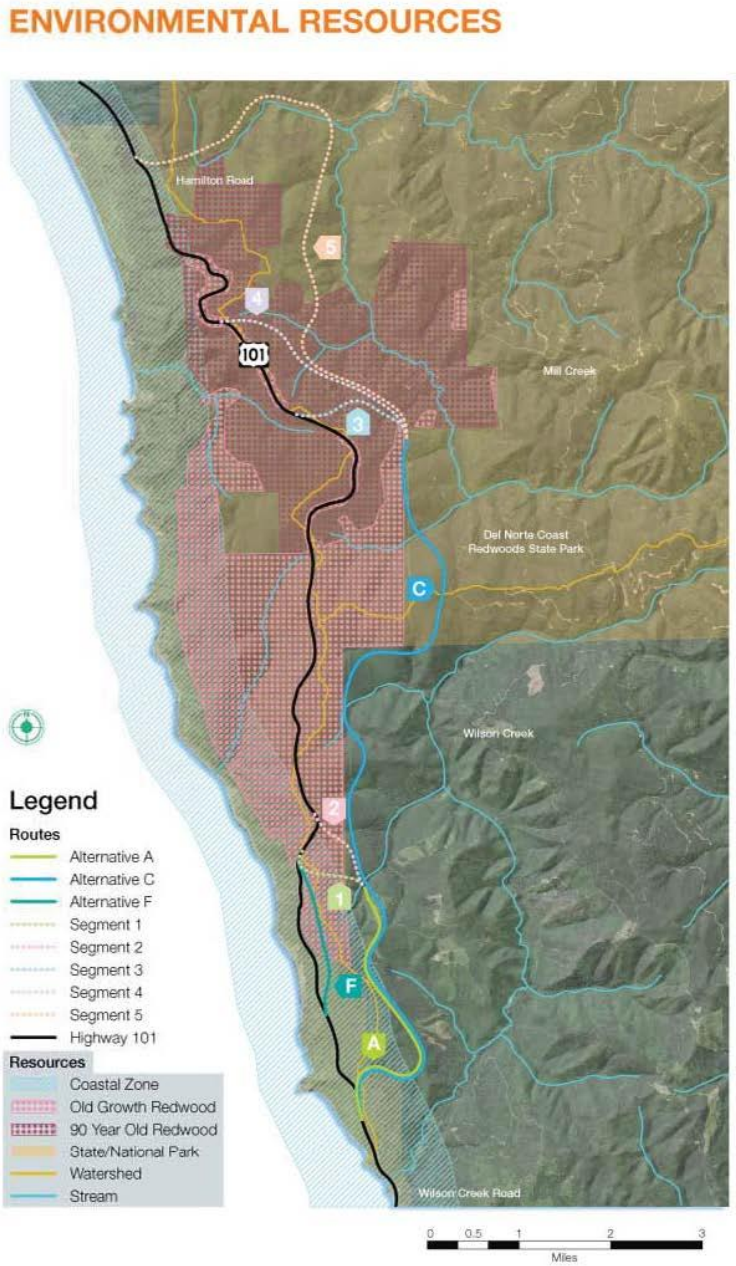
ENVIRONMENTAL & CULTURAL RESOURCES

- Extensive Environmental & Cultural resources located in the vicinity of all proposed alternative alignments for Last Chance Grade.

- Stakeholders are working together early & committed to avoiding and minimizing potential impacts to these resources.

Federally Recognized Tribes:

- Elk Valley Rancheria
- Tolowa Dee-ni' Nation
- Yurok Tribe

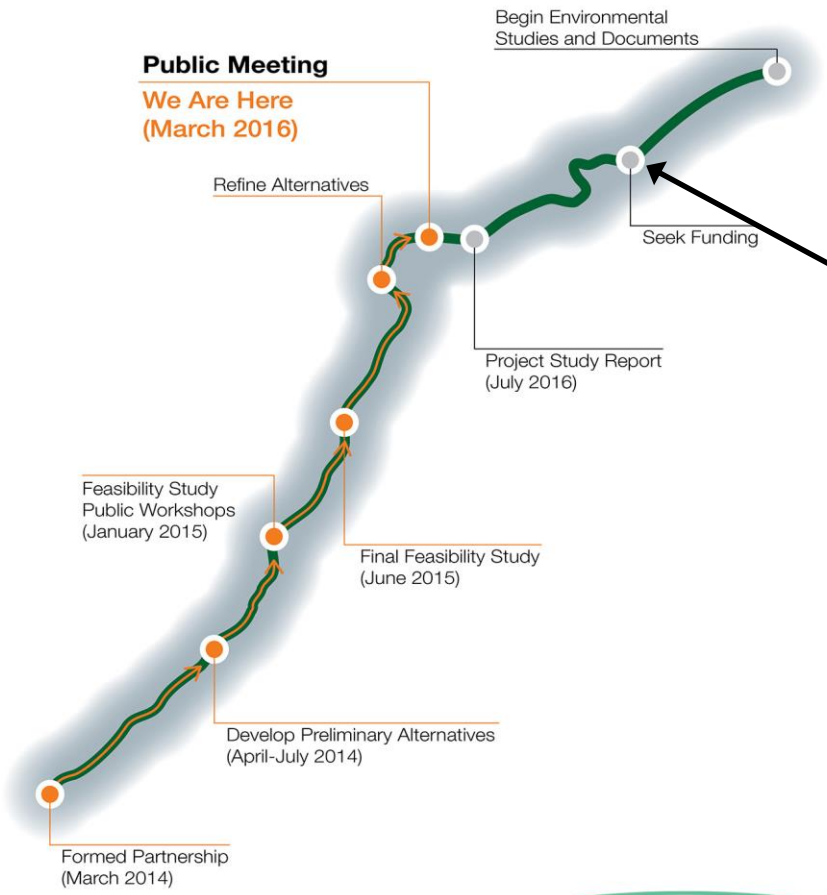


Preliminary Alternatives:
A1, A2, C3, C4, C5, F

SIGNFICANT ENVIRONMENTAL RESOURCES

- **Many Studies Will Be Required:**
  - **Old Growth Redwoods**
  - **Marbled Murrelet**
  - **Cumulative Watershed Impacts**
  - **Specific Fisheries Impacts**
  - **Habitat Connectivity Issues**
  - **Bats, Pollinators, etc…**
- **Significant Mitigation Expected**

Project Timeline



Actual Project Delivery Determined by Acquisition of Funding.

Different Funding Programs Have Different Delivery Requirements

Usually Seek Funding After PSR Seeking It Now

Potential Project Delivery Milestone Durations:

- **Enviro Studies: ~5-8 yrs**
- **Design, Permits, ROW: ~3-5 yrs**
- **Construction:~5-8 yrs**

EMERGENCY PROJECTS

- CALTRANS' EMERGENCY PROJECT REQ.
- FEDERAL EMERGENCY FUNDING
  - PROCESS
  - FUNDING REQ.
- CALTRANS' RESPONSE SCENARIOS

CALTRANS' EMERGENCY PROJECT DEVELOPMENT PROCESS

Per PCC 10122 – State can suspend State Contract Act, and initiate an Emergency Contract under specific conditions-

Requirements / Constraints:

- Beyond Caltrans' Maintenance Forces Abilities (Schedule / Equipment / Materials / Technical)
- Project must prevent or mitigate the loss or impairment of life, health, property, or essential services.
- State funds must exist before contract can be initiated

Damage That Caltrans Responds To

Failing Wall Lagging / Failing Barrier

One day after Paving

Failing Wall Lagging / Failing Barrier / Failing Shoulder & DI

LAST CHANCE GRADE

Federal Highway Administration (FHWA) Emergency Relief (ER) Program

Congressionally appropriated program, not a standard Fed-Aid Program. Only applicable under unique conditions. Program has many constraints & specific requirements.

Program Initiation:

- Significant damage occurs & coordination with FWHA begins
- Through Office of Emergency Services (OES), a Gubernatorial or Presidential Proclamation declares a State of Emergency, which initiates the ER Program - allowing project applications.
- FHWA approves, denies or requires adjustments to project applications

Federal Highway Administration (FHWA) Emergency Relief (ER) Program

Some of the Requirements:

- State ROW Only.
- Betterments (improvements) not allowed.
- CEQA/NEPA*, Permits, Right of Way (ROW) all required.
- Funded $100 million per year- All US States and Territories.
- $100 million max project cost, per proclamation, per state, per year.
  - Projects above $100 million requires unique congressional appropriation.

❖ LCG Realignment Project would require several Variances

EMERGENCY RESPONSE -1

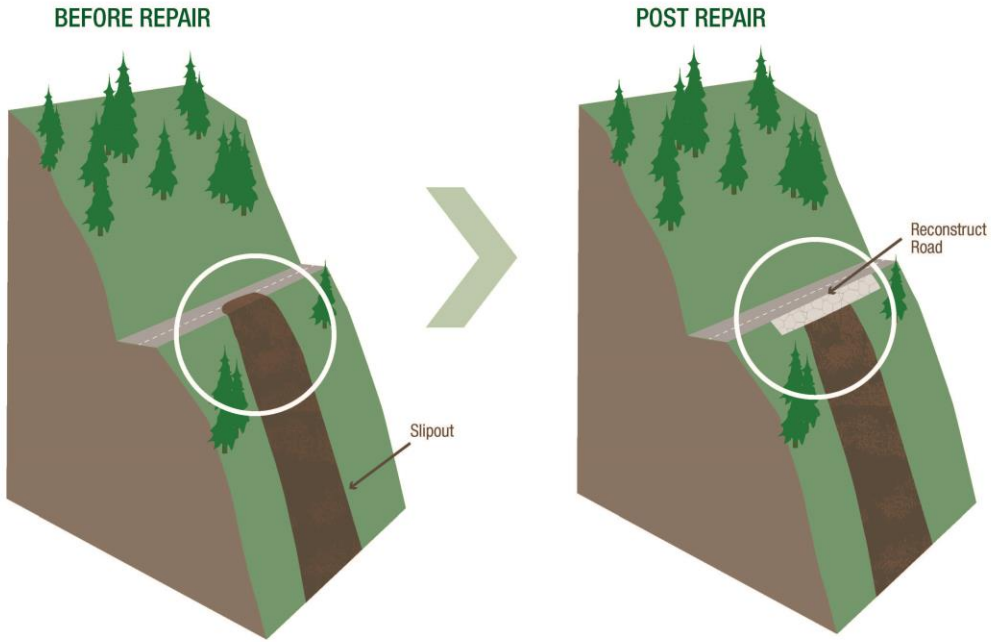
SCENARIO 1

Small Scale Slipout

Caltrans Response
Reconstruct Roadway in Place

Construction Duration
Days to Weeks

Traffic Access
Yes. Likely One-Way Reversible



HAS BEEN OCCURRING AT LCG

EMERGENCY RESPONSE -2

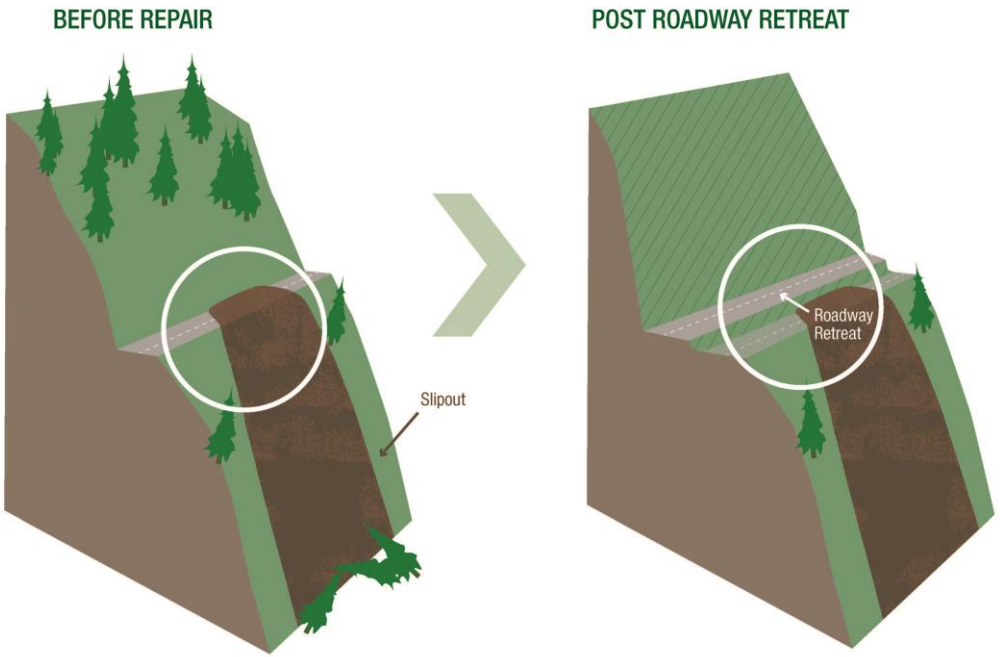
SCENARIO 2

Moderate Scale Slipout

Caltrans Response
Roadway Retreat Away from Ocean

Construction Duration
Weeks to Years

Traffic Access
Short-Term Full Closure. Then, One-Way Reversible Traffic



NOT OCCURRING AT LCG
(will be next step)

EMERGENCY RESPONSE-3

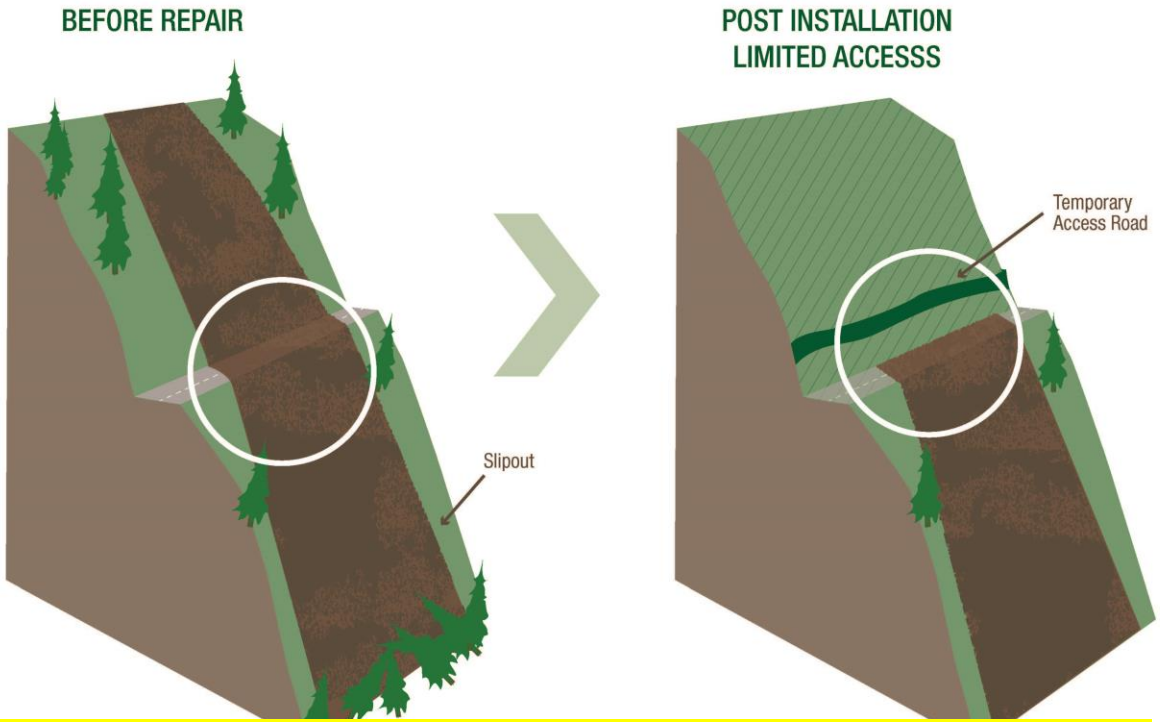
SCENARIO 3

Large Scale Slipout

Caltrans Response
Construct Temporary Access Road (1 or 2 lanes) + Accelerate LCG Realignment Project

Construction Duration
Years

Traffic Access
Full Closure. Then, One-Way Reversible Traffic on Temporary Road Until Realignment is Complete



NOT OCCURRING AT LCG
(if necessary)

EXTENSIVE SITE MONITORING

- **Near-Real Time Monitoring System**
- **Field Topographic Surveys**
- **Aerial Surveys**
  Slope & Toe Erosion
- **Daily Field Inspections**

WHATS OCCURRING NOW

- Project Initiation Document will be completed June, 2016.

- Federal Funding (ER & Other Potential Sources) Being Sought

- Monitoring & Maintaining Existing Road is Priority
    - Repair Retaining Walls
    - Adjust Vertical Alignment
    - Power Supply; Signs w/ Lights; Changeable Message Signs
    - Additional Monitoring Systems Planned
    - Web Cameras for Public's Use
    - Slope Lighting

FOR MORE INFORMATION

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