

# Pedro Point Headlands Coastal Trail Feasibility and Conceptual Design Study

Public Workshop  
October 10, 2019



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ENGINEERING GEOLOGY AND HYDROLOGY

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**Biotic Resources Group**

Biotic Assessments ♦ Resource Management ♦ Permitting



# Workshop Agenda and Objective

## 1. Presentation (25 min)

- Overview of background, goals and objectives
- Outreach and engagement efforts to date
- Site resources (trees, slopes, etc.)
- Trail corridor overview
- Trail design options and considerations

## 2. Interactive trail design exercise (45 min)

## 3. Report out on exercise, next steps (20 min)

Objective: Get informed feedback from you about which trail works best/is preferred

A photograph of a forest path. In the foreground, a large tree trunk with rough, textured bark is visible. In the background, a person is walking away on a dirt path that leads into a dense forest with tall trees and green foliage.

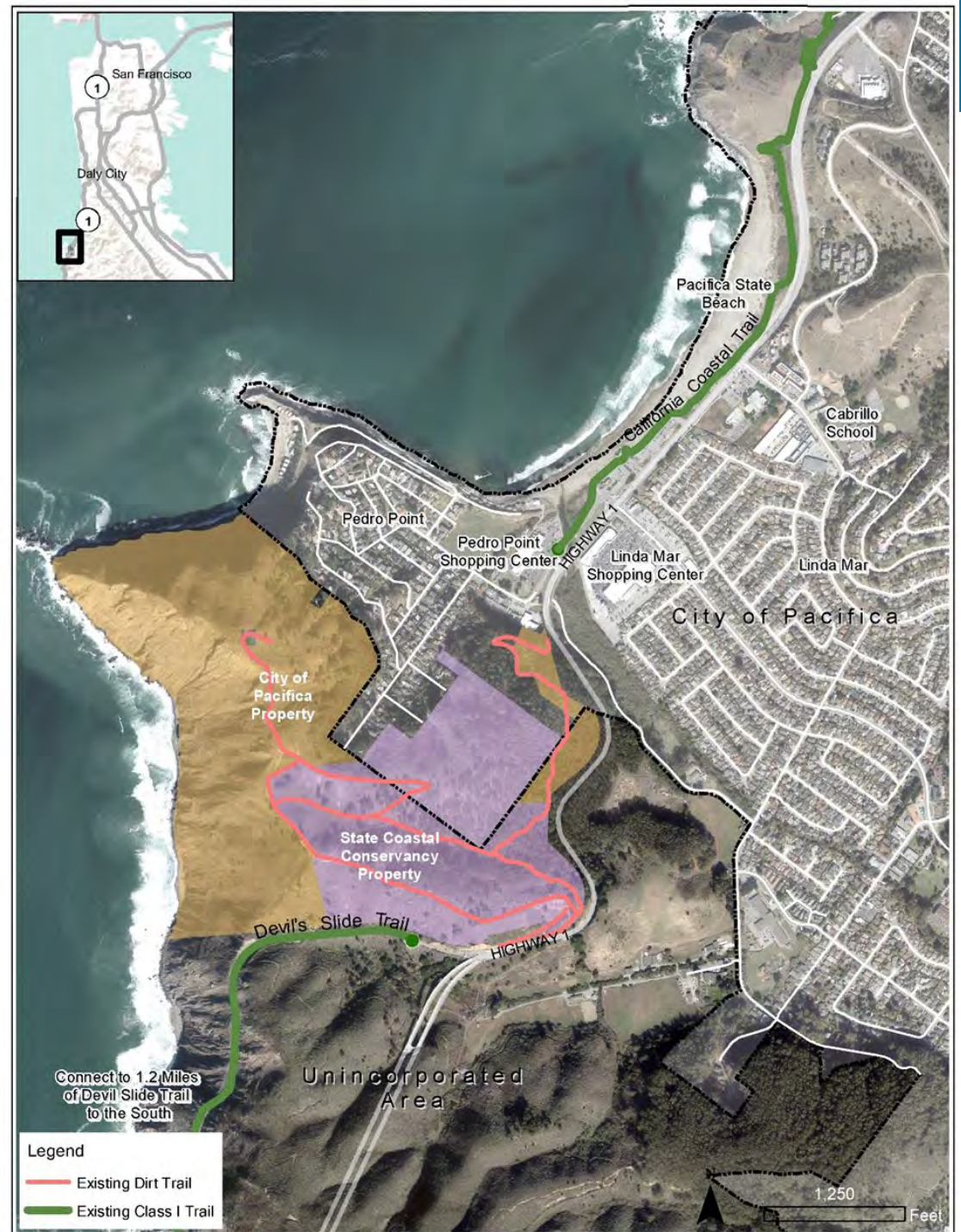
# Goals, Objectives, Previous Plans





# Project Goals

- Close 1 mi gap
- Connect 7 mi of Coastal Trail, (connect population center and State Beach to popular trails)
- Allow for the enjoyment and appreciation of the area's scenic and natural resources
- Increase access to open space and trails in coastal San Mateo County
- Provide a safer alternative to Highway 1 for non-auto transportation



# Project Objectives

1. Maximize multi-user experience
2. Maintain natural habitat character and visual integrity
3. Maximize inclusive access; comply with applicable federal, state and local standards and guidelines
4. Limit environmental impacts
5. Minimize construction and maintenance costs (trail resilience and longevity)
6. Maximize safety and emergency access
7. Adhere to San Mateo County Parks Trails Master Plan Guidelines and Local Coastal Programs



## Key Trade-Offs:

- Class I bike route geometry vs. recreational trail geometry
- Trail geometry vs. grading, walls, tree removal and cost



# Other Plans Reviewed

## **Prior Pedro Point Plans and Studies**

1. San Pedro Point Restoration Plan: A Transition to Public Use (1995)
2. Pedro Point Headlands Trail System Concept Plan (1999)
3. Design for Pedro Point Headlands Bikepath (2005) in conjunction with Water Line Construction
4. Headlands Trail Preliminary Engineering Report, Kennedy Jenks Consultants (2009)

## **Trail, Bicycle, and Pedestrian Plans and Studies**

1. San Mateo County Trail Plan (2001)
2. Pacifica State Beach Master Plan for Public Improvements (2002)
3. Caltrans District 4 Bay Area Bike Plan for the San Francisco Bay Area (2018)
4. Pacifica Bike and Pedestrian Master Plan (2019)

# Project Advisory Team (PAT)

City of Pacifica  
Pacifica Land Trust  
California Coastal Conservancy  
California Coastal Commission  
Caltrans  
San Mateo County Parks  
San Mateo County Supervisor Horsley's  
Office  
National Park Service





# Outreach and Engagement

- Web site with project information
- Outreach to...
  - Individuals...
  - Community organizations...
  - Government organizations...
  - Advocacy groups...
  - Bike/Ped Master Plan sign-ins...



The Coastal Conservancy is studying routes for the California Coastal Trail to connect Pacifica to the Devil's Slide Trail via a multi-use pathway that is accessible for all users. The project is considering several alignments and aims to provide a beautiful, easy-to-use alternative to Highway 1. The venture is in the initial phase of design and a survey has been developed to gather input on community needs, concerns, and desires. Please contribute your feedback by filling out the [survey here](#).



## Save the Date

- **What:** Pedro Point Headlands Trail Community Meeting
- **Why:** To hear from the community and share what has been learned
- **When:** October 10 6pm-8pm
- **Where:** Pacifica Community Center | 540 Crespi Dr



# Outreach and Engagement

## Events

- Sept 21: Beach Clean Up, Pacifica
- Sept 25: Rockaway Farmer's Market
- Sept 28: Fog Fest

[www.PedroPointCoastalTrail.com](http://www.PedroPointCoastalTrail.com)



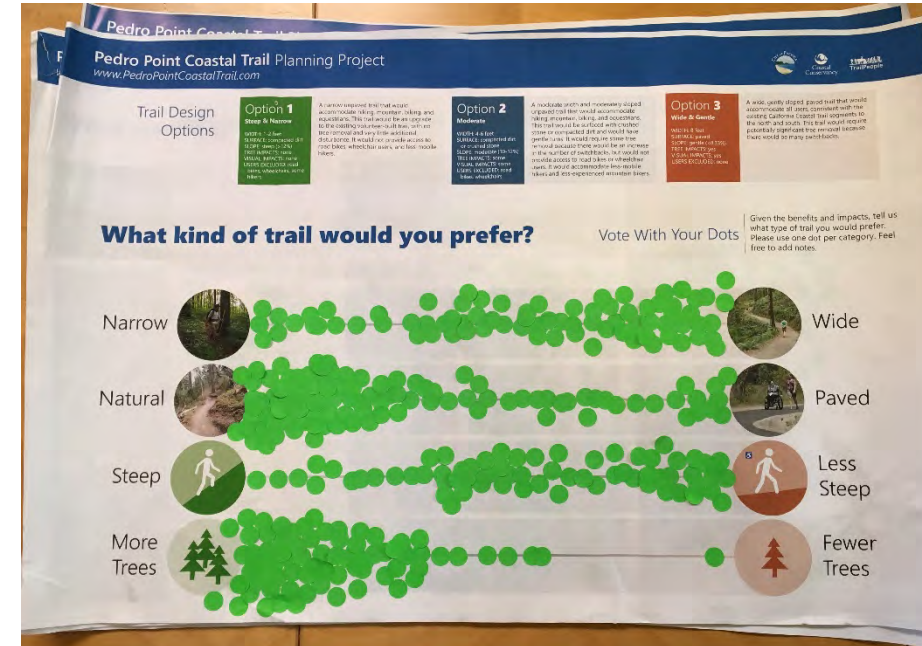


# Outreach and Engagement





# Outreach and Engagement





A photograph of a forest path. In the foreground, a large tree trunk with rough, textured bark is visible. The path leads into a dense forest with many trees and green foliage in the background.

## Site Resources





Main sensitive biological resources:

- Mixed evergreen forest on northern slope
- Protected Monterey cypress
- Drainages and seeps

No identified archaeological resources



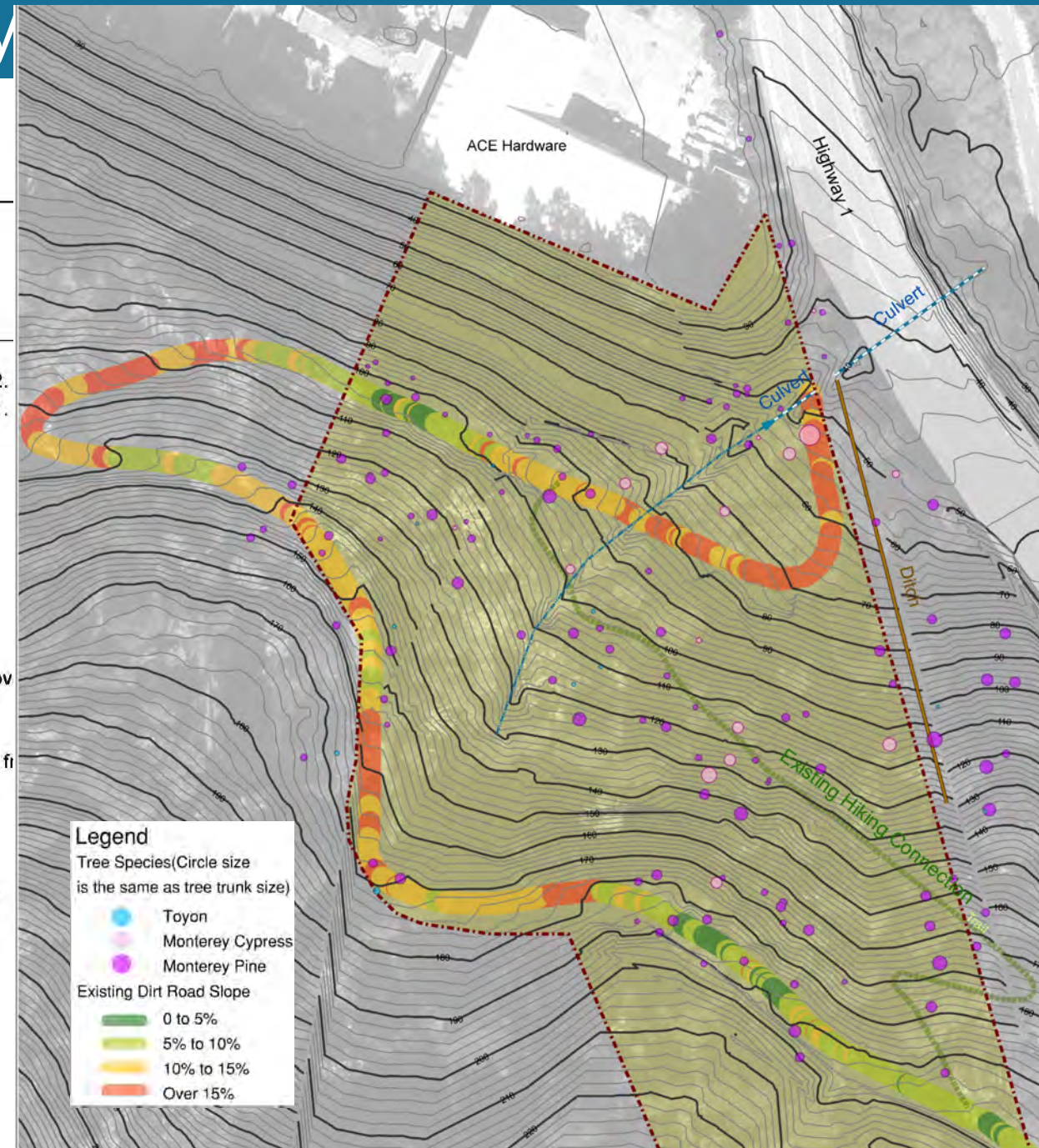


# Tree Survey, Biological Inventory

## Tree Assessment

Pedro Point Trail  
Pacifica, CA  
August 2019

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition	Suitability for Preservation	Comments
1	Monterey cypress	25	Yes	Good	High	Group of 2 trees; base 1 foot from #2.
2	Monterey cypress	16	Yes	Good	High	Group of 2 trees; base 1 foot from #1.
3	Monterey cypress	16	Yes	Good	Moderate	Interior tree.
4	Monterey cypress	11,11,10,9	Yes	Fair	Moderate	Multiple trunks arise from 1 foot.
5	Monterey pine	22	Yes	Fair	Low	Stunted; 20 feet tall.
6	Monterey pine	18	Yes	Fair	Low	Stunted; 20 feet tall.
7	Monterey pine	17	Yes	Poor	Low	Thin crown; covered in lichen.
8	Monterey pine	23	Yes	Fair	Low	Thin crown; covered in lichen.
9	Monterey cypress	15	No	Poor	Low	Bowed north 9.
10	Monterey pine	16	Yes	Poor	Low	Lost top.
11	Monterey pine	21	Yes	Fair	Low	Codominant trunks arise from top; cov
12	Monterey pine	18	Yes	Poor	Low	Sinuous trunk.
13	Monterey pine	20	Yes	Fair	Low	Narrow form.
14	Monterey cypress	75	Yes	Fair	Moderate	Huge tree; prune wounded branches fr
15	Monterey pine	16	Yes	Poor	Low	Lost top.
16	Monterey pine	26	Yes	Fair	Low	Narrow form; bowed north.
17	Monterey pine	18	Yes	Fair	Low	Narrow form; bowed east.
18	Monterey pine	26	Yes	Fair	Low	Narrow form; crown one sided north.
19	Monterey pine	21	Yes	Fair	Low	Narrow form; crown one sided west.
20	Monterey pine	19	Yes	Fair	Low	Narrow form.
21	Monterey pine	18	Yes	Poor	Low	Bowed north.
22	Monterey cypress	15	No	Fair	Low	On edge of ravine.
23	Monterey pine	28	Yes	Fair	Low	In ravine.

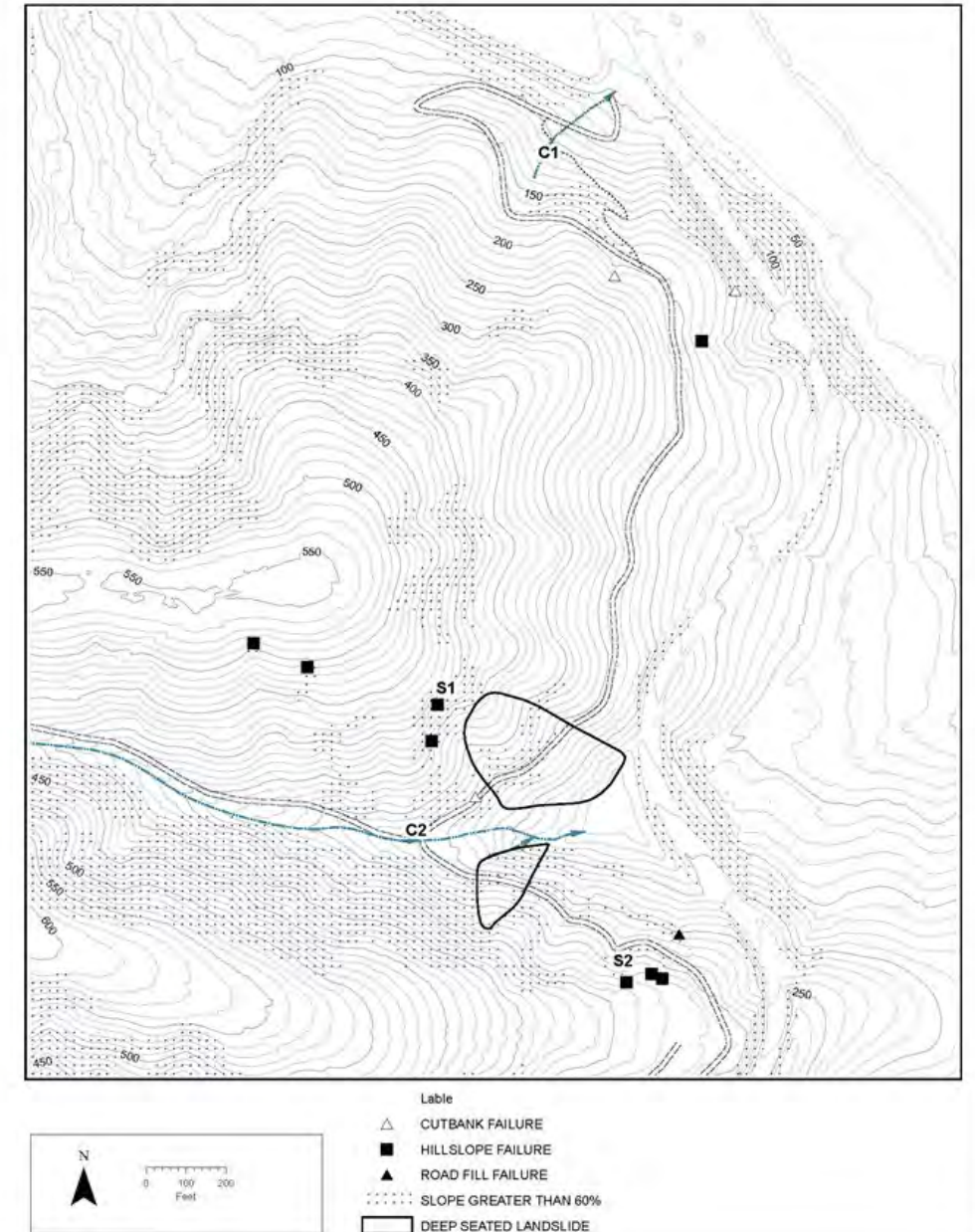




# Geology, Seismic, Landslides, Drainage Erosion

## Primary geological concerns:

- Soils have rapid runoff characteristics and high potential for erosion
- Undocumented fill along and under the existing utility road
- Shallow landslides, debris slides and flows
- Cutbank failures
- Two possible deep-seated dormant landslides
- Need for careful drainage plan and erosion control measures





# Trail Corridor Overview



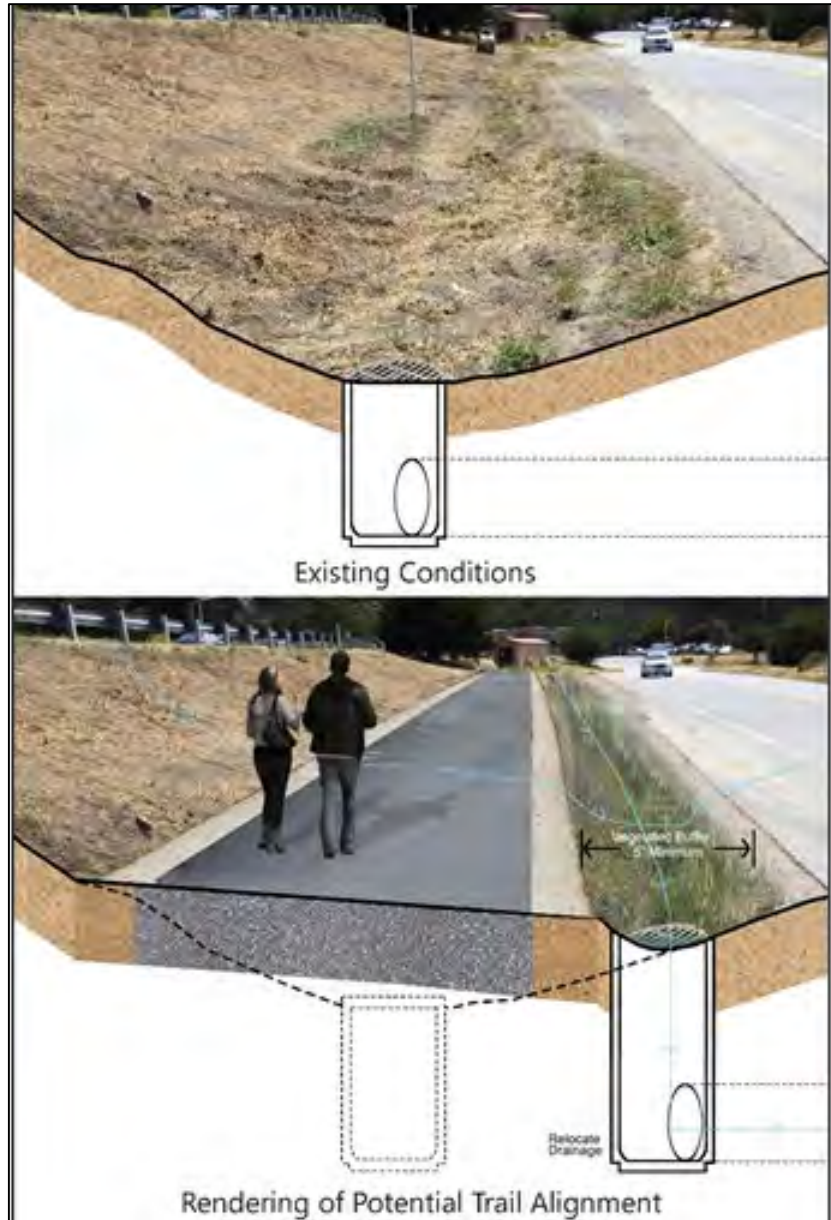


# Trail Sub-Segments

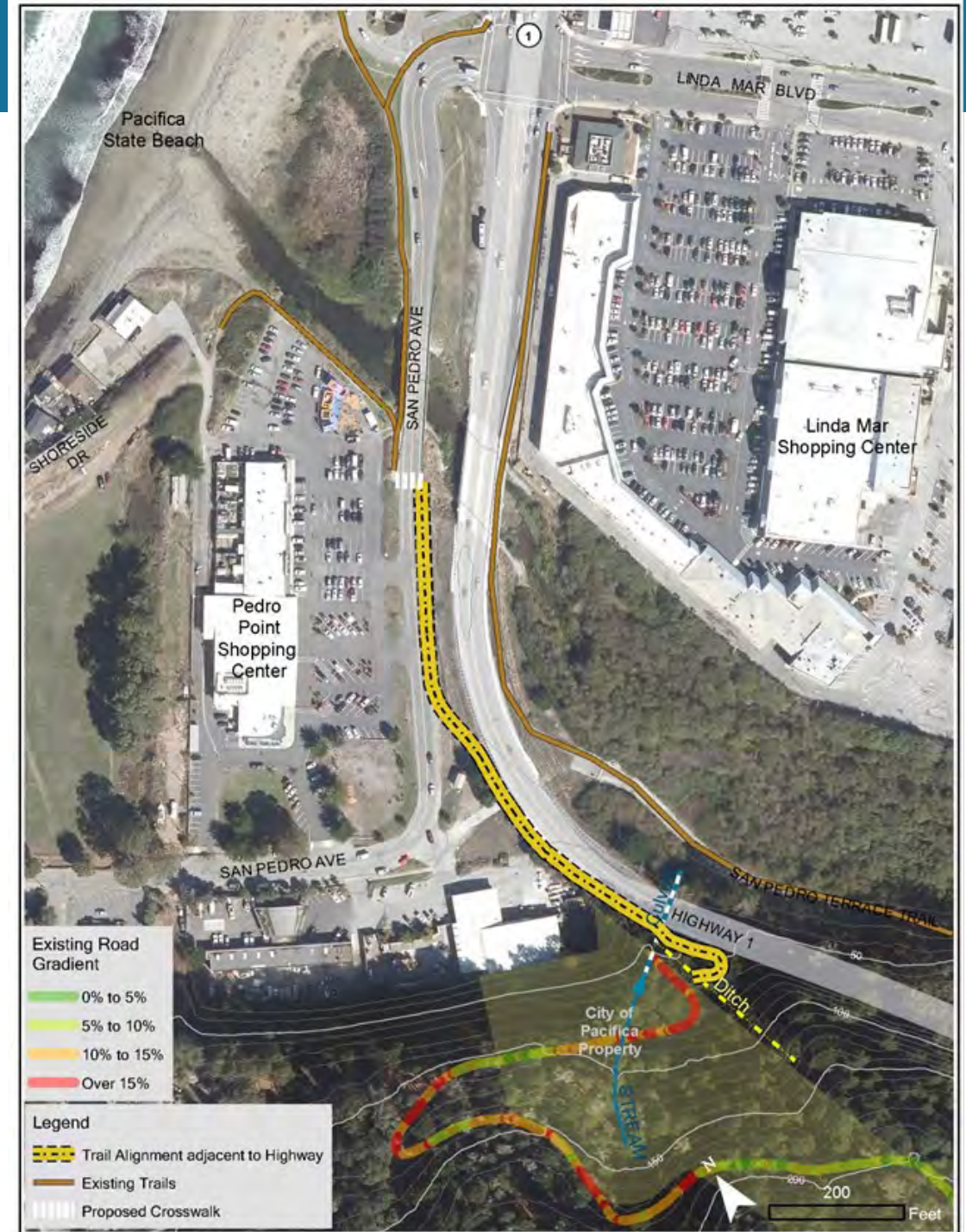




# Northern On-Street Connection



## Linda Mar Boulevard/San Pedro Avenue Connection Improvements





# Northern On-Street Connection

## 3 parking/trail access options



Map 1: Parking and Access Options with Existing Intersection



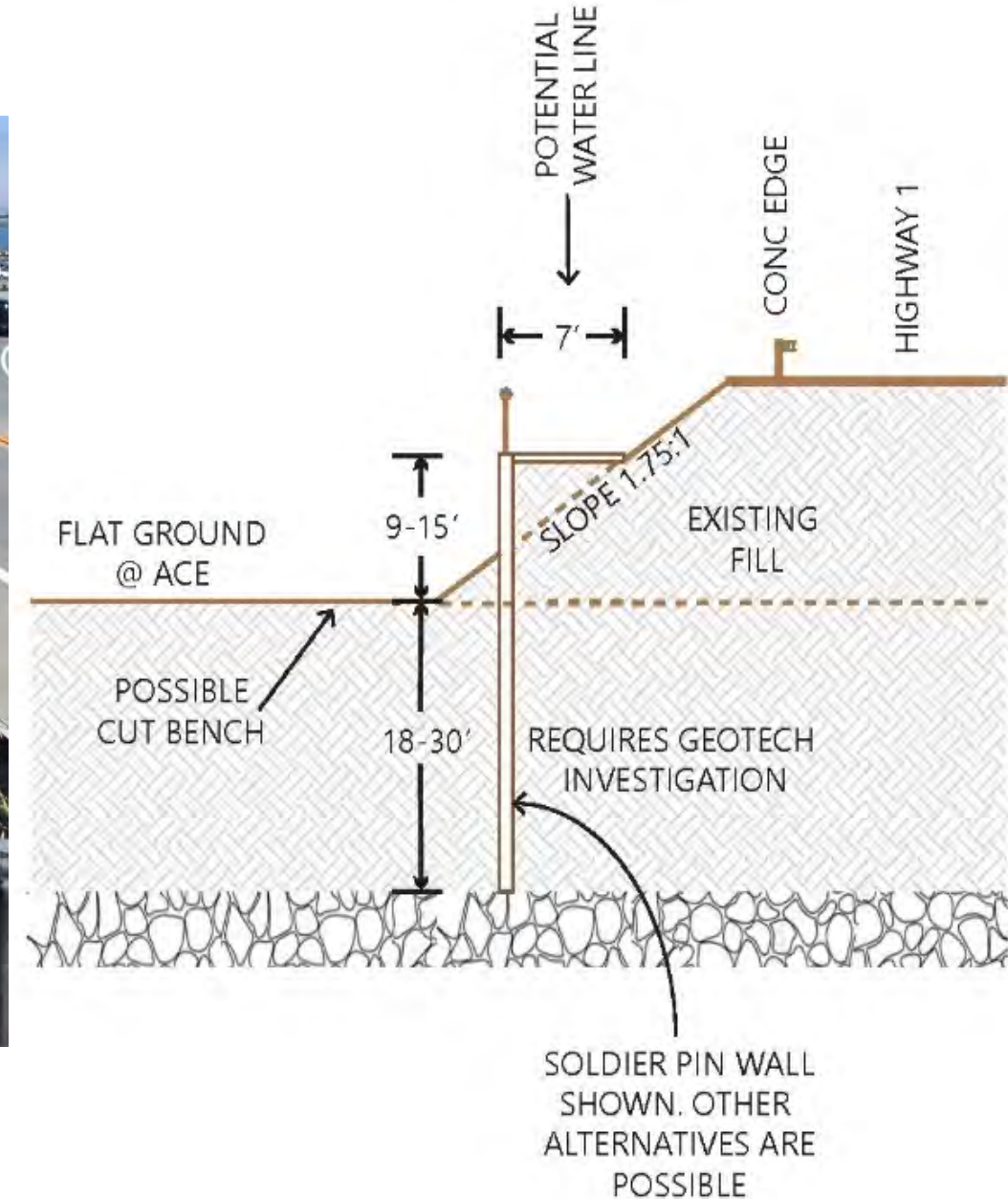
Map 1: Parking and Access Options with Reconfigured Intersection



Map 1: Parking and Access Options Including Plaza



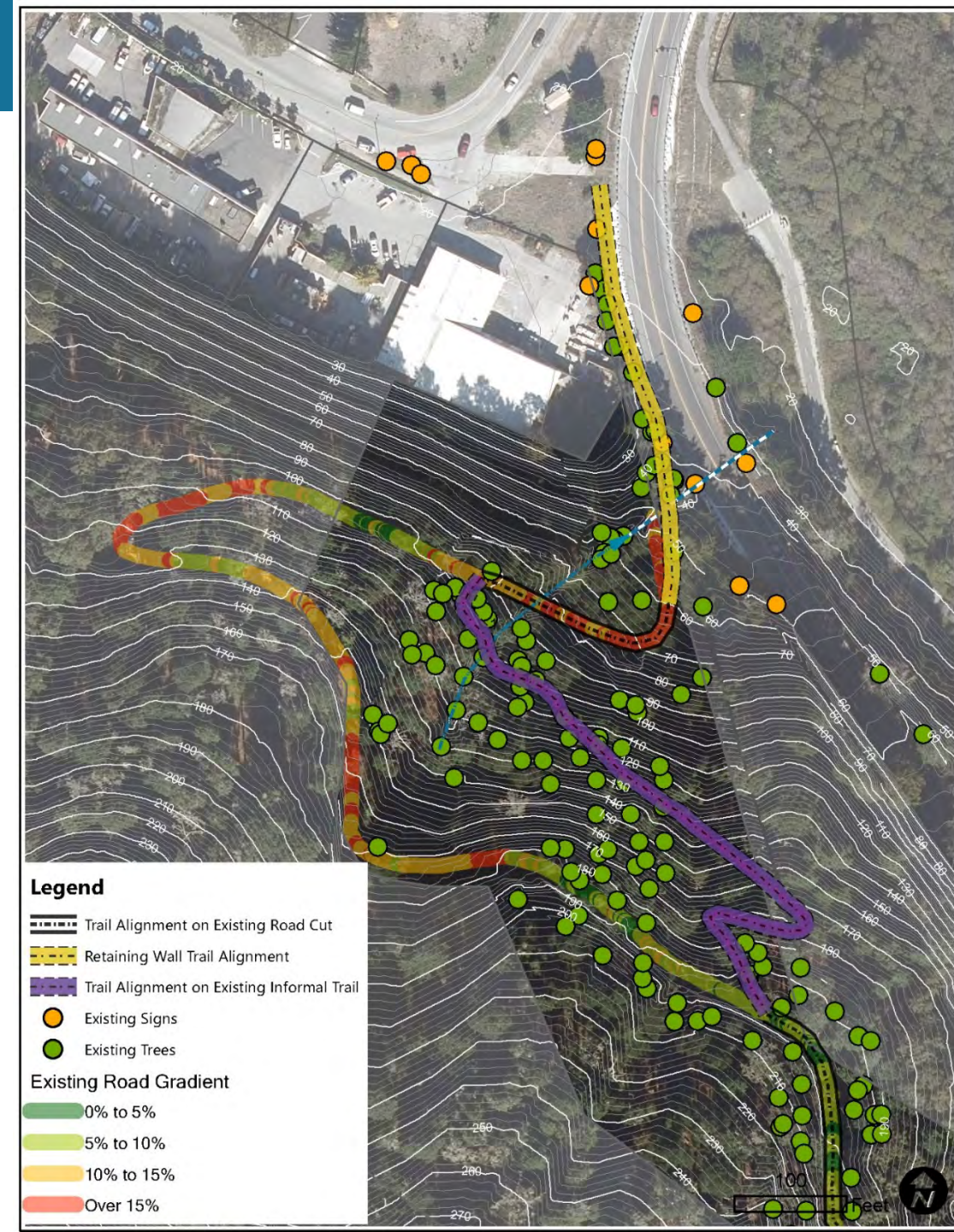
# Trail Design Options/Challenges in Caltrans ROW





# Northern Steep Slope Connection

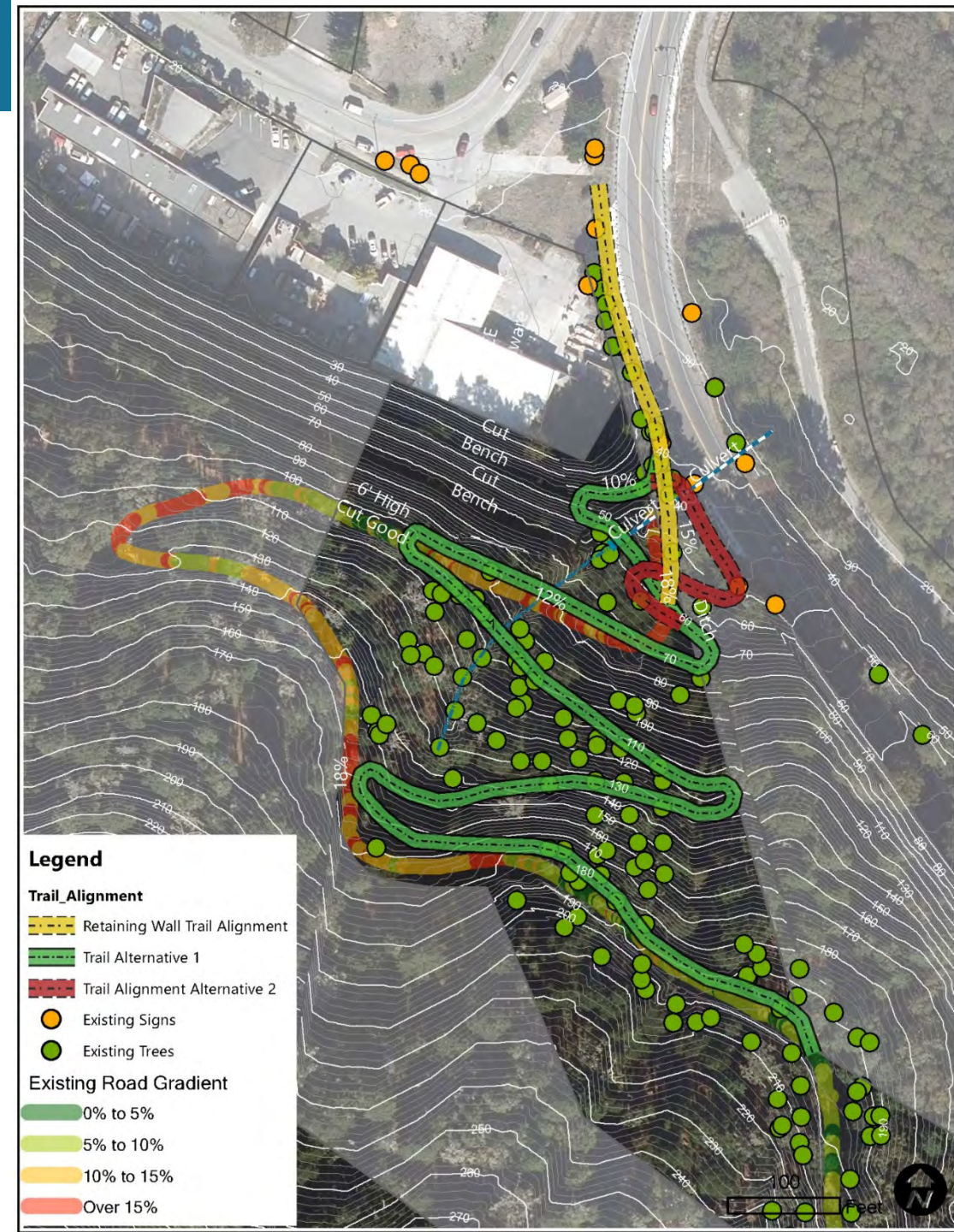
## 1. Steep Narrow Unpaved Trail (purple line)





# Northern Steep Slope Connection

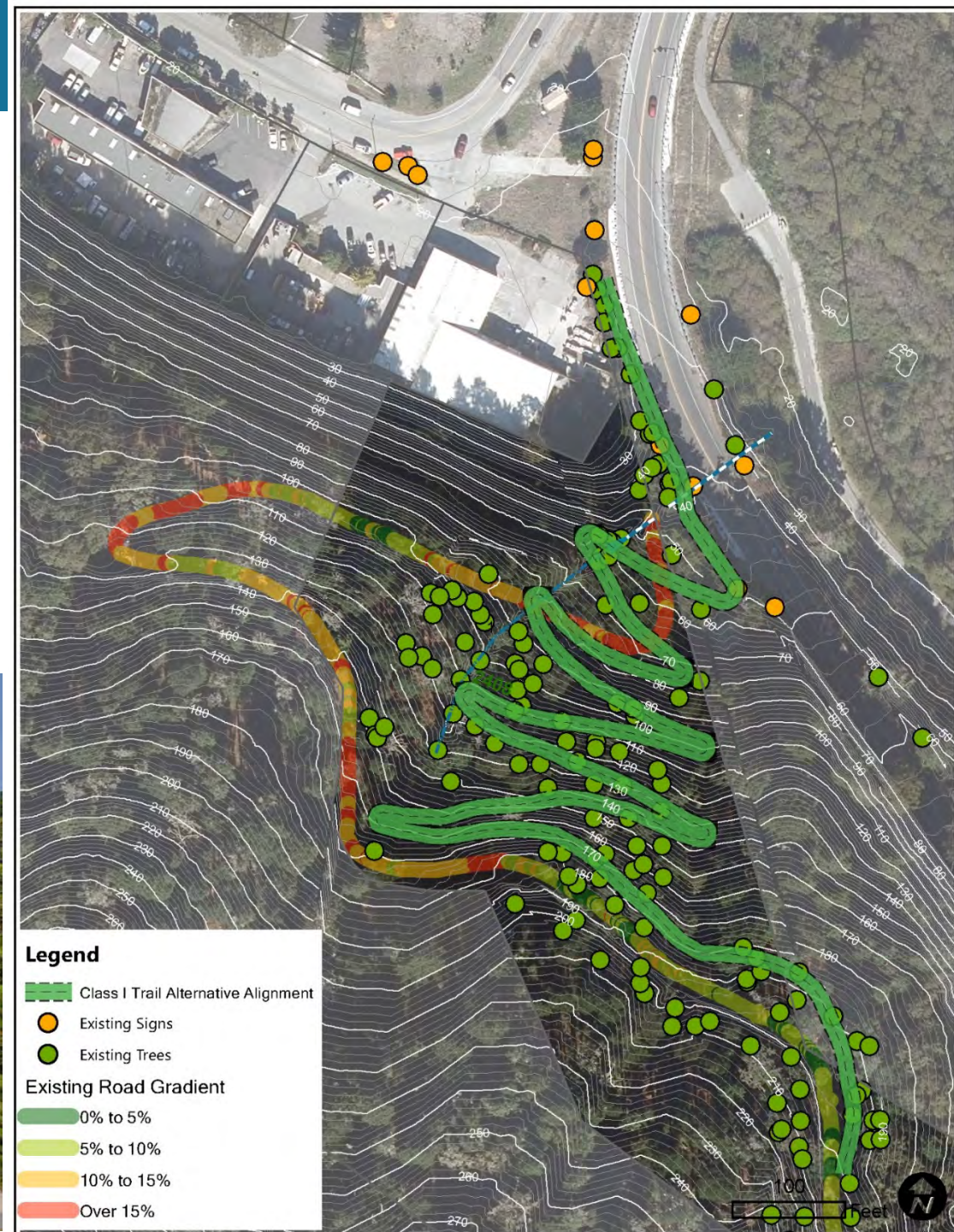
## 2. Improved Multi-Use Trail (green line, red option)





# Northern Steep Slope Connection

## 3. Paved ADA Compliant Trail (green line)

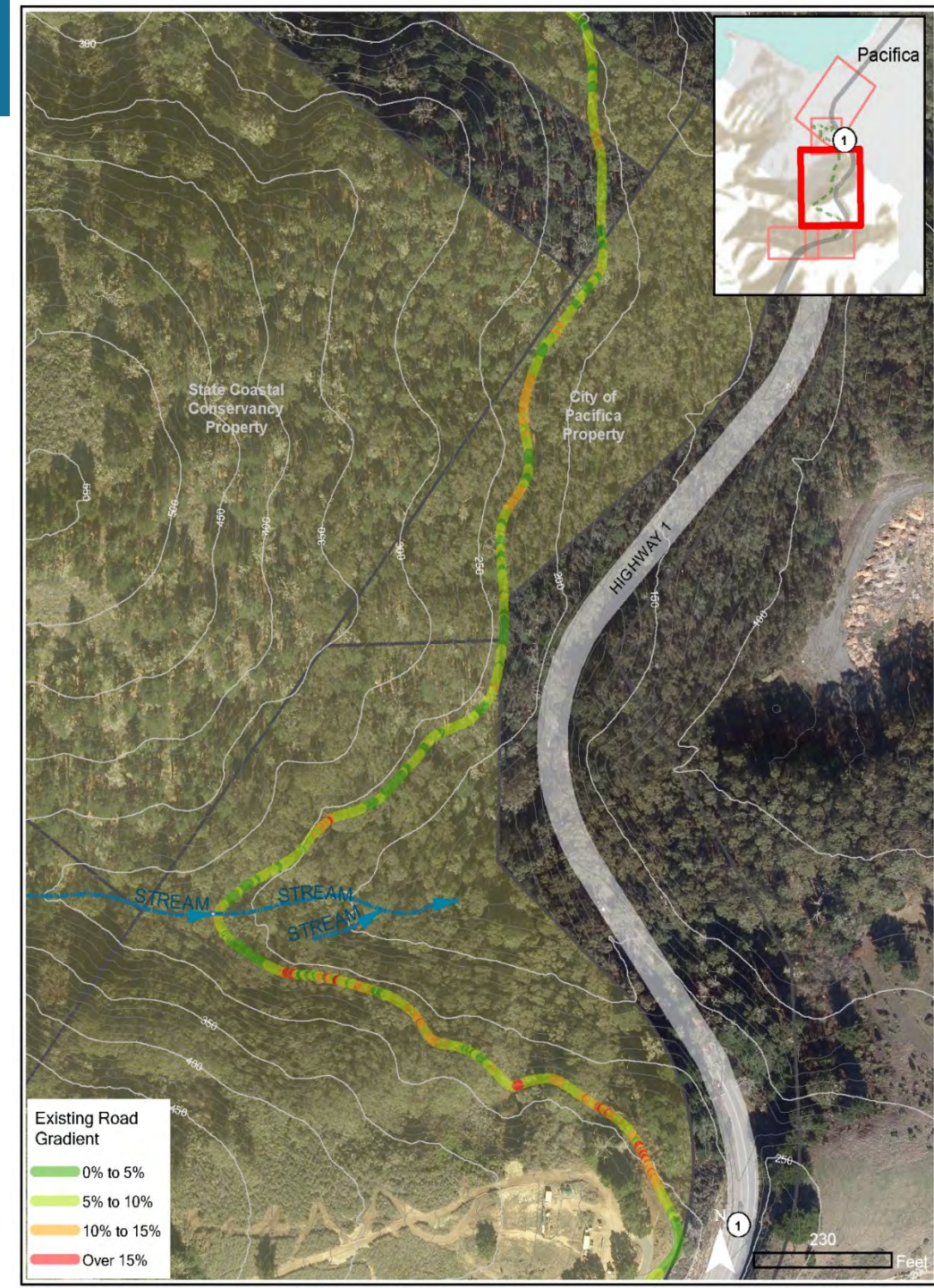




# Central Area Roadway Alignment

Multi Use Recreational Trail Upgrade (*easy*)

Paved ADA-Compliant Trail Upgrade  
(*challenging but possible*)





# Southern Steep Slope Connection

## Create a new connection:

- Multi Use Recreational Trail or
- Paved ADA-Compliant Trail

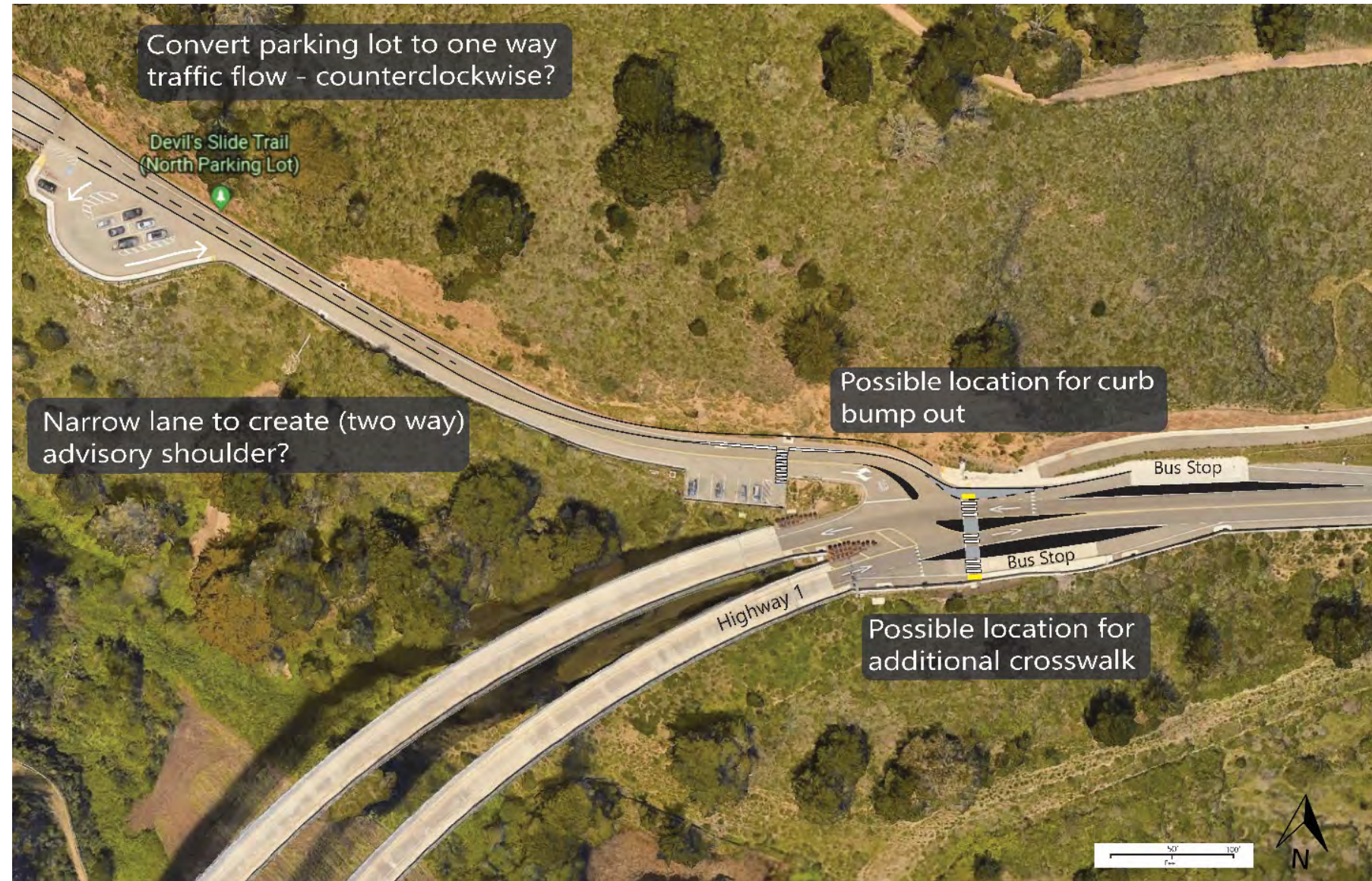




# Southern On-Street Connection

## Options for improved connectivity:

- Add curb bump-out
- Add crosswalk
- Narrow parking access lane for better bike/ped accommodation
- Convert parking to 1 way traffic flow





A photograph of a forest path. In the foreground, a large tree trunk with rough, textured bark is visible. In the background, a bird is perched on a branch, and a path leads into a dense forest.

# Trail Design Options and Considerations





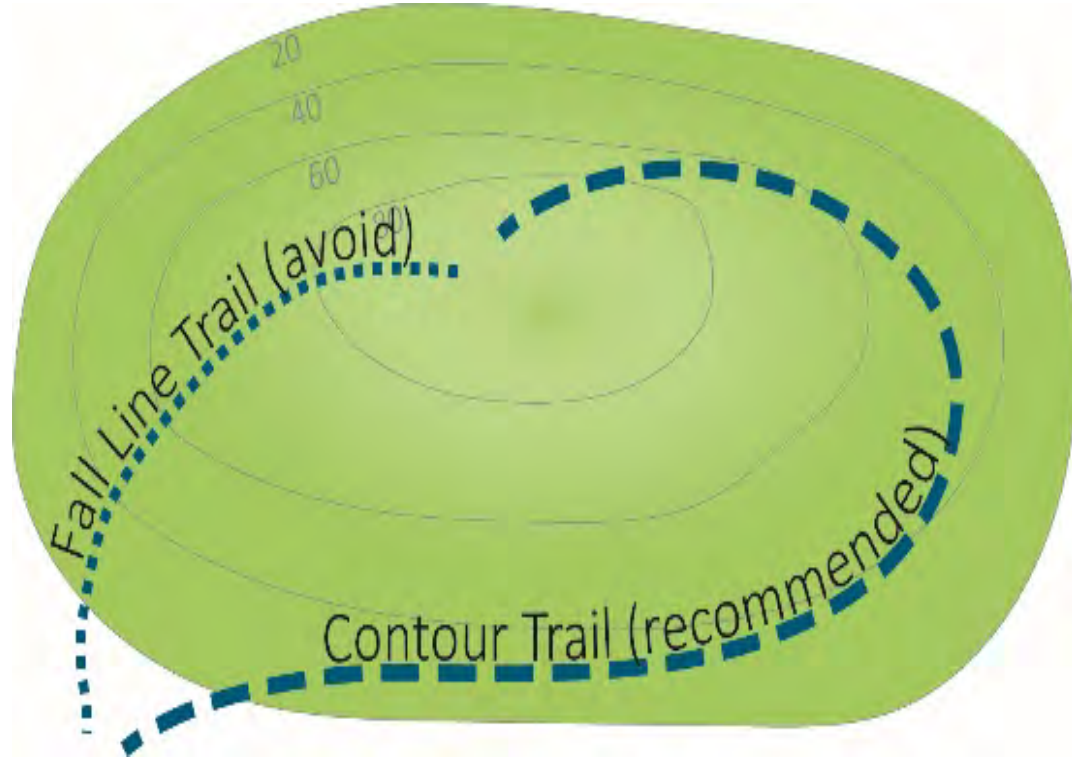
# Trail User Types and Trail Design Preferences

1. Wheelchair users and others with mobility constraints
2. Casual walkers/hikers
3. Serious hikers and trail runners
4. Road bicyclists
5. Mountain bicyclists
6. Equestrians

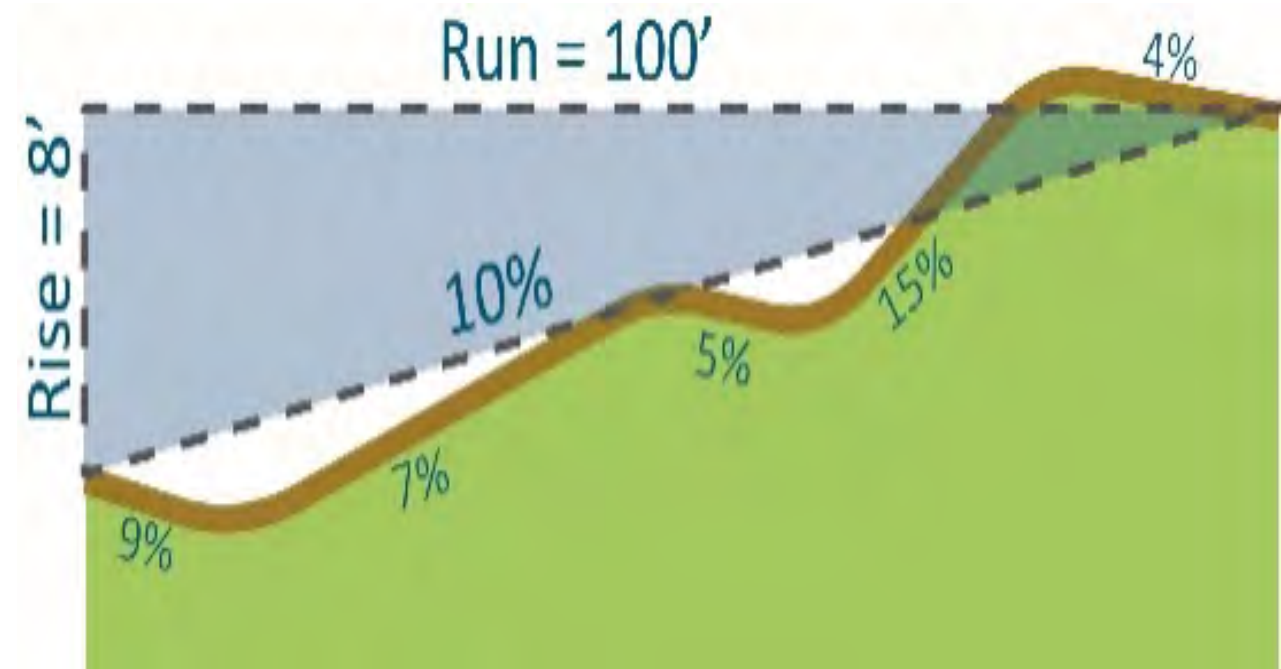




# Trail Design Principles



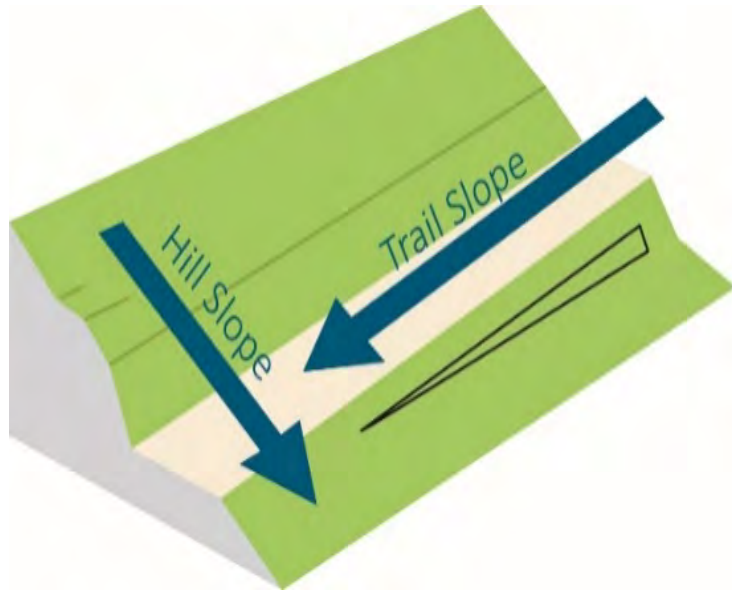
Follow natural contours



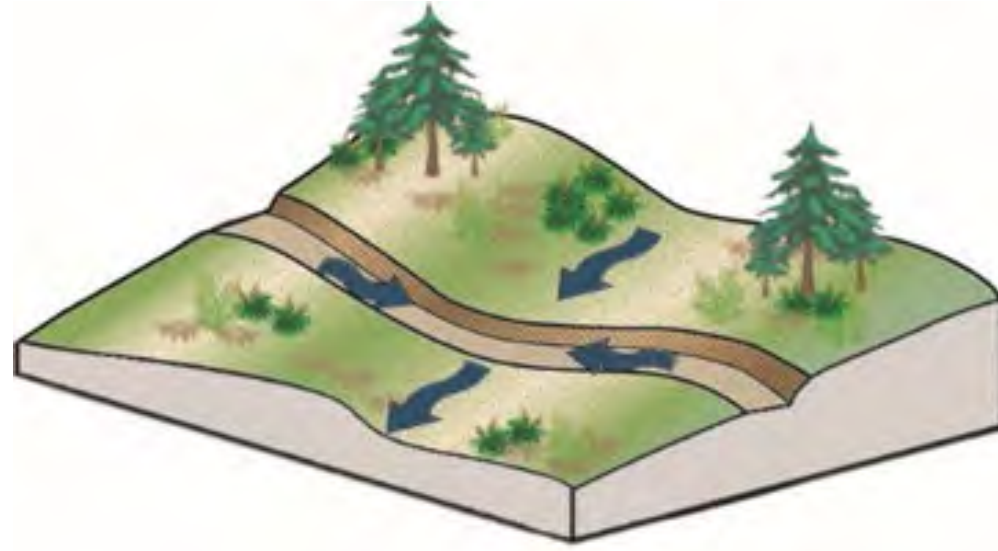
Plan for a maximum 10% average grade



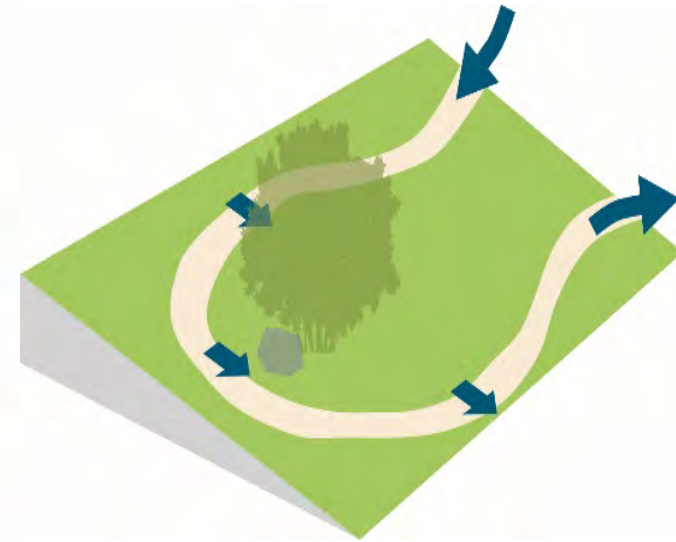
# Trail Design Principles



Follow the “half rule”  
for max. trail gradient



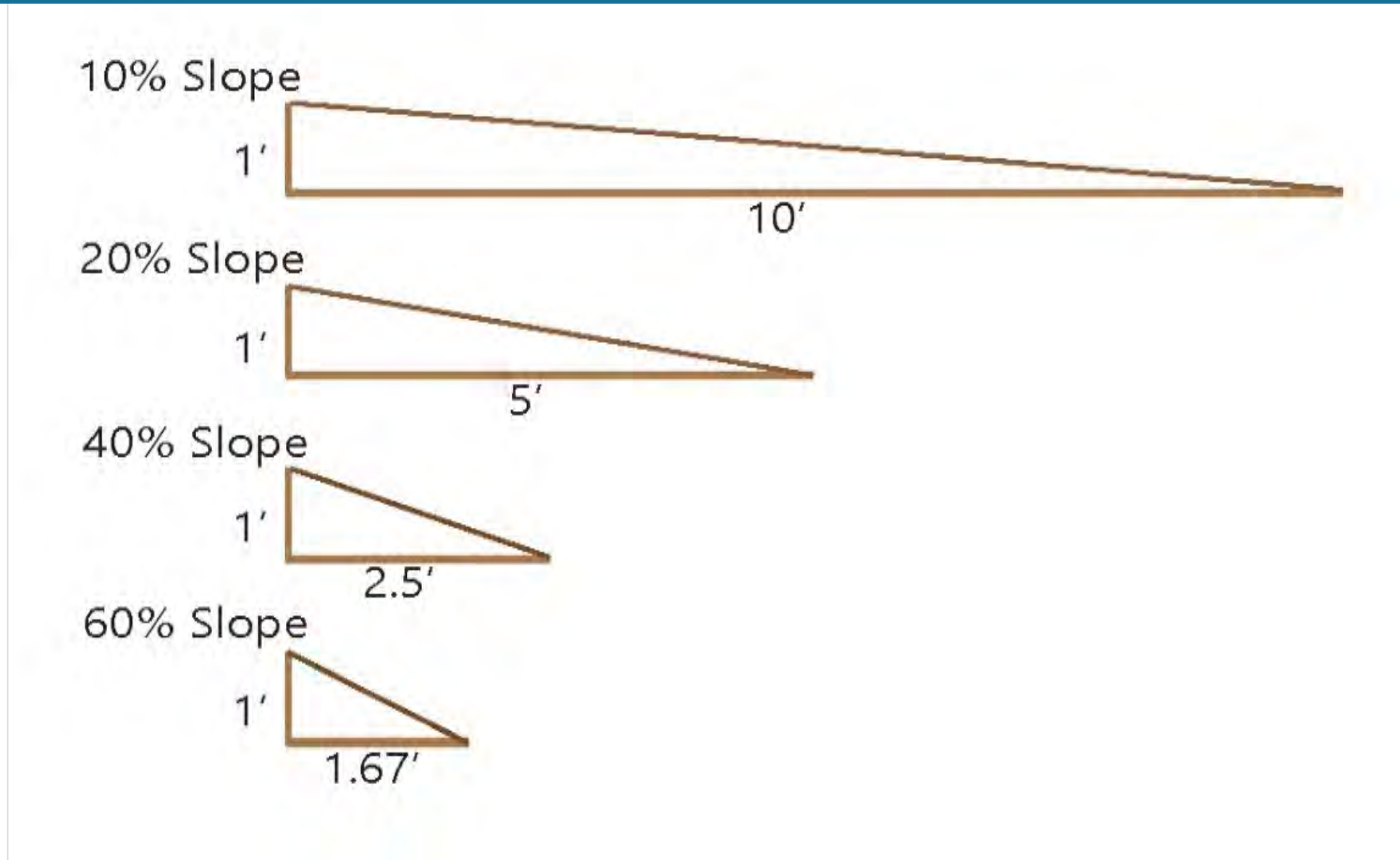
Layout a rolling trail  
following natural drainages



Use climbing turns –  
avoid switchbacks



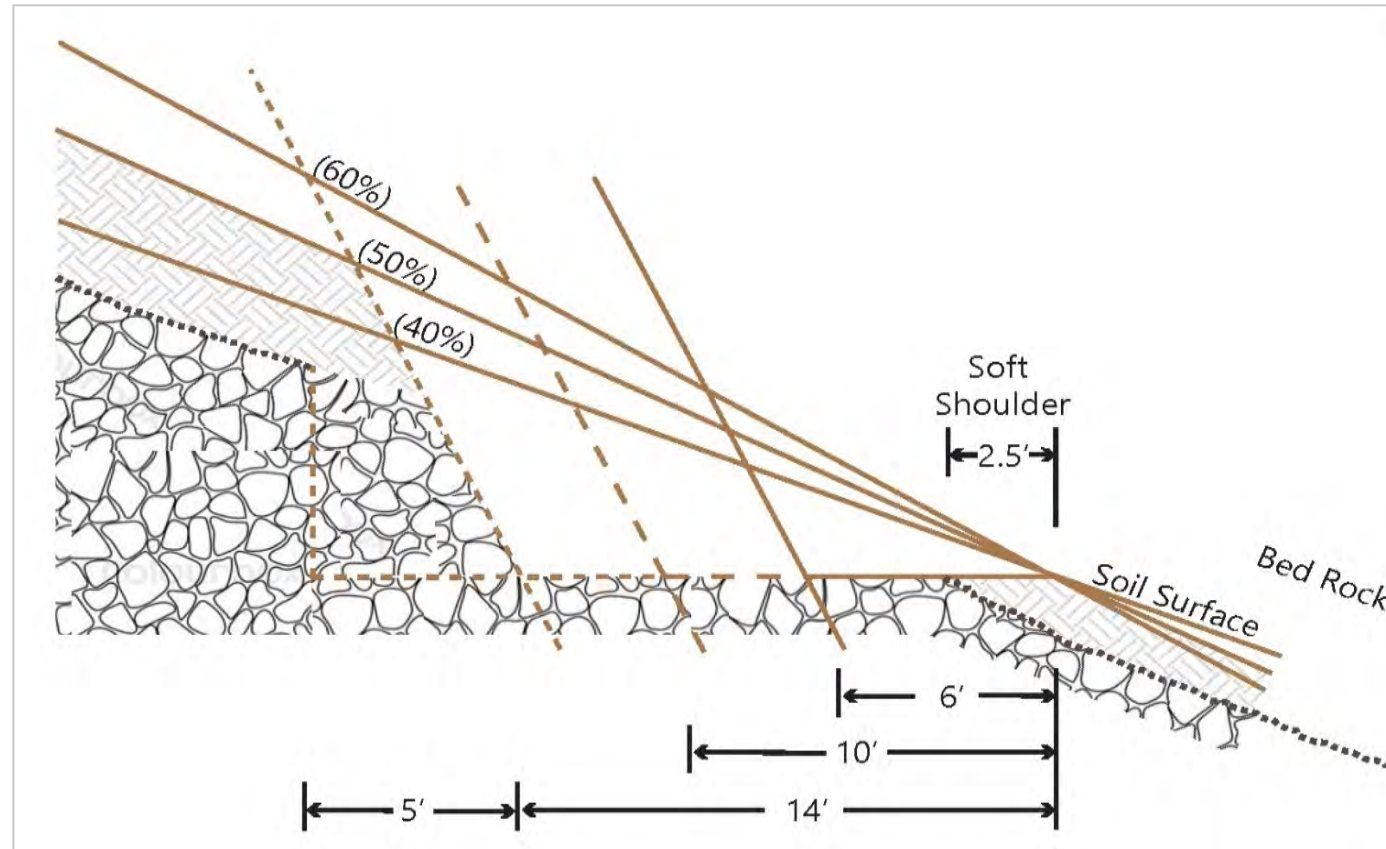
# Trail Width and Gradient vs Grading/Disturbance



Relative Trail Length at Different Gradients

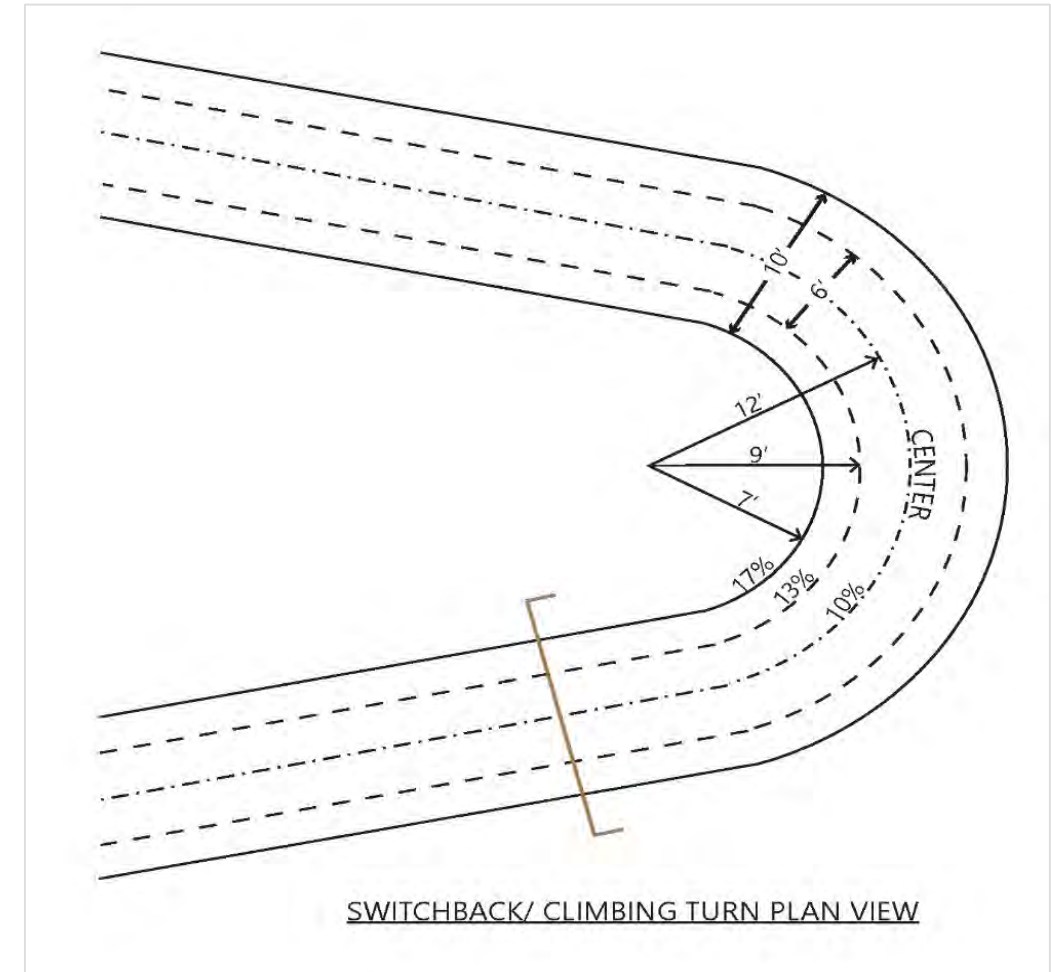
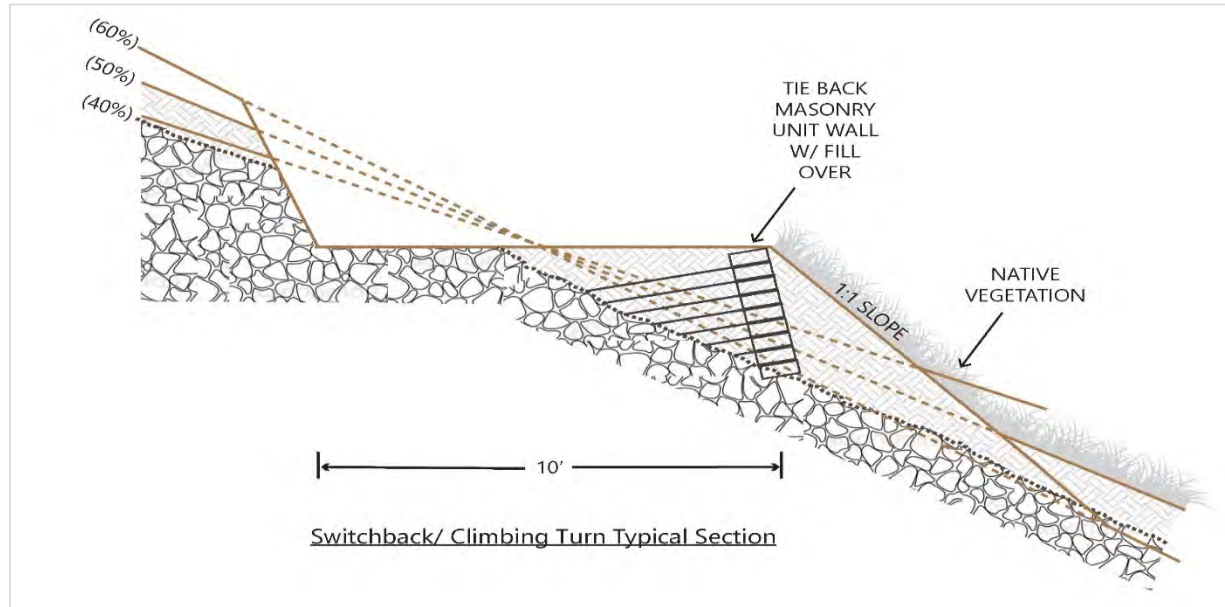


# Trail Width and Gradient vs Grading/Disturbance





# Switchbacks and Turns





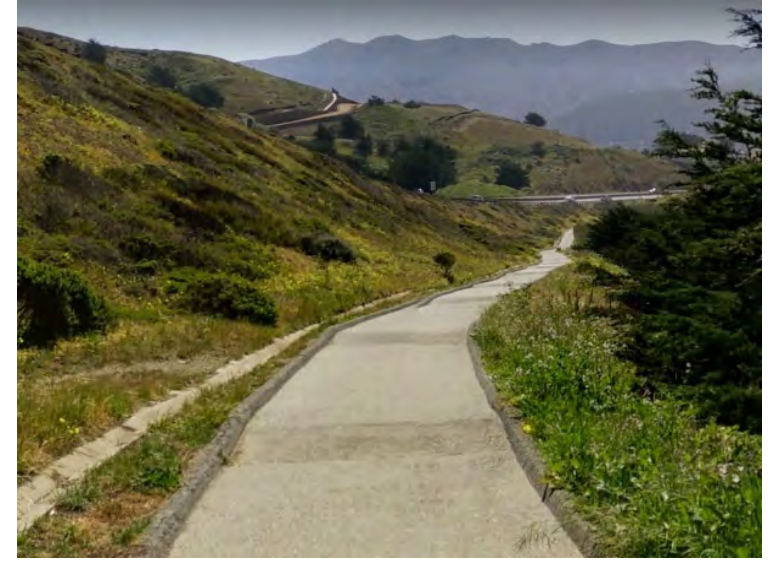
# Trail Surface Options



Native Soil



Improved Surface



Paved





# Retaining Walls



Reinforced Concrete



Concrete Masonry Unit



Timber "Sutter Wall"



Stacked Rock

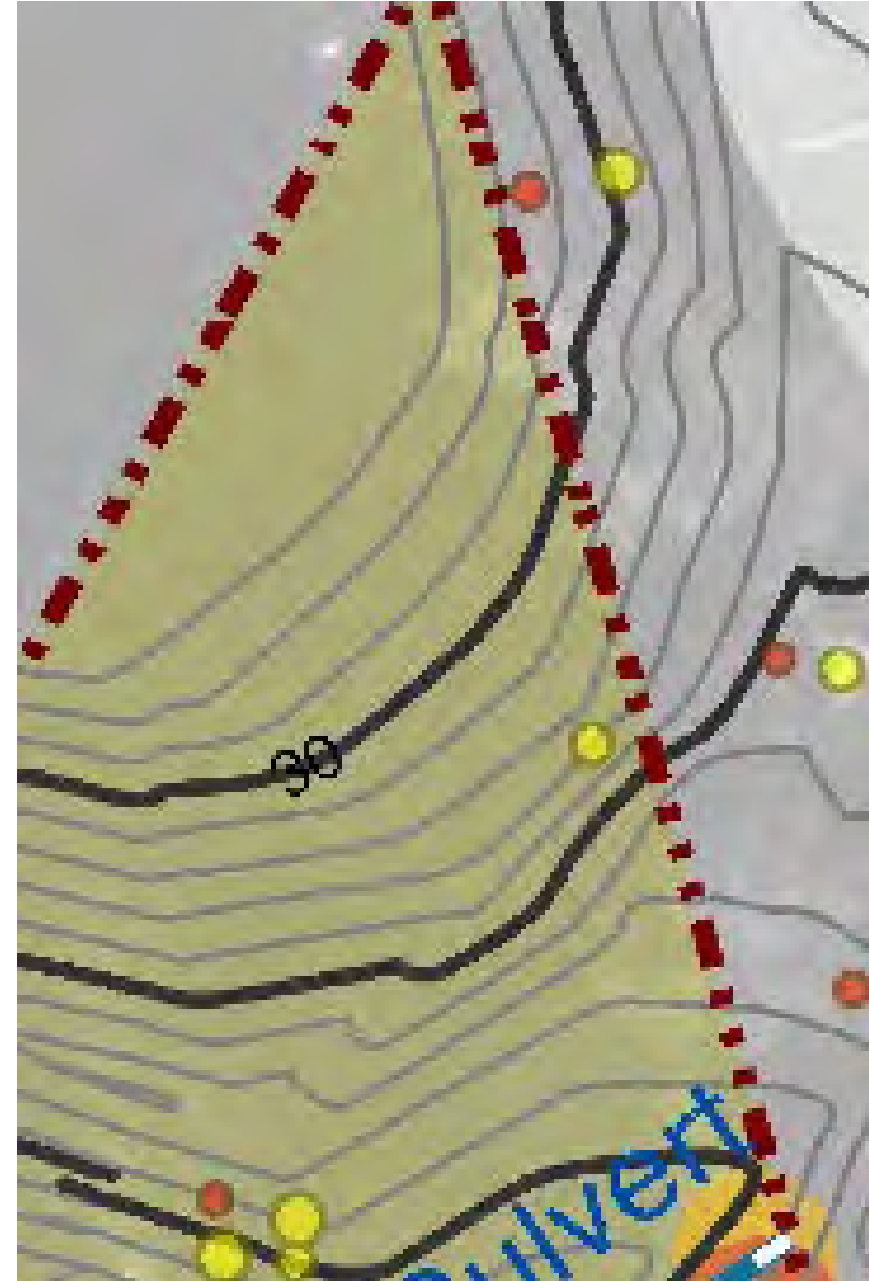
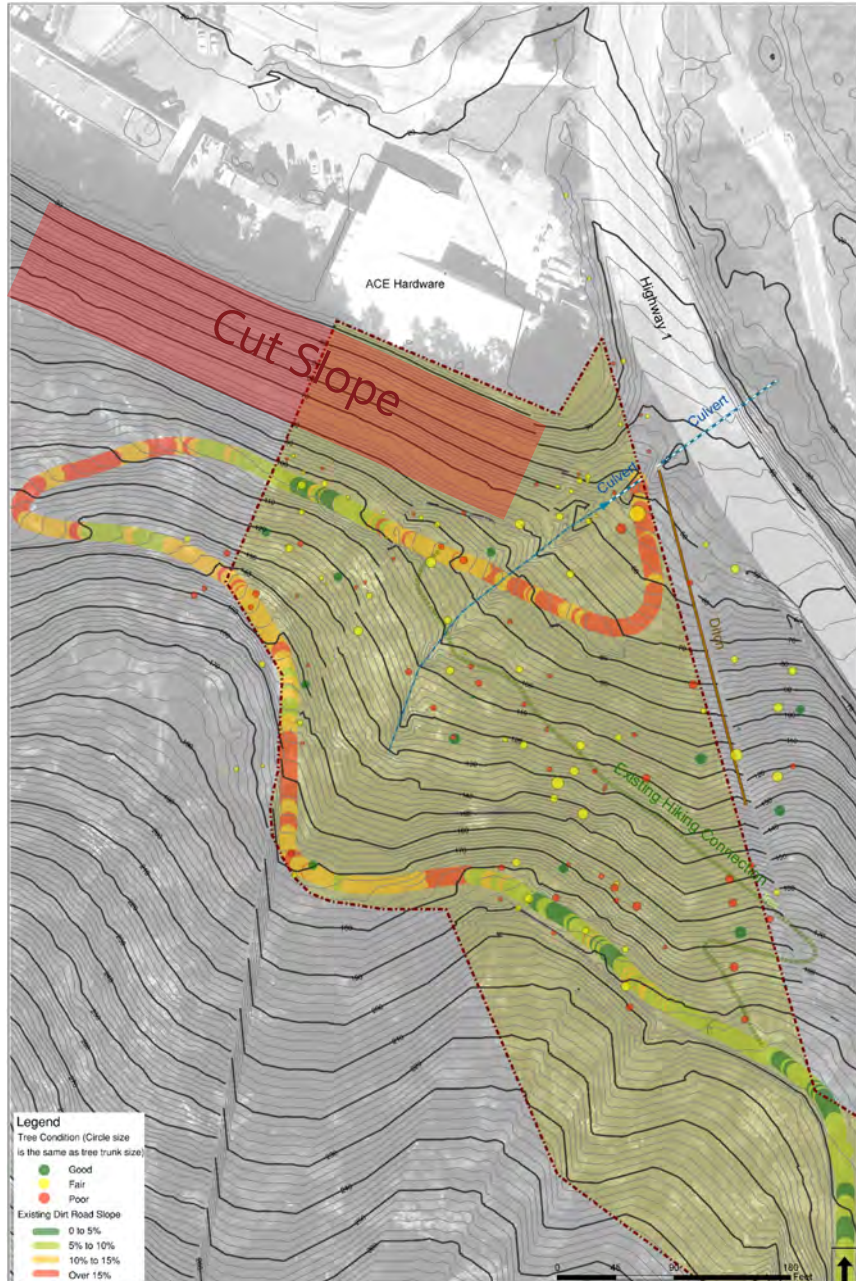


# Breakout Exercise – 45 min

- Approximate even distribution to tables
- Each table has reference guide to trail design considerations and an enlarged base map for the Northern Steep Slope portion
- Study and mark-up a base map to configure a trail up the hill
- Measurement tools for laying out a trail at various gradients are on table
- Record questions, comments, ideas, preferences
- Chose a representative to report out results



# Exercise









# Next Steps for the Project

- Review Public Input Results and begin to Draft Conceptual Designs
  - *Late October/early November*
- Present Conceptual Designs at 2<sup>nd</sup> Public Workshop
  - *Late November, early December*
- Review 2<sup>nd</sup> Round Public Input Results with Project Advisory Team
  - *Early January*
- Draft Preferred Conceptual Design and Costs
  - *March*



# Q & A



**TrailPeople**

Landscape Architects and Planners

[www.PedroPointCoastalTrail.com](http://www.PedroPointCoastalTrail.com)