



Welcome to the Muir Woods Road Improvement Project Alternatives Meeting

April 18, 2017

Project Partners

- ◆ Federal Highway Administration – Central Federal Lands Highway Division
- ◆ County of Marin
- ◆ National Park Service – Golden Gate National Recreation Area
- ◆ California Department of Parks and Recreation



Purpose of Meeting

- ◆ Learn about the Muir Woods Road Improvement Project
- ◆ Learn about the alternatives for Muir Woods Road improvements
- ◆ Provide an opportunity to ask questions of the project team
- ◆ ***Give your input ***

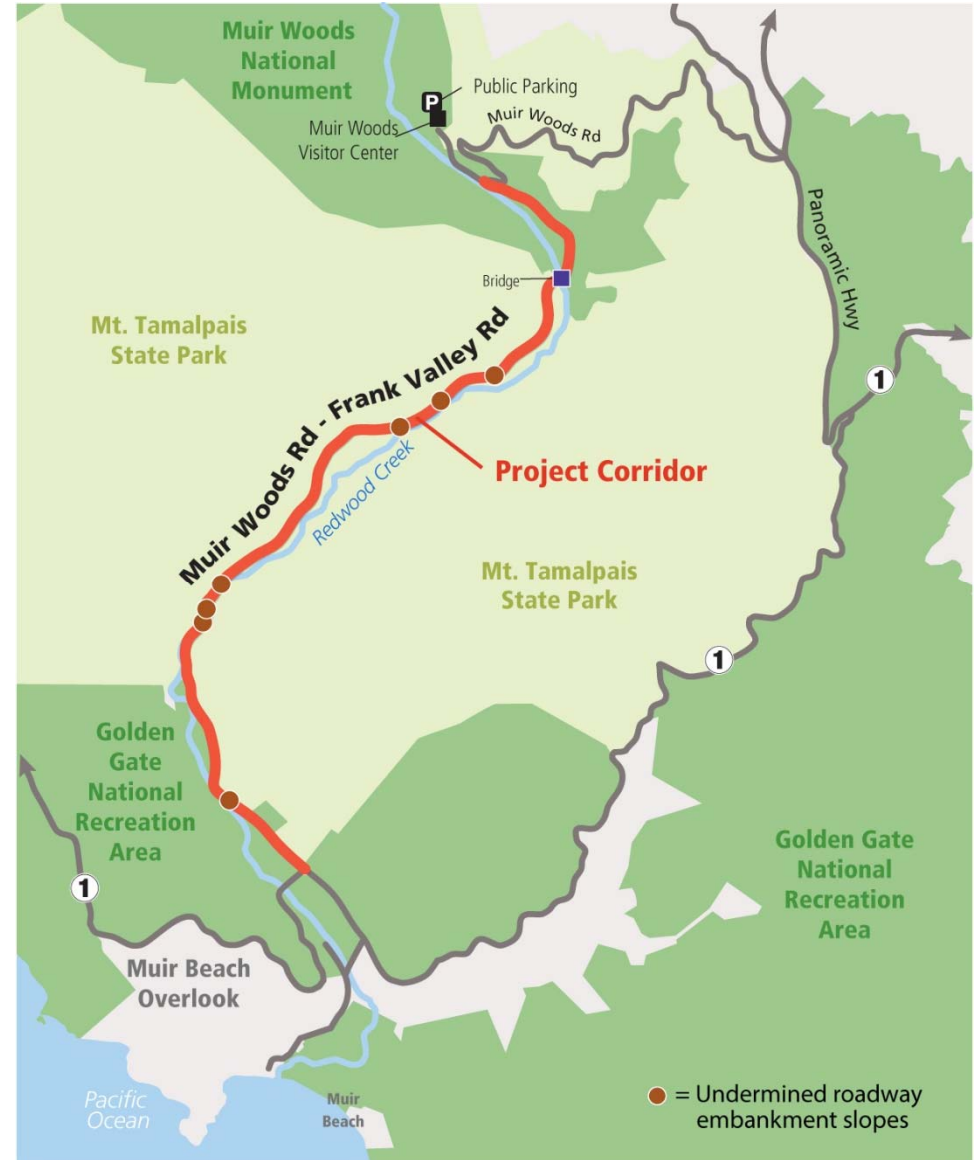


Agenda for tonight

- ◆ Introduce the project
- ◆ Review the roles and responsibilities
- ◆ Present the problems we are trying to solve
- ◆ Review the suggested alternatives for road improvements
- ◆ Discuss the overall Muir Woods Road project schedule



Muir Woods Road Project Limits



Roles and Responsibilities

FHWA-CFLHD

- Deliver, design, and construct the project
- Develop plans, specifications, and estimates
- Advertise and award the construction contract
- Administer contract during construction
- Lead agency for NEPA compliance

County of Marin

- Applicant for the project
- Owner maintaining agency
- Lead agency for CEQA compliance
- Provide technical information and data
- Review plans and environmental documents

NPS and State Parks

- Provide technical information and data
- Review plans and environmental documents



Central Federal Lands Projects



Central Federal Lands Projects



Identified Issues

- ◆ Roadway embankments have been eroded and undermined
- ◆ Slope failures have reduced the road to one lane
- ◆ Pavement is damaged from poor drainage
- ◆ Road widths vary from 18 feet to 24 feet



Identified Issues

- ◆ Narrow lanes make it difficult for vehicles to pass bicyclists
- ◆ Vehicles driving or parking off-road have damaged riparian vegetation, leading to increased sedimentation in Redwood Creek
- ◆ Aging bridge has exposed bridge footings, deteriorating concrete, and corroded rebar



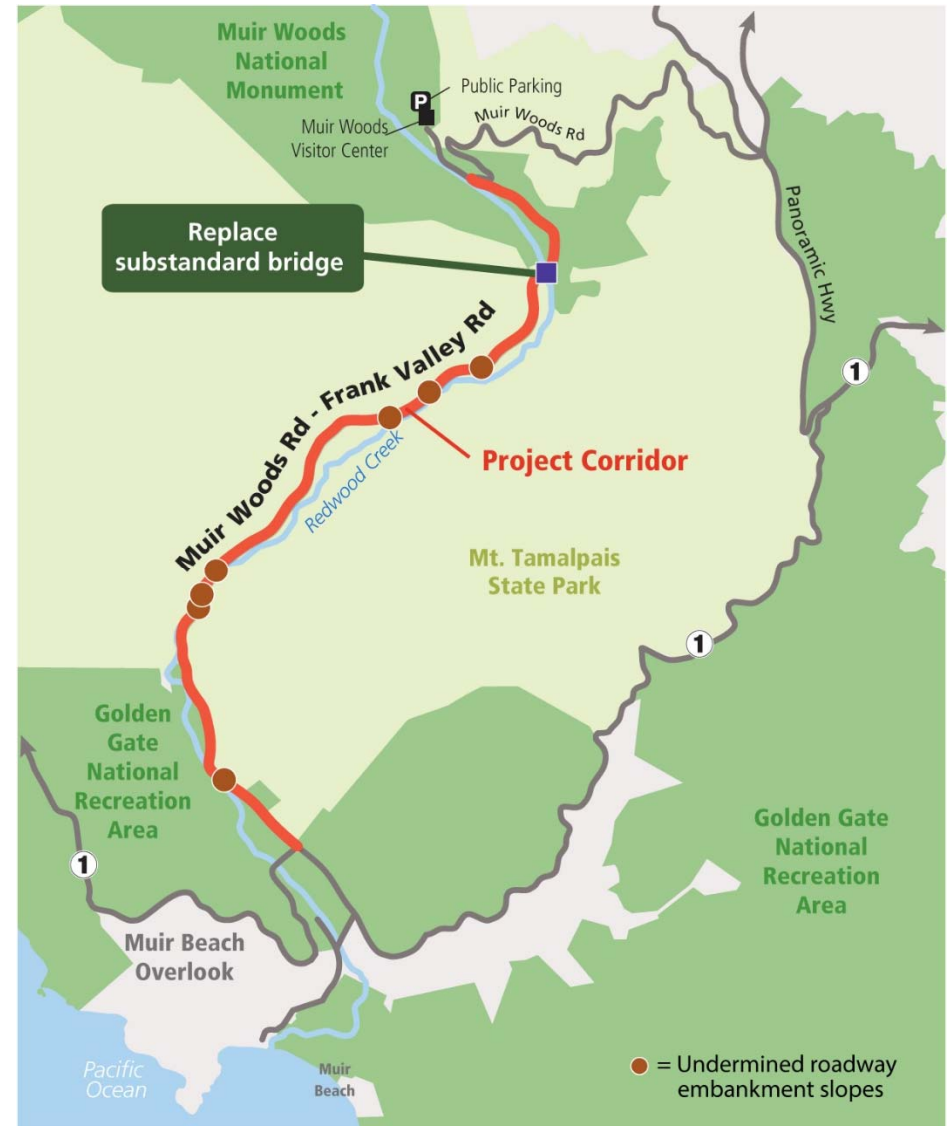
Project Description

Needed Improvements:

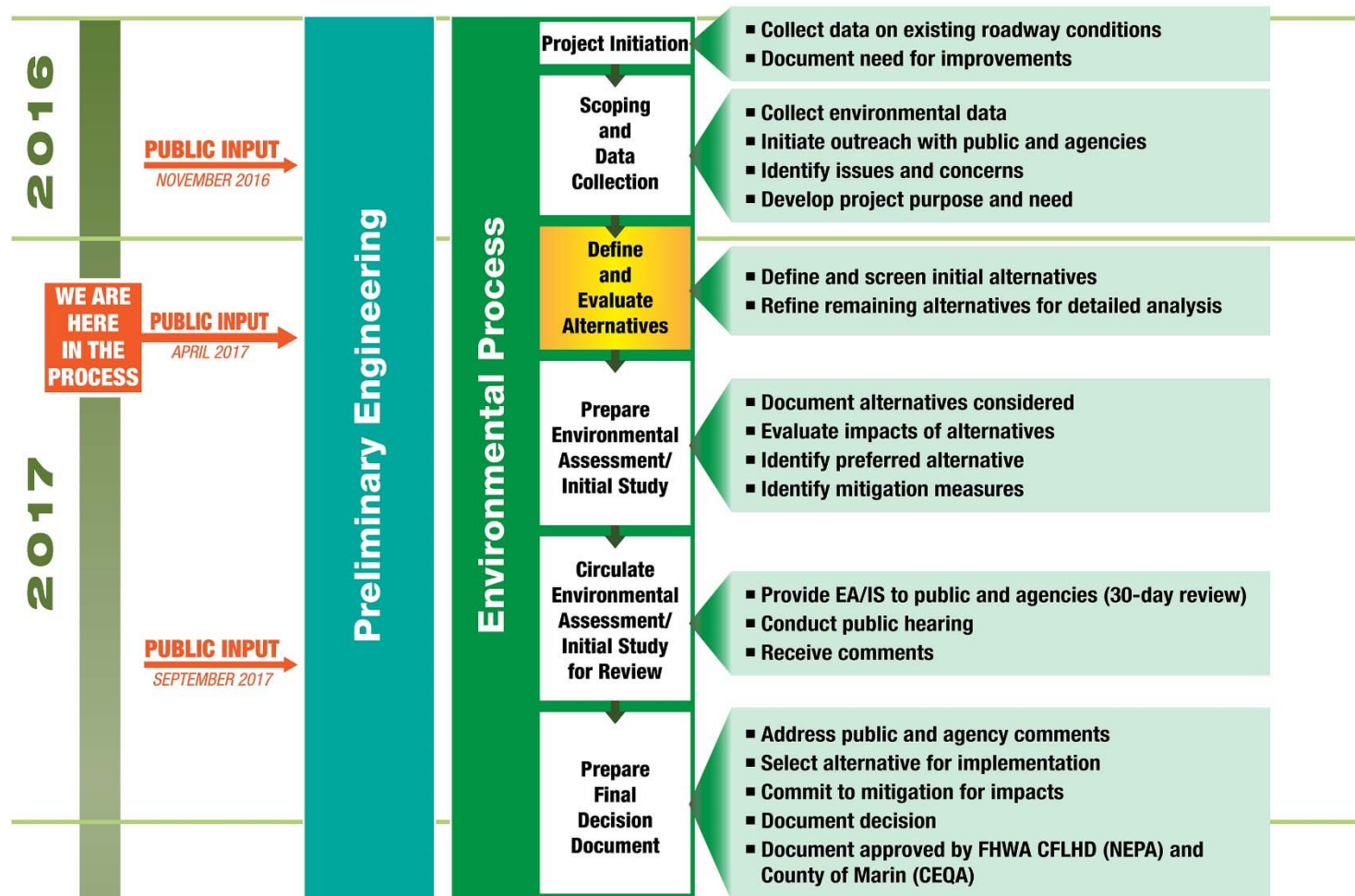
- Stabilize slopes and repair roadway in seven locations
- Rehabilitate the roadway to a consistent width
- Improve drainage by replacing deteriorating and substandard culverts
- Restore, rehabilitate, and resurface the road

Bridge Replacement:

- Replace existing substandard bridge with new structure that has two lanes, shoulders, and a sidewalk

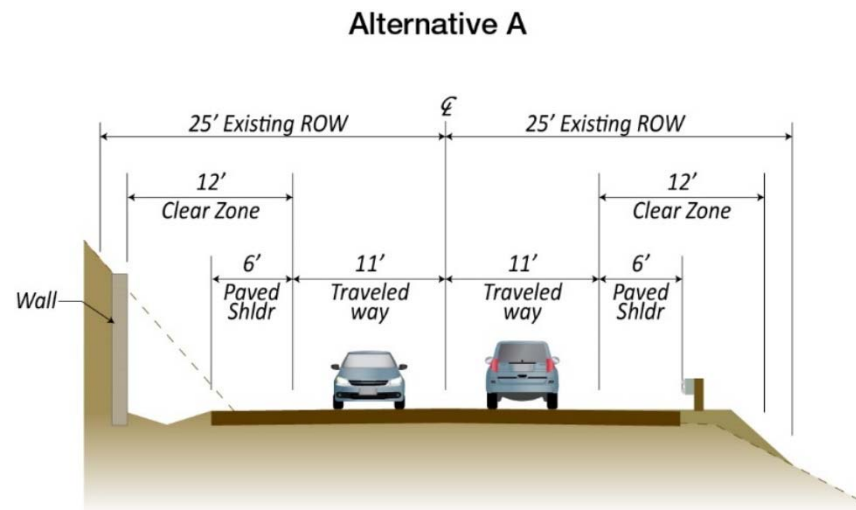


Environmental Process



Alternative A: Widen Road to Federal Design Standards

- ◆ Widen roadway to create two 11-foot-wide lanes
- ◆ Add two six-foot-wide shoulders
- ◆ Establish a 12-foot to 16-foot-wide clear zone from the edge of the travel lane
- ◆ Increase road footprint from current 18 feet to 24 feet to proposed 46 feet to 54 feet



Alternative A:

Widen Road to Federal Design Standards

Positive Impacts

- Increases safety for vehicle traffic
- Increases safety for bicycle traffic

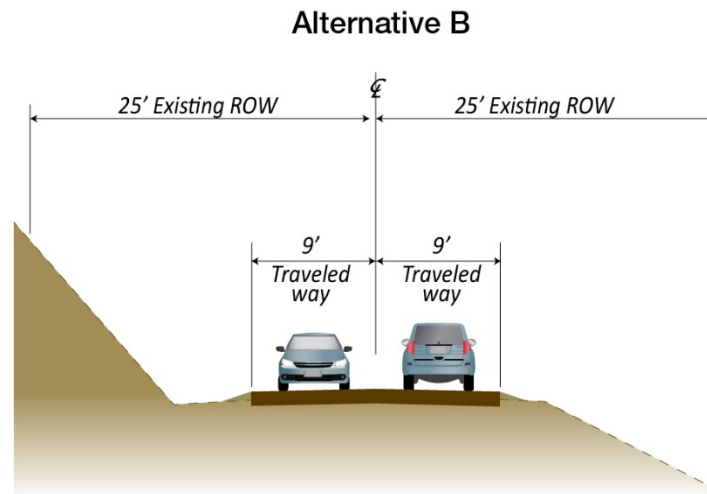
Negative Impacts

- Requires widening of two bridges
- Requires widening into hillside
- Results in **significant impacts** to natural resources
- Requires Marin County to acquire additional right of way from NPS and State Parks



Alternative B: Reduce Roadway Width

- ◆ Narrow the roadway to a consistent 18-foot width from the existing 18- to 24-foot-width, including shoulders



Alternative B:

Reduce Roadway Width

Positive Impacts

- Reduces impervious area and the footprint of the road

Negative Impacts

- Would not allow for safe vehicle, pedestrian, or bicycle travel
- Increases potential for large vehicles to cross into on-coming traffic lane at tight turns
- Potential to increase of sediment to creek due to tires tracking off the pavement and on to unpaved shoulders
- Does not meet federal funding requirement of improving safety

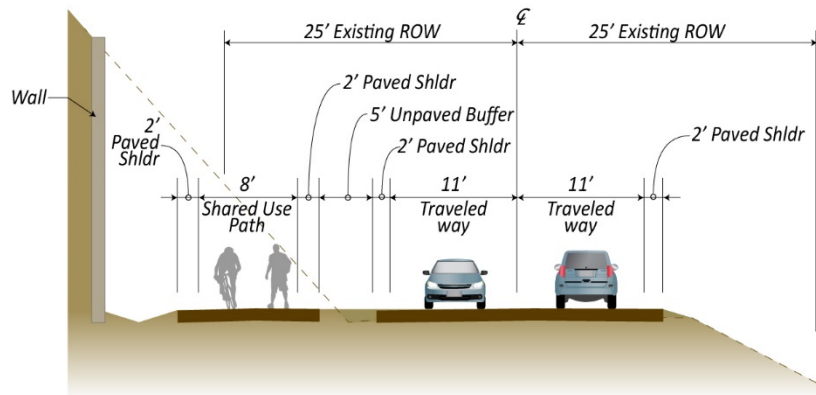


Alternative C: Add Dedicated Bicycle Facility

CALTRANS Class I Bicycle Facility

- ◆ Add dedicated 8-foot-wide shared use path adjacent to Muir Woods Road on one side
- ◆ Separate the shared use path from the travel lane with two-foot shoulders and a five-foot-wide unpaved buffer

Alternative C - CALTRANS Class I Bicycle Facility

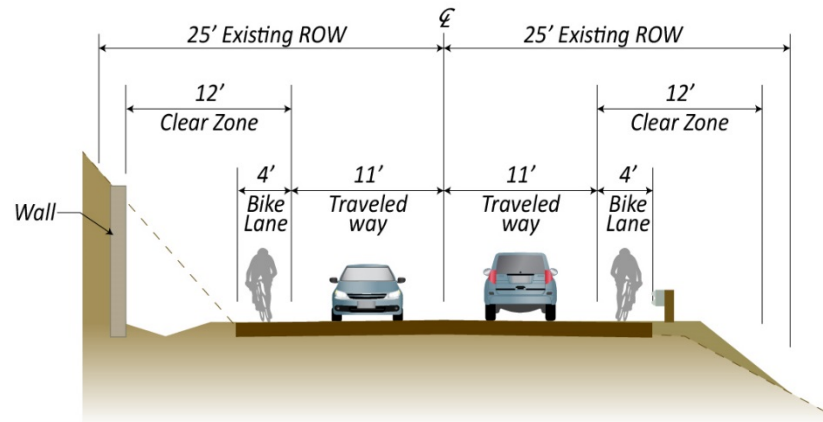


Alternative C: Add Dedicated Bicycle Facility

CALTRANS Class II Bicycle Facility

- ◆ Add dedicated 4-foot-wide shared use path adjacent to Muir Woods Road on both sides
- ◆ No buffer between path and travel lanes

Alternative C - CALTRANS Class II Bicycle Facility



Alternative C:

Class I and Class II Bicycle Facilities

Positive Impacts

- Improves bicycle and pedestrian safety and access
- Reduces bicycle/pedestrian and vehicle conflicts

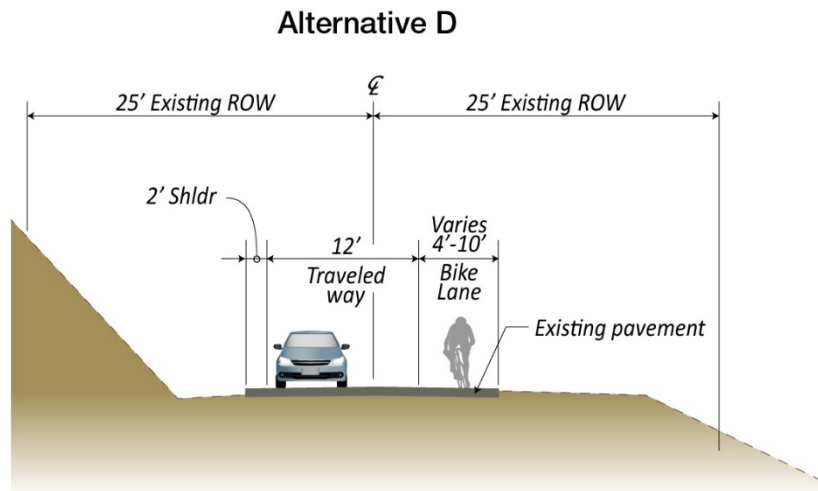
Negative Impacts

- Requires widening into the hillside, removing trees and vegetation, and constructing a wall
- Results in **significant impacts** to corridor natural resources
- Requires Marin County to acquire land from NPS and State Parks



Alternative D: Convert Road to a One-Way Facility

- ◆ Convert Muir Woods Road from Hwy 1 to Muir Woods National Monument (2.42 miles) from two-way traffic travel to a one-way road
- ◆ Reduce this one-way segment to a 12-foot-wide one-lane facility and use the remaining existing paved surface as a bicycle/pedestrian lane



Alternative D:

Convert Road to a One-Way Facility

Positive Impacts

- Improves bicycle and pedestrian safety and access
- Reduces bicycle/vehicle conflicts
- Eliminates need to widen the road
- Eliminates conflicts between on-coming traffic and larger vehicles

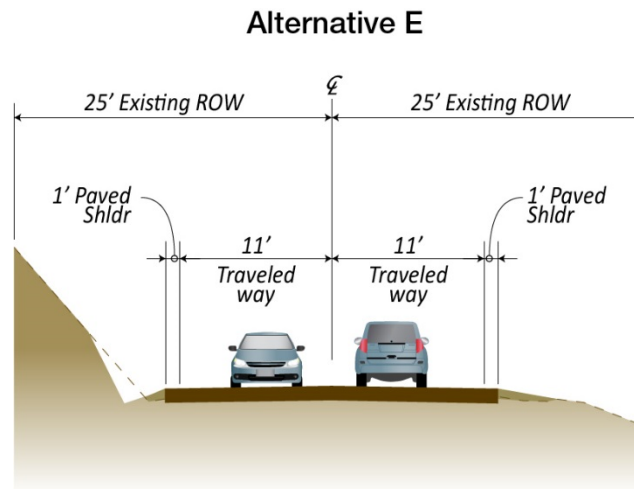
Negative Impacts

- Requires vehicles and buses to travel mountainous segment of Muir Woods Road
- Creates difficulty for 36-foot commercial vehicles to negotiate mountainous curves without crossing into on-coming traffic lane (Panoramic Hwy to Monument)
- Eliminates Muir Woods Road for use as an alternative route to Hwy 1 during closures and for emergency access



Alternative E: Widen Road to a Consistent 24-Foot Facility

- ◆ Widen lanes from the existing 18 feet to 24 feet to a consistent 24 feet, including one-foot shoulders on each side



Alternative E:

Widen Road to a Consistent 24-Foot Facility

Positive Impacts

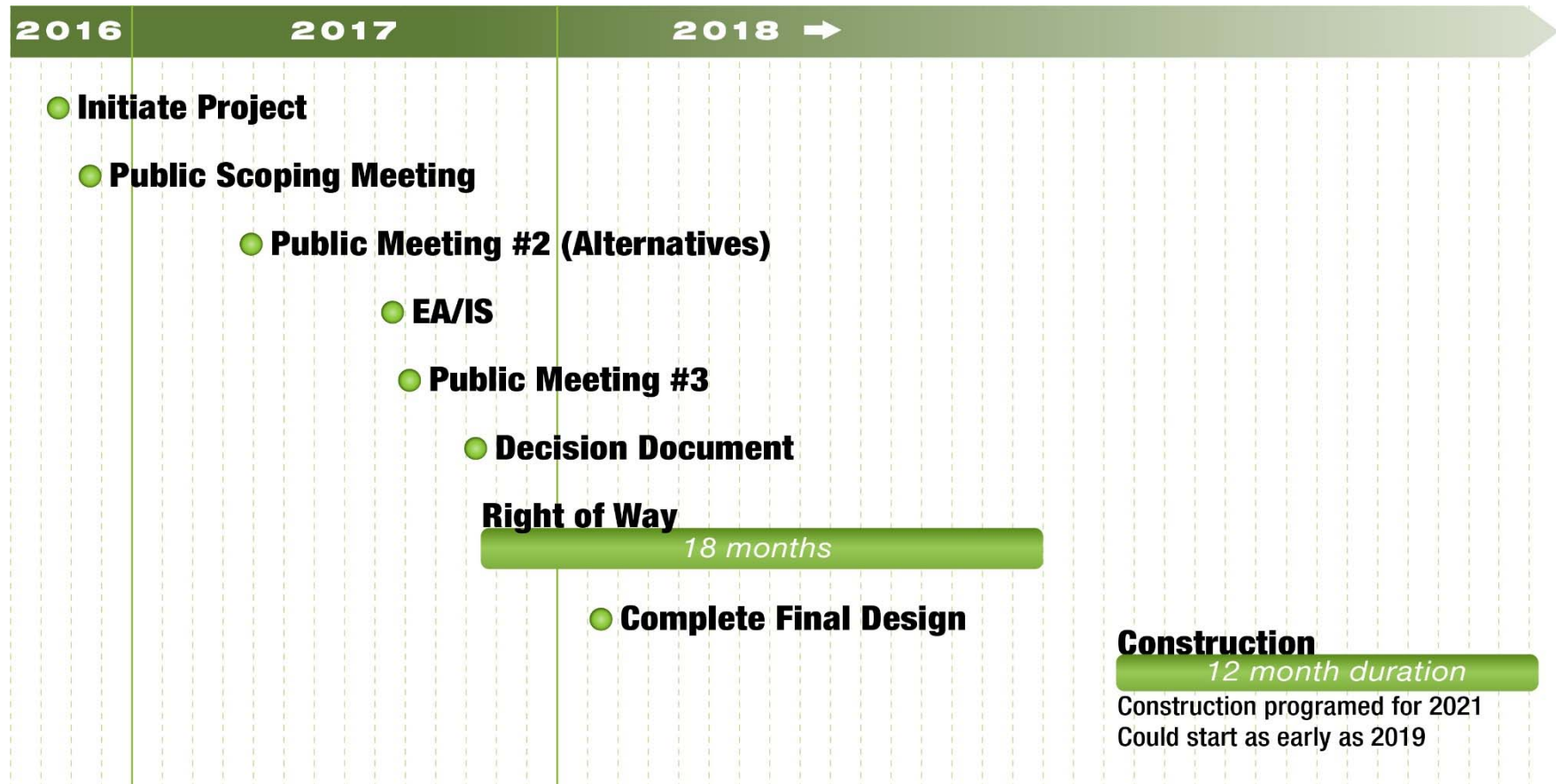
- Provides safer bicycle and vehicle travel
- Minimizes impacts on natural resources
- Meets expectations of drivers and bicyclists

Negative Impacts

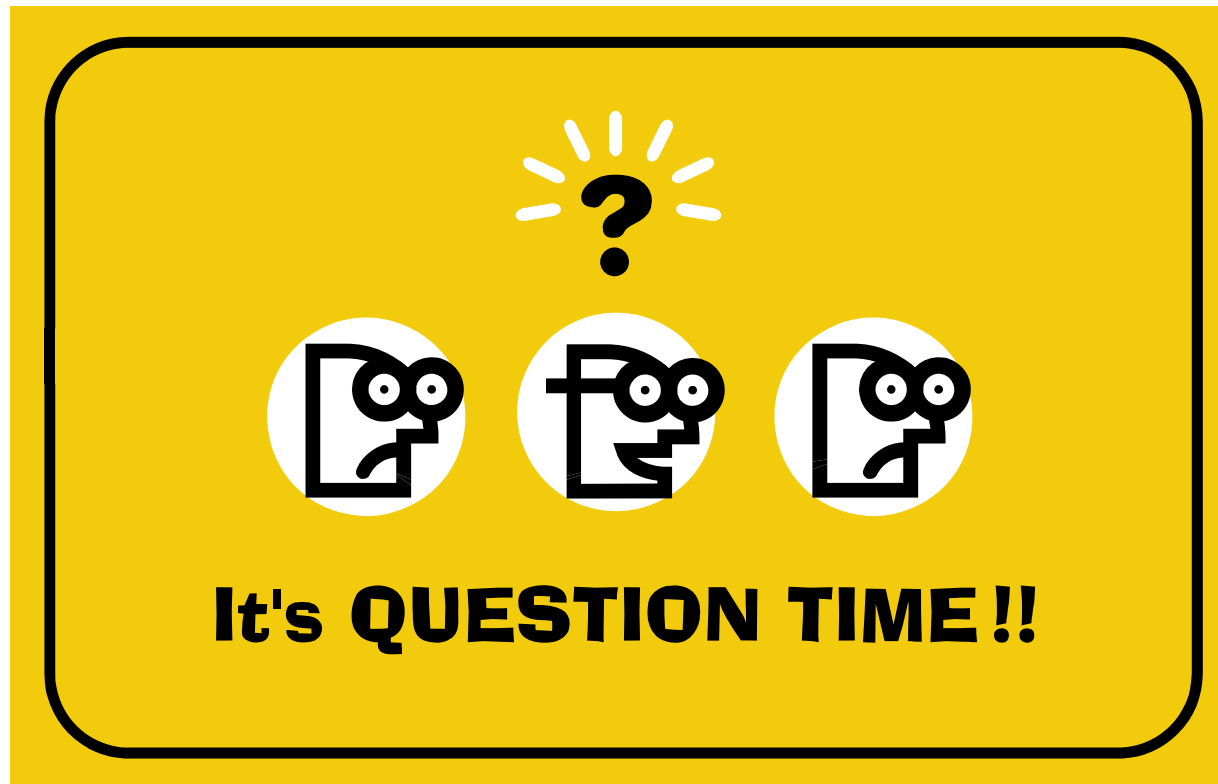
- Increases impervious area



Overall Project Schedule



Questions or Comments



Project Funding

◆ Road Deficiencies

- Degraded roadway
- Several embankment erosion sites have reduced functionality
- Culverts are at the end of their service life

◆ Bridge Deficiencies

- Structural concrete and steel deficiencies
- Bridge alignment does not meet current road standards
- Railings do not meet current safety standards
- Scour from the creek has undermined the structure

Road Project Funding

Total Cost: \$5.9 million
Federal Lands Access Program
Federal: 88.53%
Local: 11.47%

Bridge Project Funding

Total Cost: \$2.2 million
Highway Bridge Program
Federal: 88.53%
Local: 11.47%

