HIGHWAY 17 WILDLIFE PASSAGE AND RIDGE TRAIL IMPROVEMENTS

REGIONAL OPEN SPACE

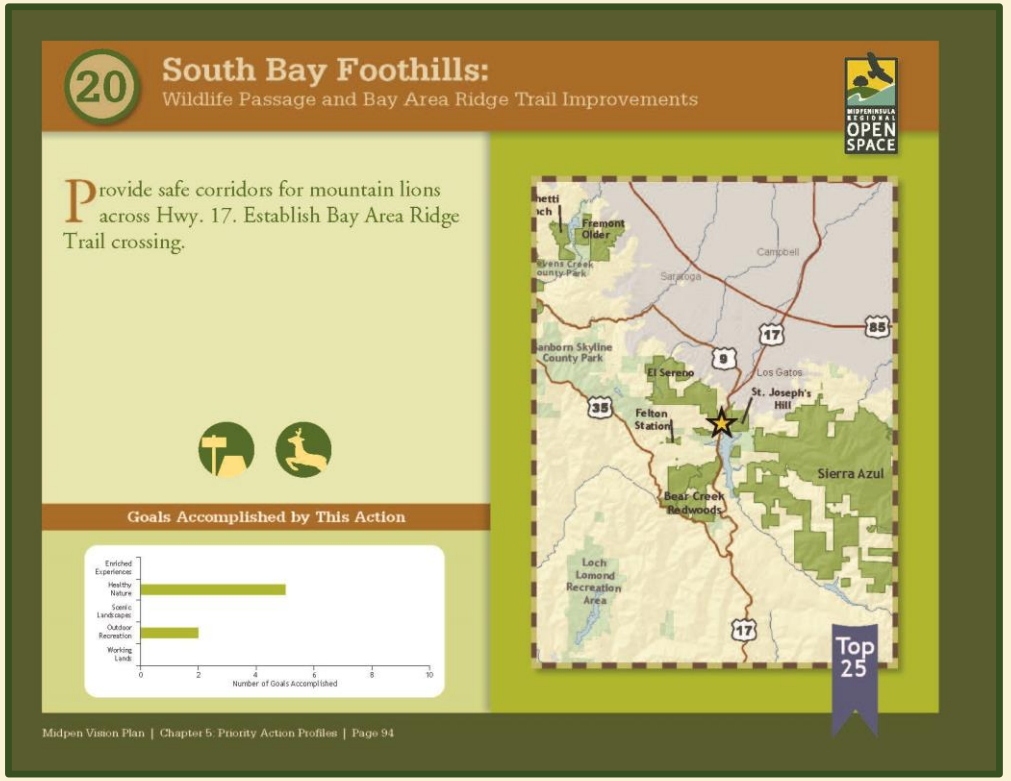
Photo: Kristi Britt

Agenda and Meeting Format

- 6:00-6:15 Welcome
- 6:15-6:45 Presentation
- 6:45-7:30 Open House
- 7:30 Meeting recap
- 8:00 Meeting conclusion

Highway 17 Midpen Project

- A top 25 priority project in the District's Vision Plan
- Measure AA#20: South Bay Foothills: Wildlife Passage and Ridge Trail Improvements
- In February 2016, Midpen began a Feasibility Study

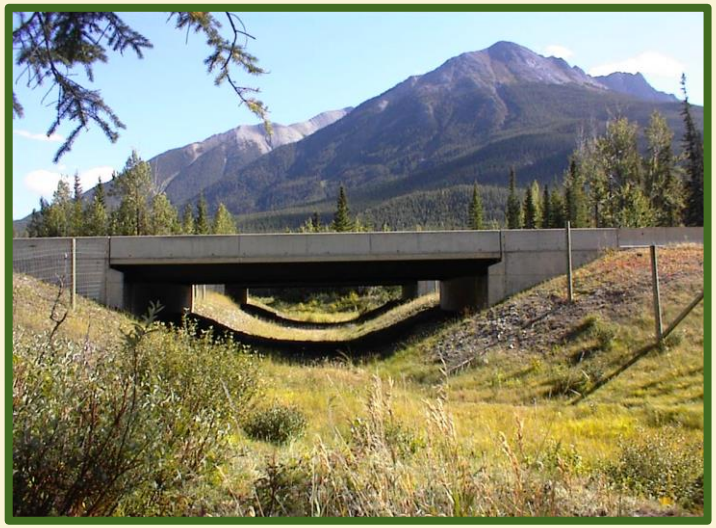


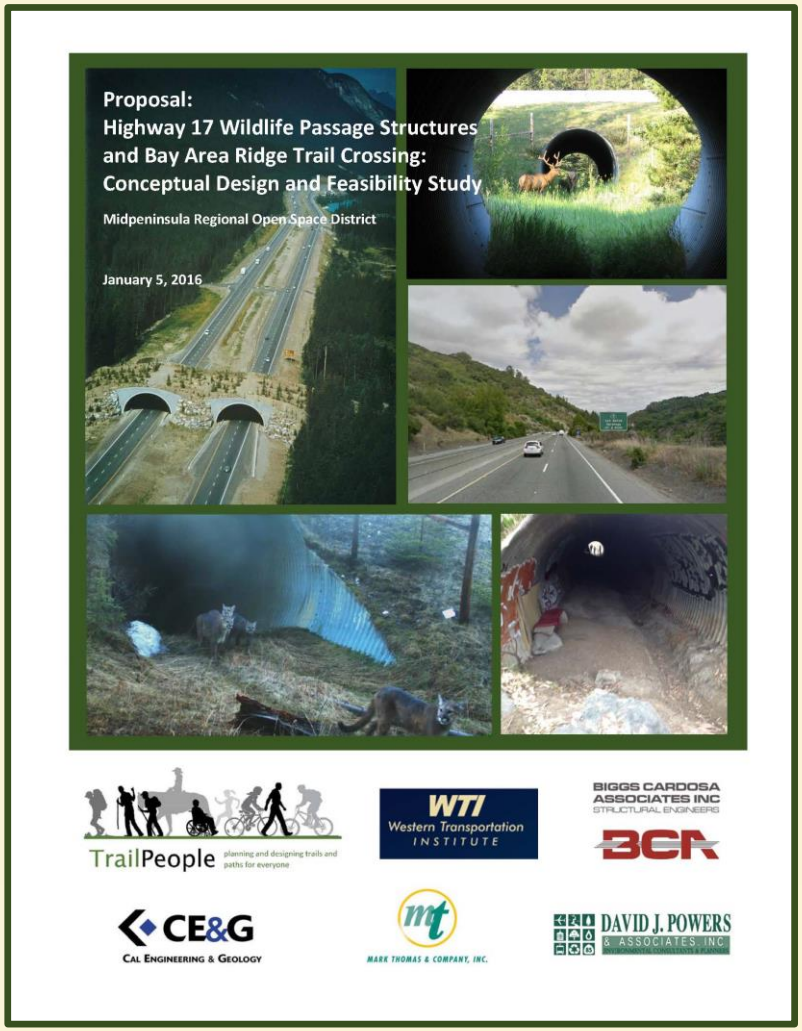
Study Team

- TrailPeople- Randy Anderson
- Biggs Cardosa Associates
- Western Transportation Institute, Montana State University- Tony Clevenger
- Cal Engineering and Geology
- Mark Thomas and Company
- David J. Powers and Associates
- Midpen Internal Team

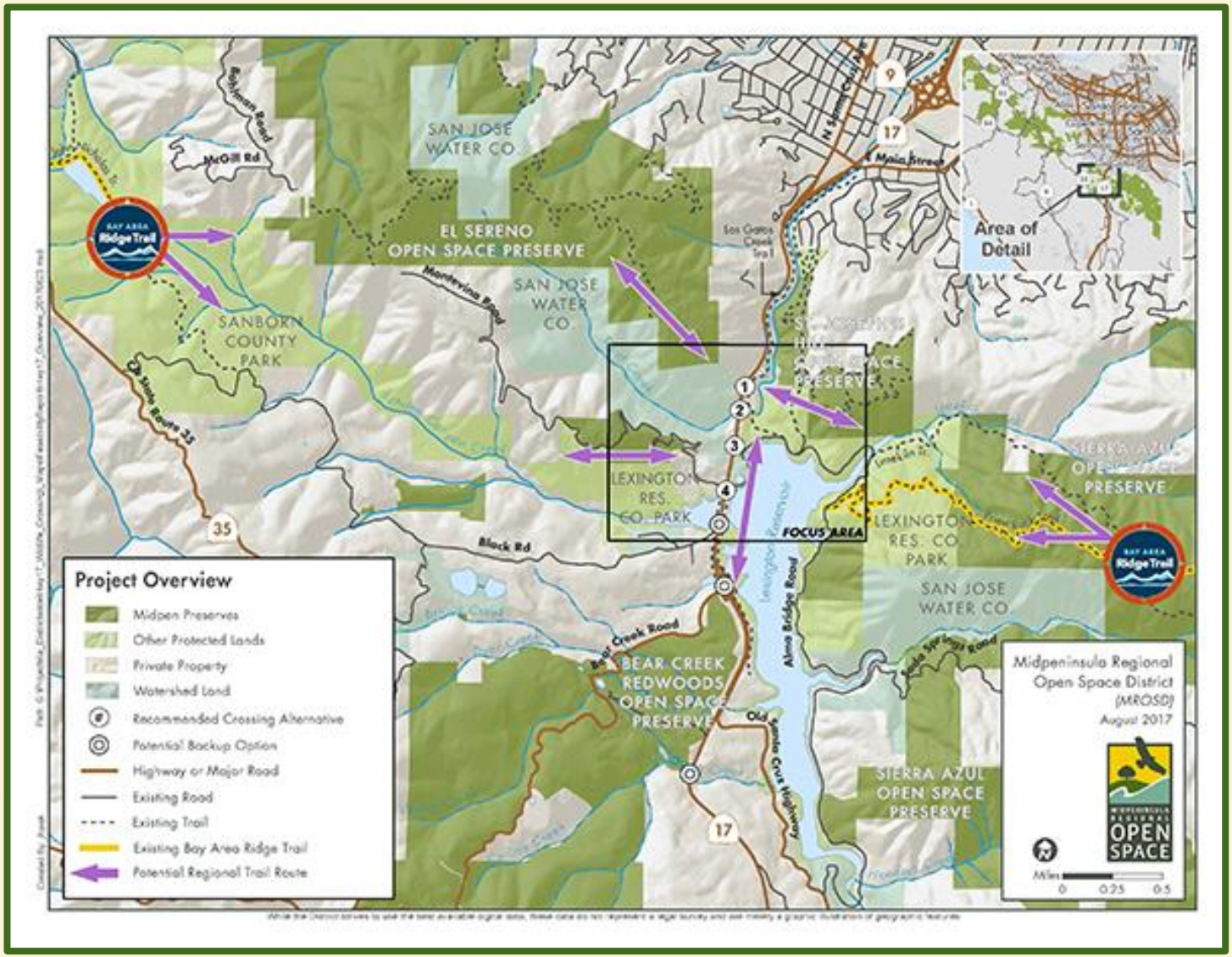
Study Objectives

- Identify Alternatives and ranking criteria
- Provide concept level plans and costs for each Alternative
- Identify if a wildlife and recreational trail crossing can be done in tandem or require separate crossings



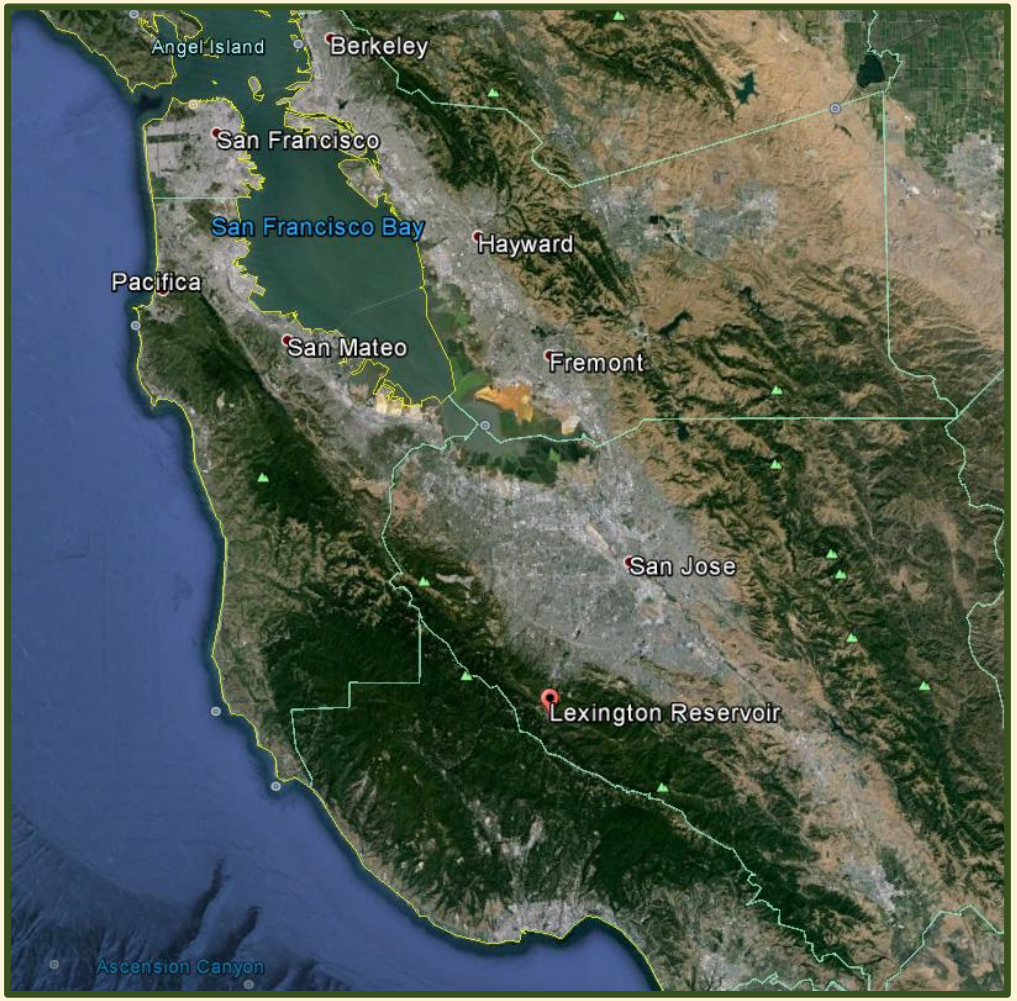


Study Area


Project Overview
Midpen Preserves
Other Protected Lands
Private Property
Watershed Land
Recommended Crossing Alternative
Potential Backup Option
Highway or Major Road
Existing Road
Existing Trail
Existing Bay Area Ridge Trail
Potential Regional Trail Route
EL SERENO OPEN SPACE PRESERVE
SANBORN COUNTY PARK
SAN JOSE WATER CO.
LEXINGTON RES. CO. PARK
FOCUS AREA
BEAR CREEK REDWOODS OPEN SPACE PRESERVE
SIERRA AZUL OPEN SPACE PRESERVE
Area of Detail
Midpeninsula Regional Open Space District (MROSD)
August 2017
Miles
0
0.25
0.5
Montevina Road
Black Rd
Almaden Expressway
Alma Bridge Road
Old Santa Cruz Highway
McGill Rd
Bohlman Road
N Main Street
E Main Street
State Route 35
Bear Creek Road

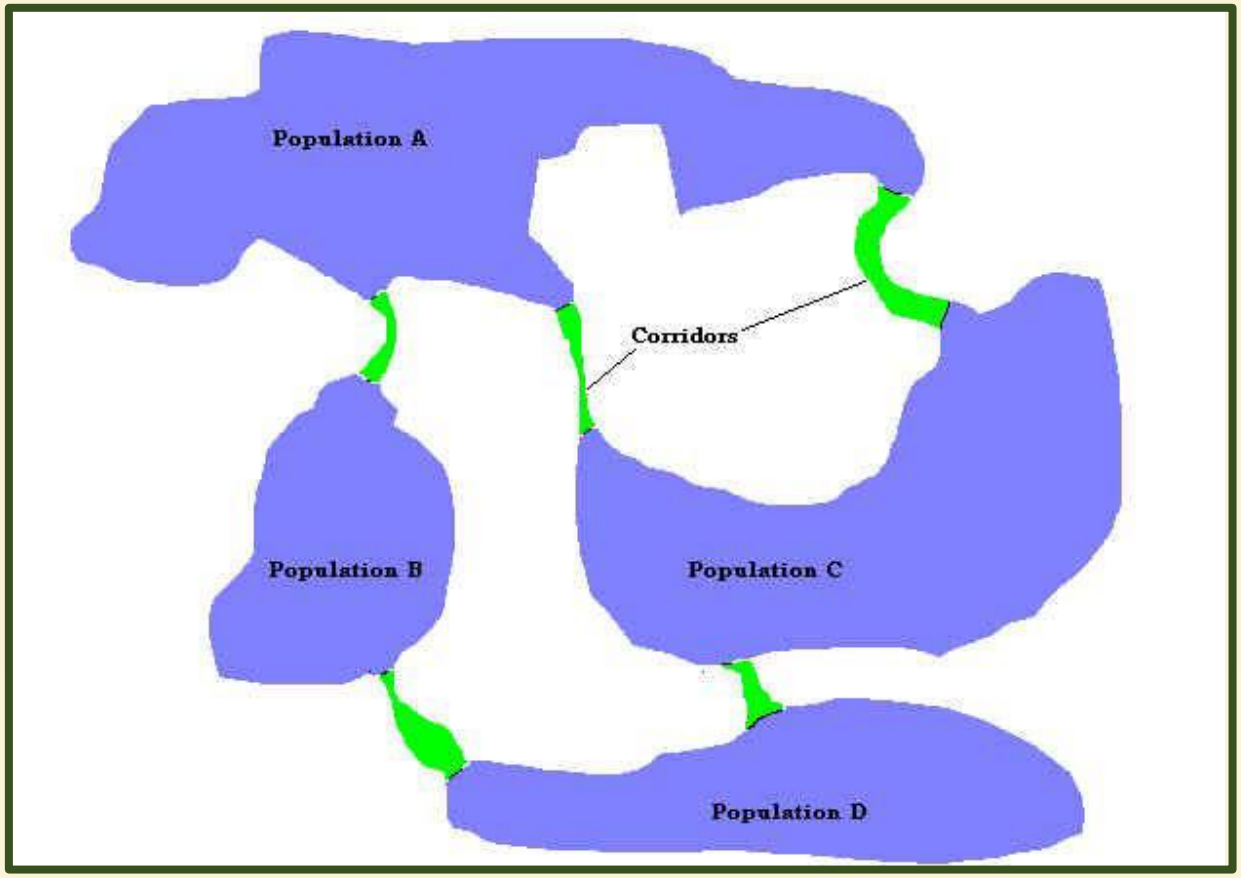
Regional Need

- Santa Cruz Mountains are geographically linked to neighboring ranges
- Human development limits genetic exchange between the ranges
- Especially true for land based animals that move across the landscape
- Highways bisect and fragment the natural landscape



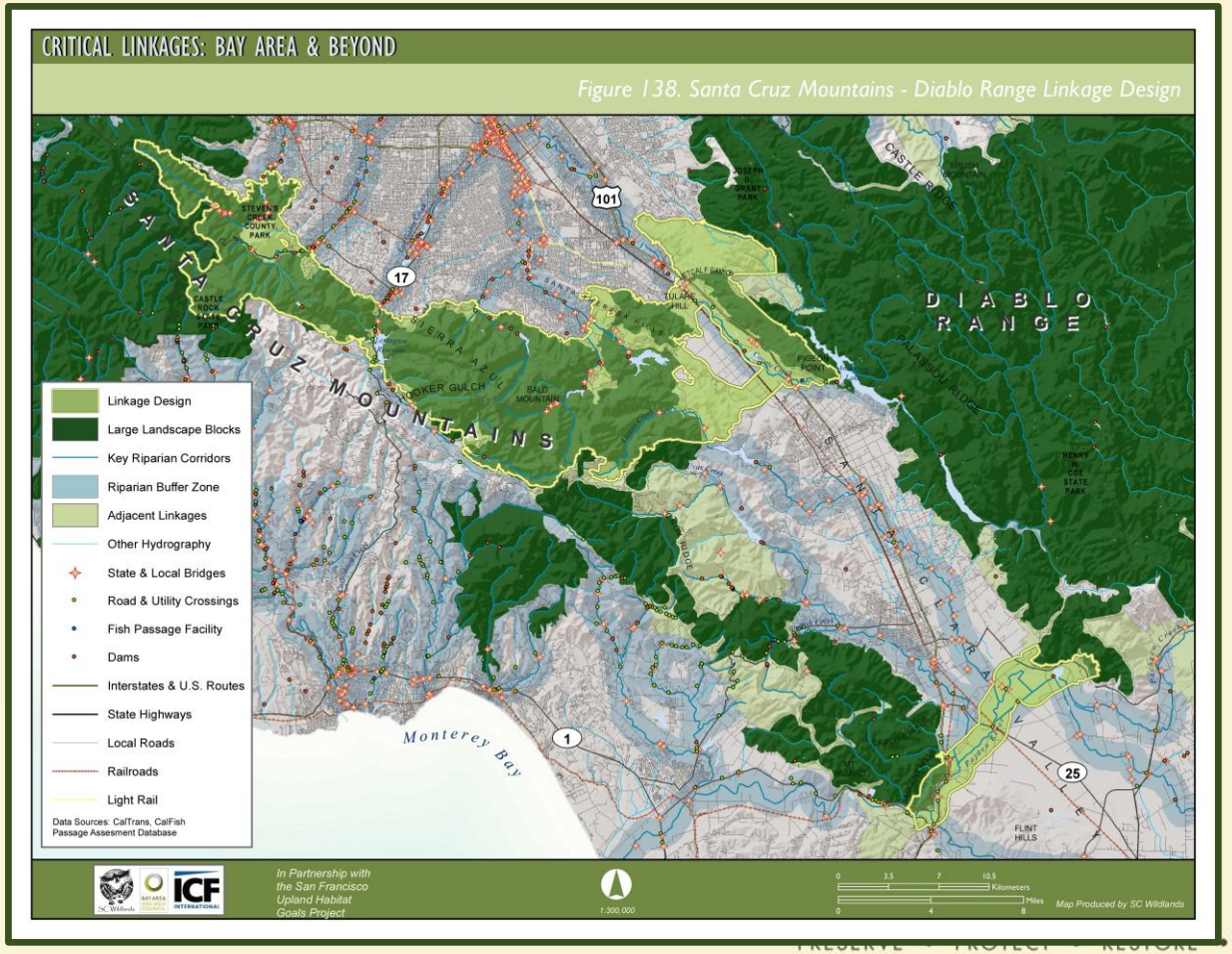
Critical Linkages

- Critical Linkages are travel corridors that provide habitat and routes for individuals to move into (ex. males searching for mates) and out of (ex. juvenile dispersal) an area.



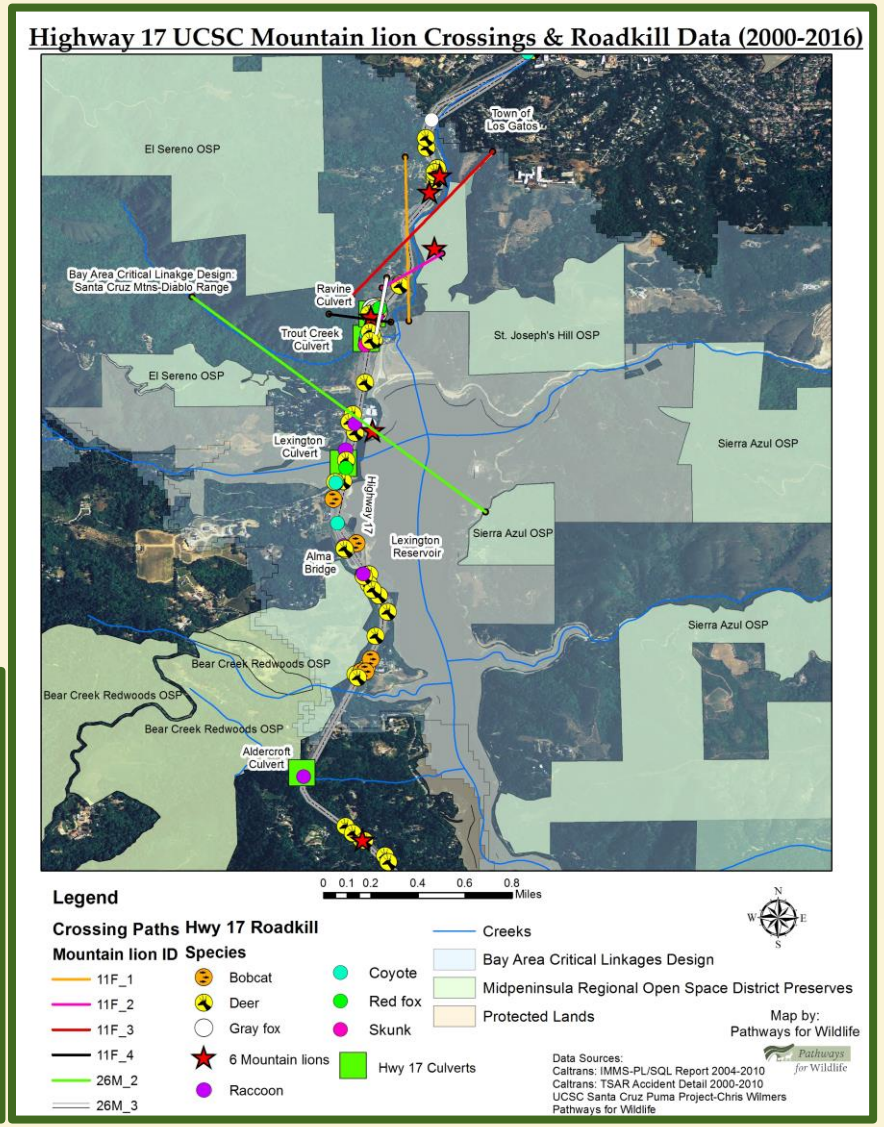
Highway 17 Critical Linkages Identified

The Bay Area Critical Linkages project (2013) built on previous research and identified a critical linkage within the study area



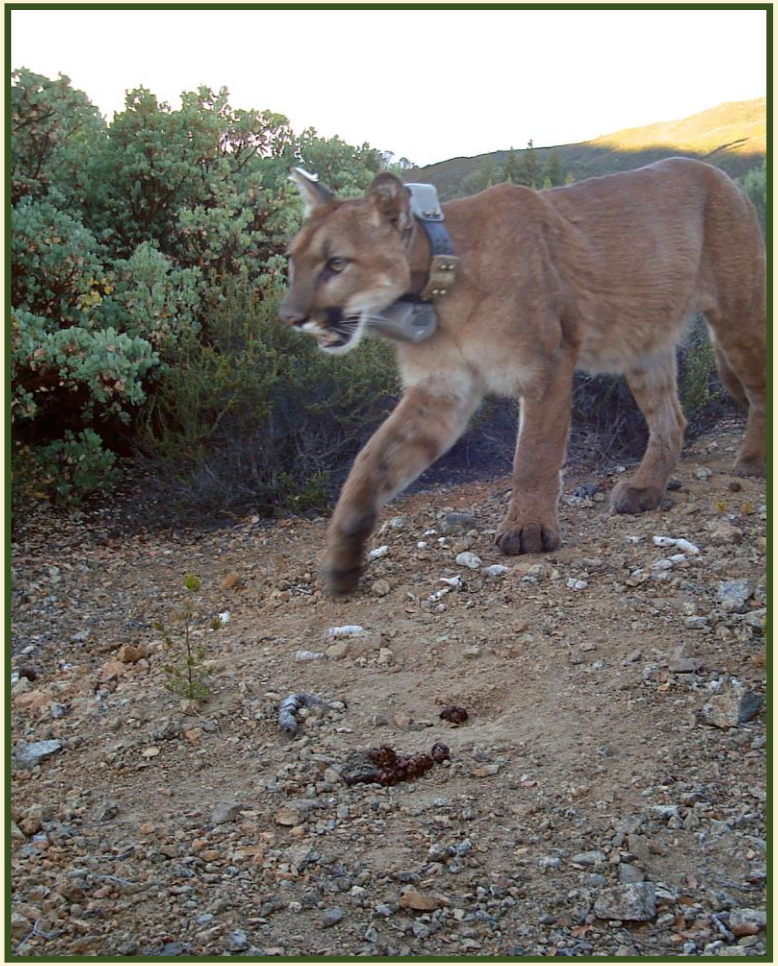
Research identified road kill "hot spot"

- Based on Pathways for Wildlife and UC Santa Cruz research
- Numerous crossing attempts and significant road kill
- This is where animals attempt to cross and will continue to do so in the future



Target Species

- Mountain Lion
- Deer
- Recreational trail users

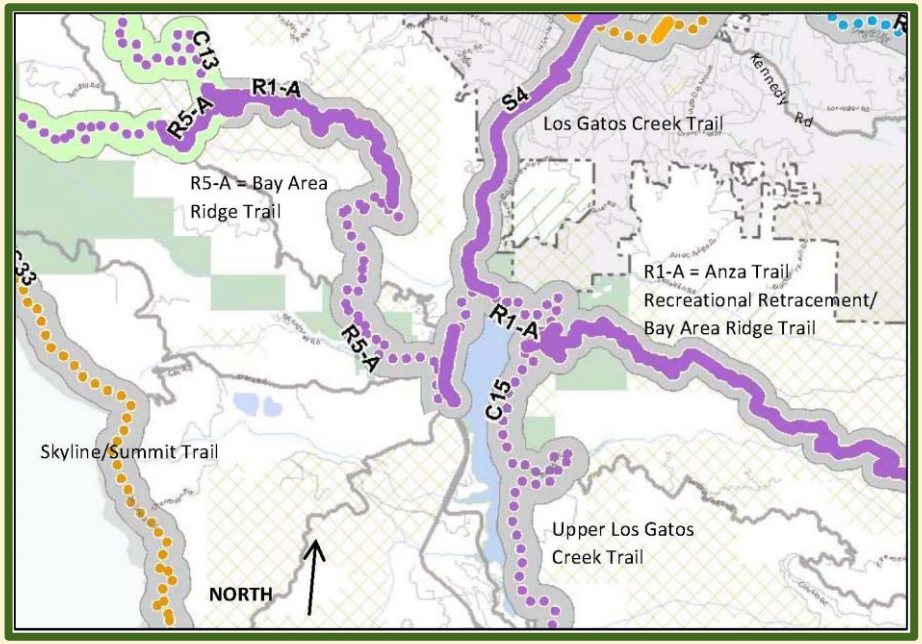


Bay Area Ridge Trail Goals

- Connect the trail from Alma Bridge Road to Black Road
- Provide a designated Ridge Trail crossing of Highway 17
- Provide an improved visitor experience for many different user groups
- Determine compatibility for use by wildlife

Regional Trails Current and Future Use

Major hub for trails, parks and preserves



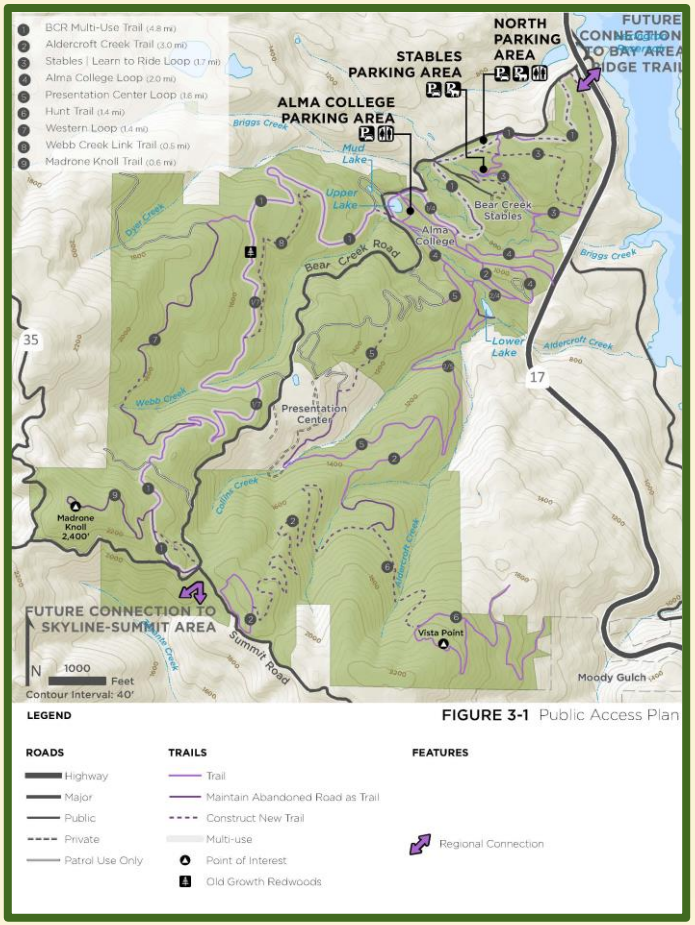
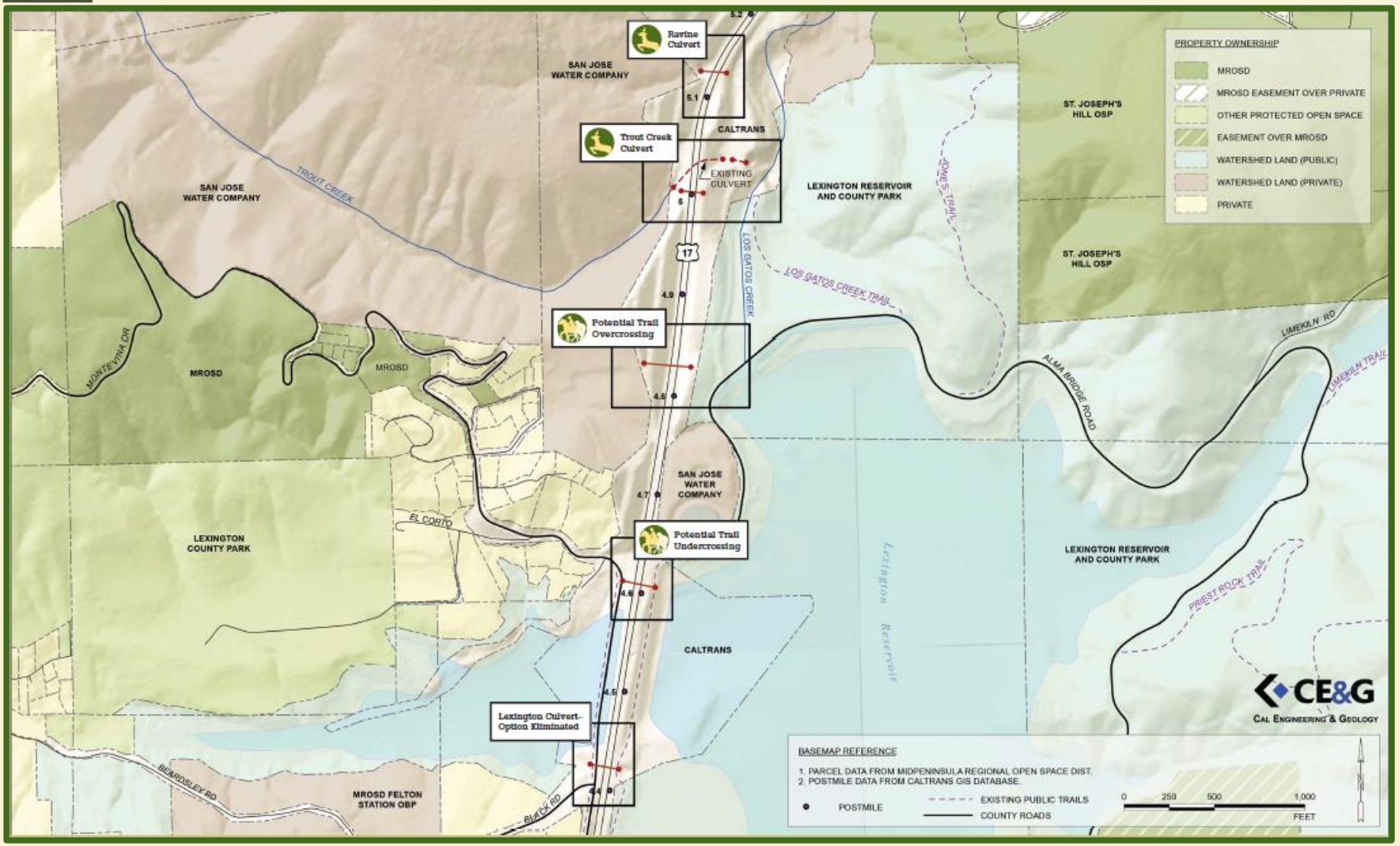


FIGURE 3-1 Public Access Plan

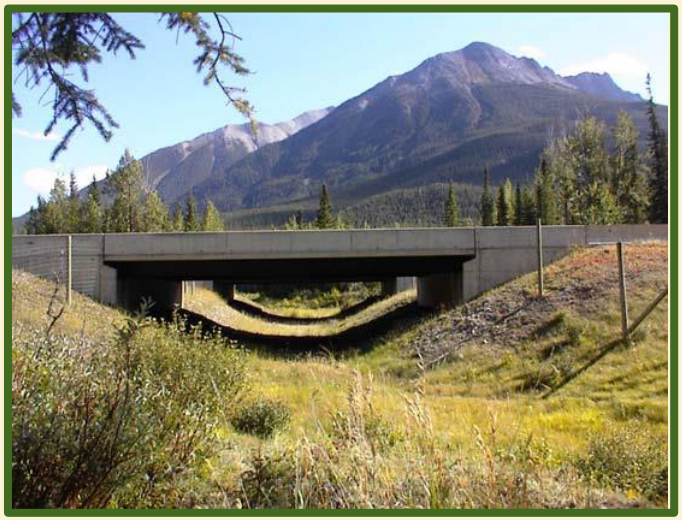
Proposed Crossing Locations (Preliminary Alternatives)



Types of crossings

Wildlife Crossing Alternatives

- Undercrossing at Ravine Creek
- Undercrossing at Trout Creek



Recreational Trail Crossing Alternatives

- Overcrossing south of Trout Creek
- Undercrossing at Montevina and Alma Bridge Roads

No Build

- No new structures

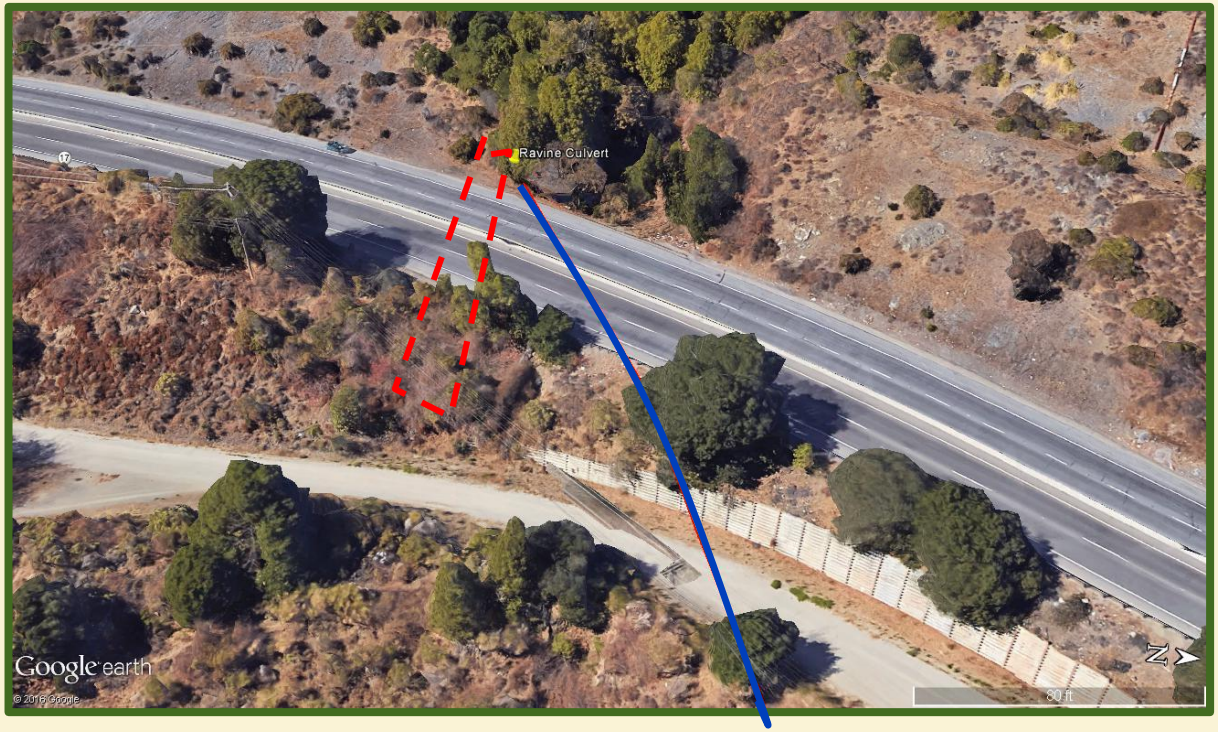
Alternative 1: Ravine Undercrossing

Pros:

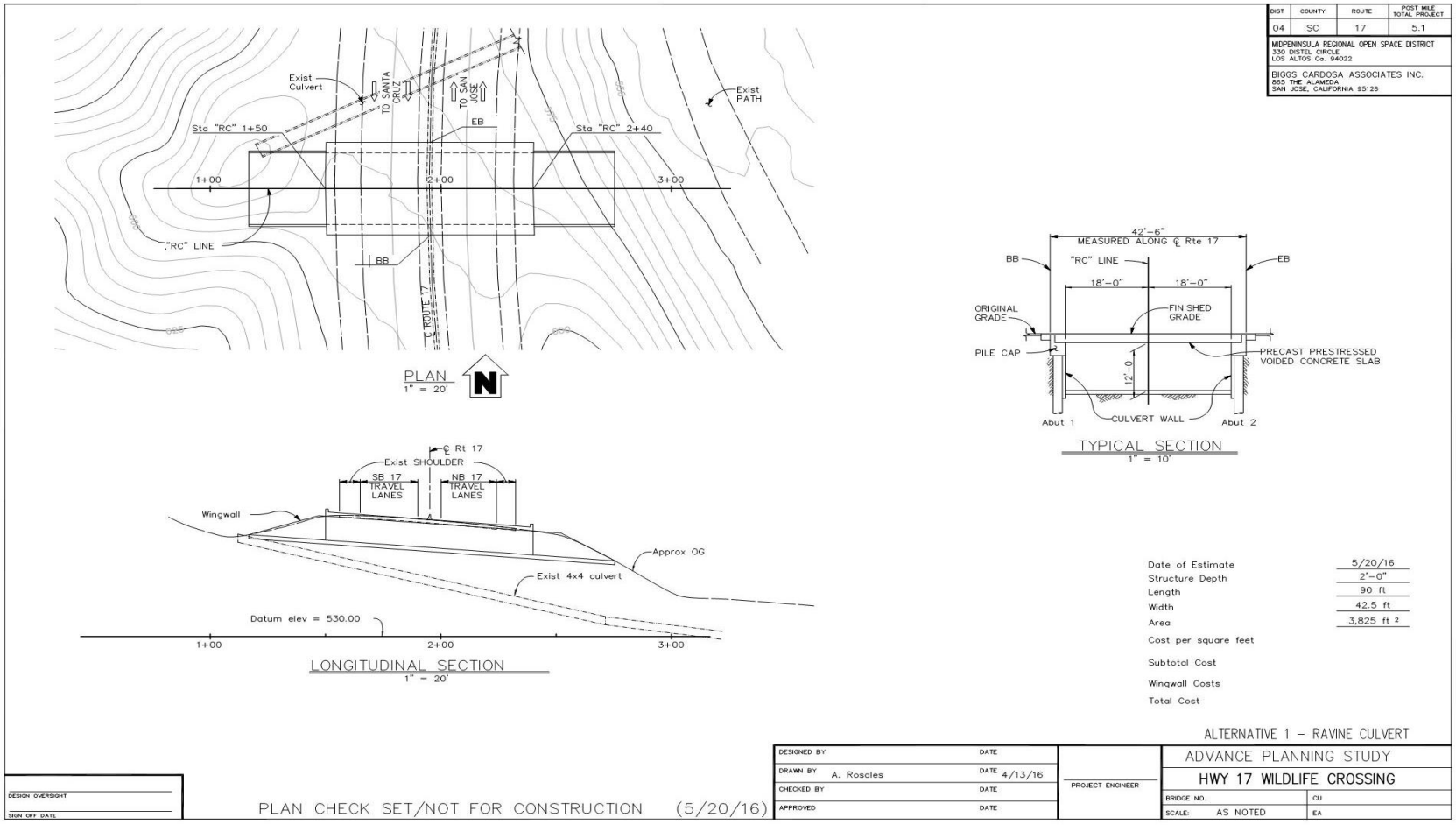
- Could be much shorter and wider than existing culvert
- Wildlife crossing attempts concentrated near here
- Less expensive to construct if "cut and cover"

Cons:

- Limited access area on west side
- Construction staging challenges



Ravine undercrossing preliminary plan



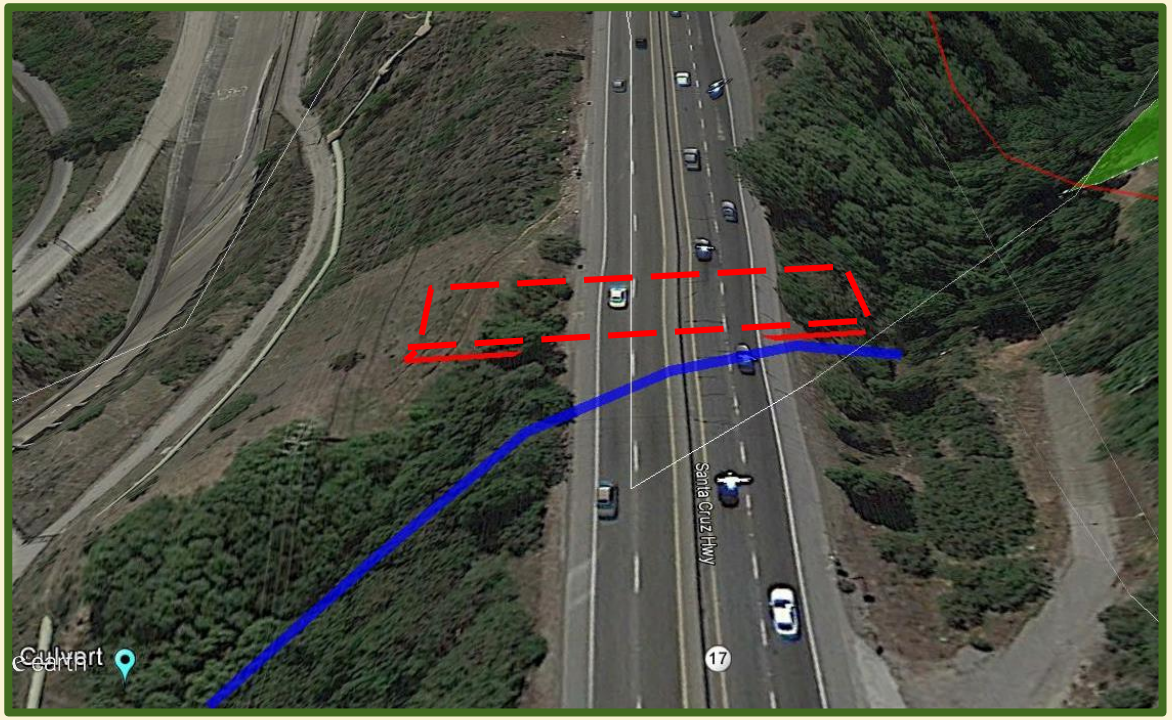
Alternative 2: Trout Creek Undercrossing

Pros:

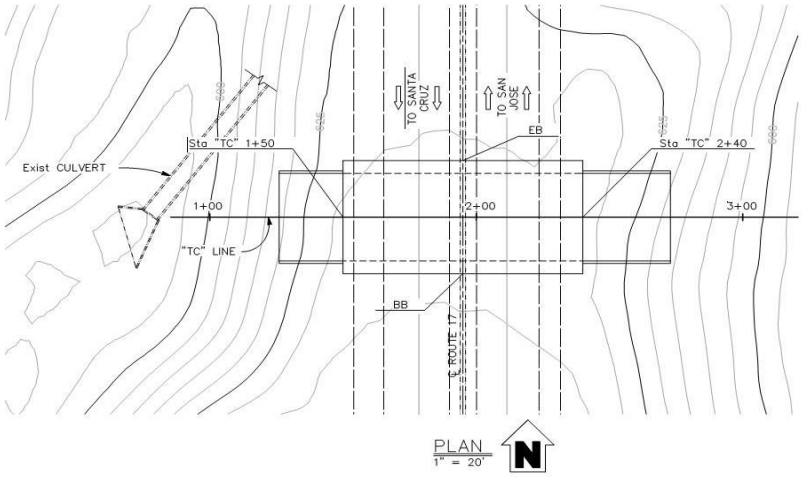
- Could be much shorter and wider than existing culvert
- Wildlife crossing attempts concentrated here
- Less expensive to construct than overcrossing

Cons:

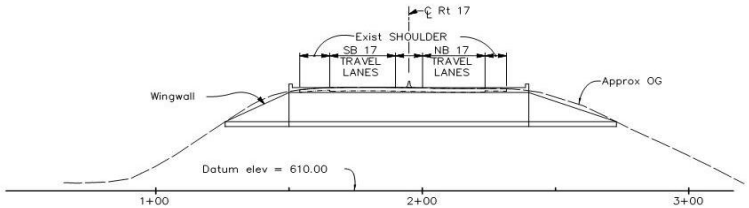
- A little farther from wildlife habitat on east side
- Utility and ops conflicts on east side
- Construction staging challenges



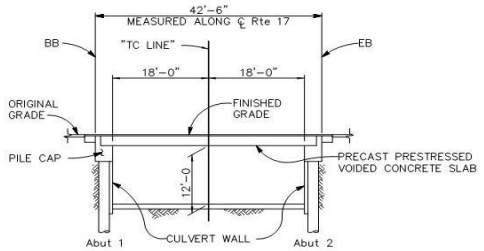
Trout Creek undercrossing preliminary plan



PLAN
1" = 20'



LONGITUDINAL SECTION
1" = 20'



TYPICAL SECTION
1" = 10'

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT
04	SC	17	5.0

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOXS Ca. 94022

BIGGS CARDOSA ASSOCIATES INC.
865 THE ALAMEDA
SAN JOSE, CALIFORNIA 95126

Date of Estimate	5/20/16
Structure Depth	2'-0"
Length	90 ft
Width	42.5 ft
Area	3,825 ft ²
Cost per square feet	
Subtotal Cost	
Wingwall Costs	
Total Cost	

ALTERNATIVE 2 – TROUT CREEK CULVERT

DESIGNED BY	DATE	PROJECT ENGINEER	ADVANCE PLANNING STUDY
DRAWN BY A. Rosales	DATE 4/7/16		HWY 17 WILDLIFE CROSSING
CHECKED BY	DATE		BRIDGE NO. / CU
APPROVED	DATE		SCALE: AS NOTED / EA

DESIGN OVERSIGHT
SIGN OFF DATE

PLAN CHECK SET/NOT FOR CONSTRUCTION (5/20/16)

Alternative 3: New Overcrossing

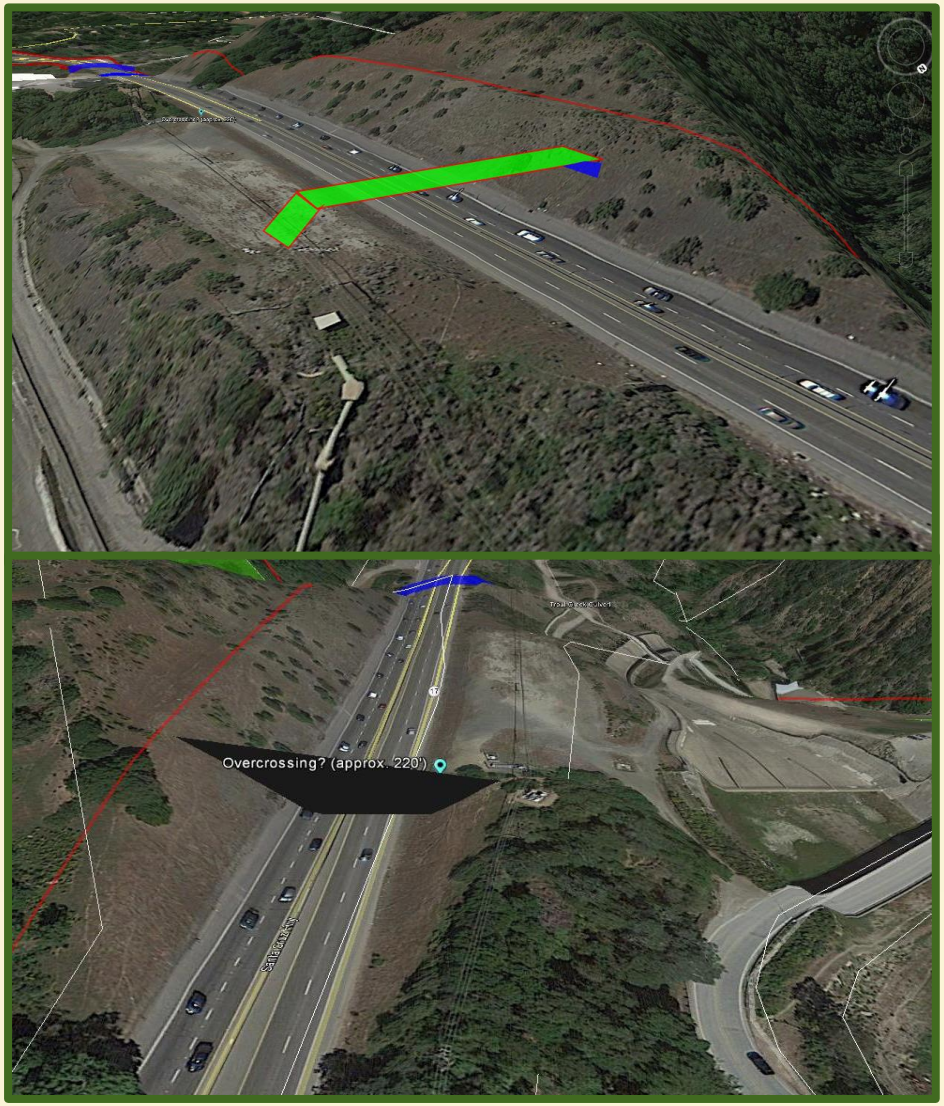
New overcrossing

Pros:

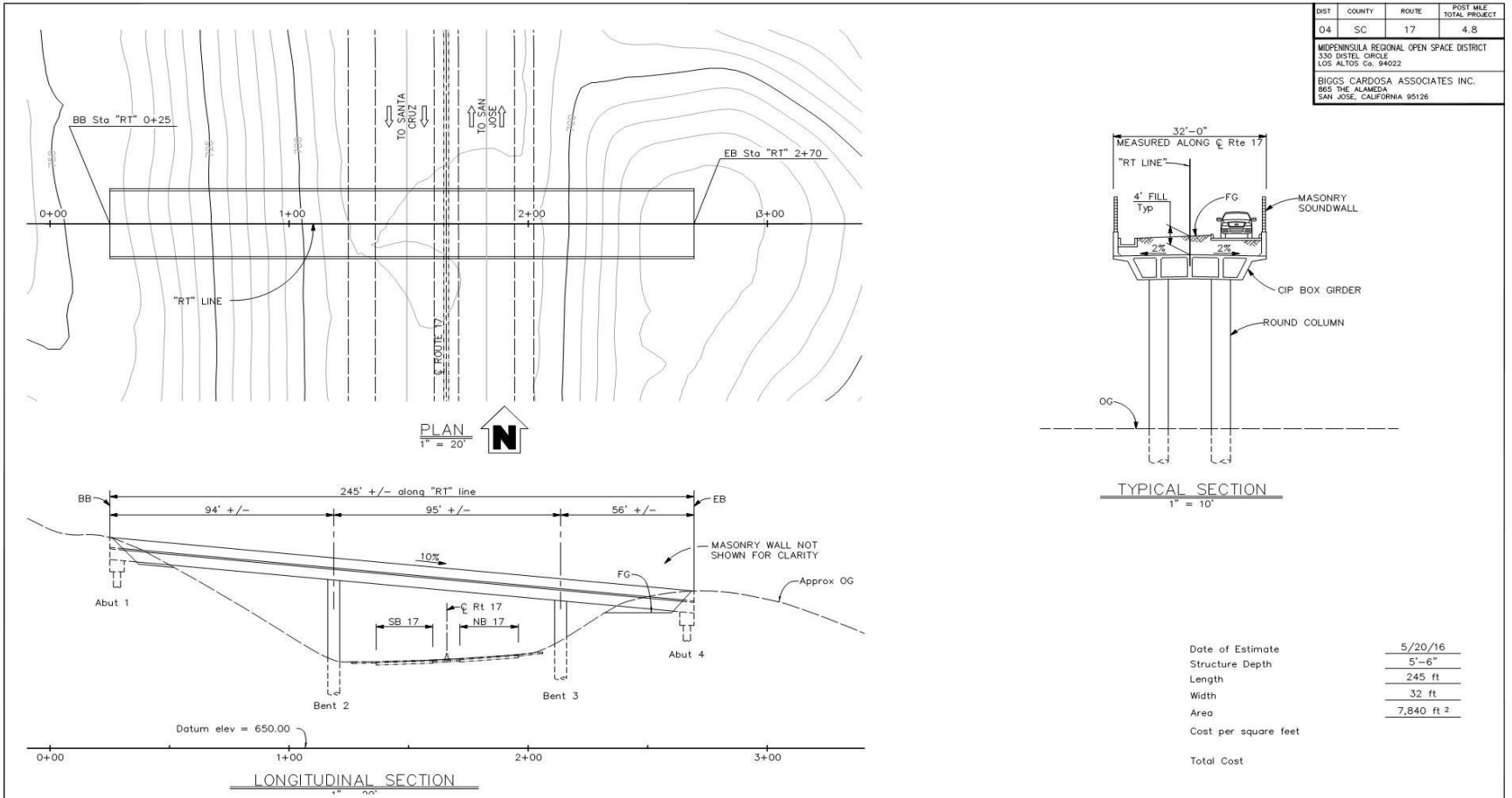
- Close to Ridge Trail connection
- Overcrossing preferred for trail
- Deer might use it

Cons:

- More expensive than undercrossing
- Not as desirable for cats
- Less contiguous to habitat
- Utility and ops conflicts
- Grade differential between E and W side
- No connection to road on W side



New Overcrossing preliminary plan



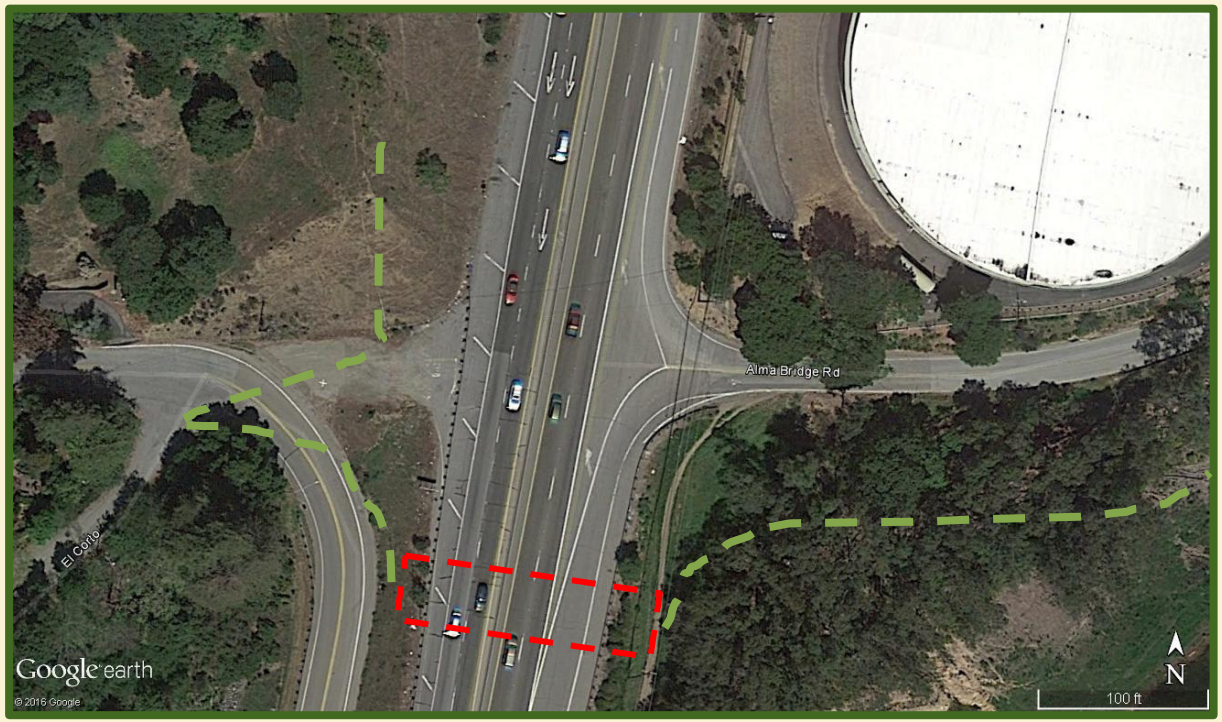
Alternative 4: Montevina Undercrossing

Pros:

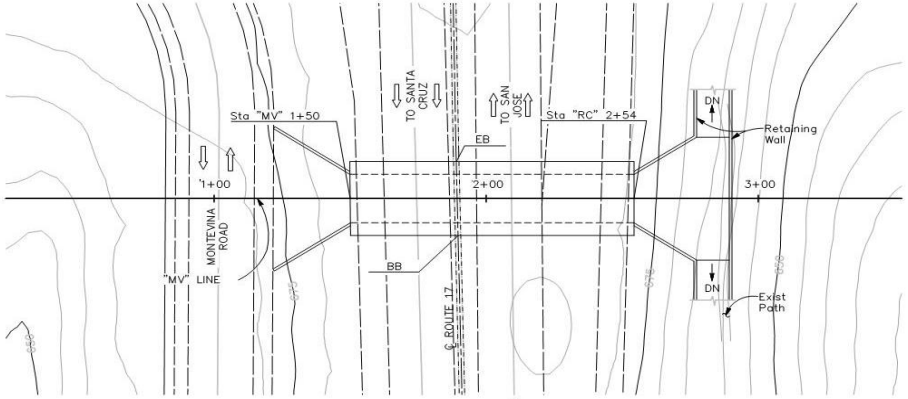
- Fairly close to future connections
- Less expensive to construct than overcrossing
- Could also serve wildlife

Cons:

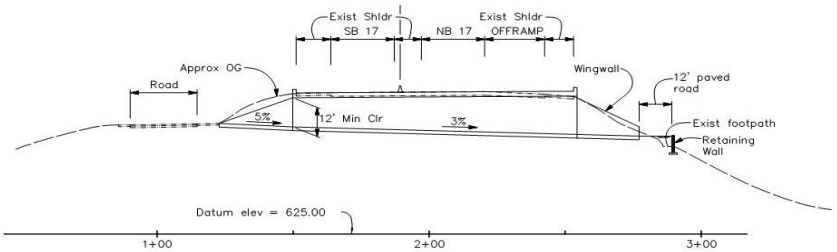
- A little farther from wildlife habitat on east side
- Construction staging challenges



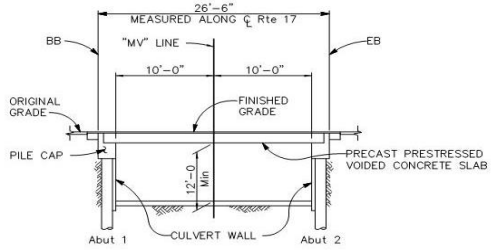
Montevina Undercrossing preliminary plan



PLAN
1" = 20'



LONGITUDINAL SECTION
1" = 20'



TYPICAL SECTION
N.T.S.

DIST	COUNTY	ROUTE	POST MILE TOTAL PROJECT
04	SC	17	4.6

MIDPENINSULA REGIONAL OPEN SPACE DISTRICT
330 DISTEL CIRCLE
LOS ALTOS Ca. 94022

BIGGS CARDOSA ASSOCIATES INC.
865 THE ALAMEDA
SAN JOSE, CALIFORNIA 95126

Date of Estimate	5/20/16
Structure Depth	2'-0"
Length	104 ft
Width	26.5 ft
Area	2,756 ft ²
Cost per square feet	
Subtotal Cost	
Wingwall Costs	
Retaining Wall Costs	
Total Cost	

ALTERNATIVE 4 – MONTEVINA UNDERCROSSING

DESIGN OVERSIGHT
SIGN OFF DATE

PLAN CHECK SET/NOT FOR CONSTRUCTION (5/20/16)

DESIGNED BY	DATE		ADVANCE PLANNING STUDY
DRAWN BY A. Rosales	DATE 4/13/16	PROJECT ENGINEER	HWY 17 WILDLIFE CROSSING
CHECKED BY	DATE		BRIDGE NO. / CU
APPROVED	DATE		SCALE: AS NOTED / EA

No Build- Retain Lexington Culvert and Bear Creek/Alma Bridge Overcrossing

Pros:

- Some use by small to medium sized wildlife
- Some ability to improve existing structures
- Function better as "secondary crossings"

Cons:

- Heavy vehicle traffic
- Requires crossing multiple lanes of traffic
- Current configuration not a pleasant visitor experience
- Far from travel corridor for target species
- Flood control for Lexington Reservoir

Overall Project Costs

- Preliminary Alternative Report recommends two separate structures and provides cost estimates for each new crossing alternative:

	Construction cost (million $)	Total Project Cost (million $)
Ravine Undercrossing	$5.0	$7.7
Trout Creek Undercrossing	$4.6	$7.2
Overcrossing	$9.9	$15.1
Montevina Undercrossing	$4.2	$6.6

- Total costs to implement both a new wildlife crossing and a new Ridge Trail connection vary from $13.8 million to $22.8 million
- Currently $14 million allocated within MAA#20
- Additional funding will be needed to provide trail connections

Next Steps

- Receive Public feedback
- Prepare Caltrans Project Study Report (PSR)
- CEQA/NEPA/Permitting
- Design and Construction
- Ongoing: partner development and pursue grants and other funding opportunities
- Future: maintenance, patrol, and effectiveness monitoring

Project Timeline

2016	★ 2017-2018	2018-2019	2019-2020	2020 (and beyond)
Feasibility Study	Partner Development & Stakeholder Outreach	Environmental Review & Permitting	Plans and Specifications (Design)	Construction (dependent on funding)

Alternatives Ranking Criteria

	1. Ravine Undercrossing		2. Trout Creek Undercrossing		3. Overcrossing		4. Montevina Rd – Alma Bridge Rd Undercrossing		Key Differentiators
Functionality for Wildlife									
1. Proximity to wildlife corridor	High	●	High	●	Low	○	Low	○	More northerly alts are in identified corridor
2. Appropriate dimensions and design features	High	●	High	●	Medium	◐	Medium	◐	OC not preferred by mt. lions; #4 UC too close to roads
3. Habitat connectivity	High	●	High	●	Low	○	Low	○	More disturbed area, roads and facilities around southern alts
4. Line of sight	High	●	High	●	Low	○	High	●	All but overcrossing will have good vis. From adj. habitat
5. Less human exposure	Medium	◐	Medium	◐	Low	○	No Score		Increasing level of facilities and activity to the south
6. Species of special status	Low	○	Low	○	Low	○	Medium	◐	Potential access for semi-aquatic species at #4 and Lexington culvert
Functionality for People									
1. Proximity to Ridge Trail connections	Medium	◐	Medium	◐	Medium	◐	Medium	◐	First 3 have close but challenging connections; #4 a little more distant
2. Appropriate dimensions	High	●	High	●	High	●	High	●	All alts could be adequate for trail access
3. Non-motorized recreation and transportation connections	No Score		No Score		No Score		High	●	First 3 have no potential to connect to public road on west
4. Emergency and maintenance vehicle access	No Score		No Score		No Score		High	●	As above; #4 could have relatively direct access
Constructability/Cost									
1. Location with fill or cut embankments	Medium	◐	High	●	Medium	◐	Medium	◐	Only Trout Creek appears to have ample depth/ht of embankment
2. Environmental impact	Medium	◐	Medium	◐	High	●	Medium	◐	#1 and 2 involve riparian habitat; #4 is close to the reservoir shore
3. Soils and geology feasible for construction	Medium	◐	High	●	High	●	High	●	#1 Ravine has landslide potential; others relatively unconstrained
4. Can be designed to meet standards	High	●	High	●	High	●	High	●	All can be designed to meet Caltrans standards
5. Feasible construction staging and traffic impact	Medium	◐	High	●	Medium	◐	High	●	#1 and #3 have significant constrints for access on west side
6. Minimal impact on existing facilities and operations	High	●	Medium	◐	Medium	◐	High	●	#2 and #3 would require crossing and possibly modifying existing facilities
7. Lower relative cost (low cost = high score)	Medium	◐	Medium	◐	Low	○	High	●	An OC will cost more than an UC; alt #4 is less constrained than others
Future Decision Factors									
1. Project Readiness/Funding identified									
2. Access Permission/ Ownership/Right of Way									
3. Maintenance and Operation Arrangements									
4. Public Support									

Current and Potential Future Partners