STUDY SESSION | November 14, 2018 - FINAL

McKinley Street Grade Separation

PRESENTATION OUTLINE

- Project Timeline (Since 2006)
- Project Budget and Schedule
- Selected Alternative: Road over Rail
- Project Benefits
- McKinley-Sampson Connector Road Alternatives
  - Alternatives Withdrawn
  - Alternatives Advanced
  - Recommended Alternative
- Next Steps

TIMELINE

McKinley Street Grade Separation

March 2006

TUMF Agreement

COUNCIL MEETING

September 2007

STUDY SESSION

Four Alternatives Reviewed

March 2010

TUMF Amendment 1

COUNCIL MEETING

January 2011

COUNCIL MEETING

Appropriate $2.2 million

October 2013

TUMF Amendment 2

COUNCIL MEETING

October 2015

COUNCIL MEETING

Appropriate $2.4 million

BCA

TIMELINE

McKinley Street Grade Separation

November 2016

Revise budget to $5.04 million

COUNCIL MEETING

April 2017

SB 132 allocated $84.45 million for McKinley GS

June 2017

Discussion

STUDY SESSION

August 2017

COUNCIL MEETING

De-obligate $400k Fed funds

November 2017

Discussion

STUDY SESSION

February 2018

STUDY SESSION

Discussion

BCA

TIMELINE

COUNCIL MEETING

Right-of-Way Contract
Award: $1.2M

July
2018

November 14
2018

November 7
2018

Design Contract Award: $9.8M

COUNCIL MEETING

Project Concept Report

STUDY SESSION

PROJECT BUDGET & SCHEDULE

McKinley Street Grade Separation

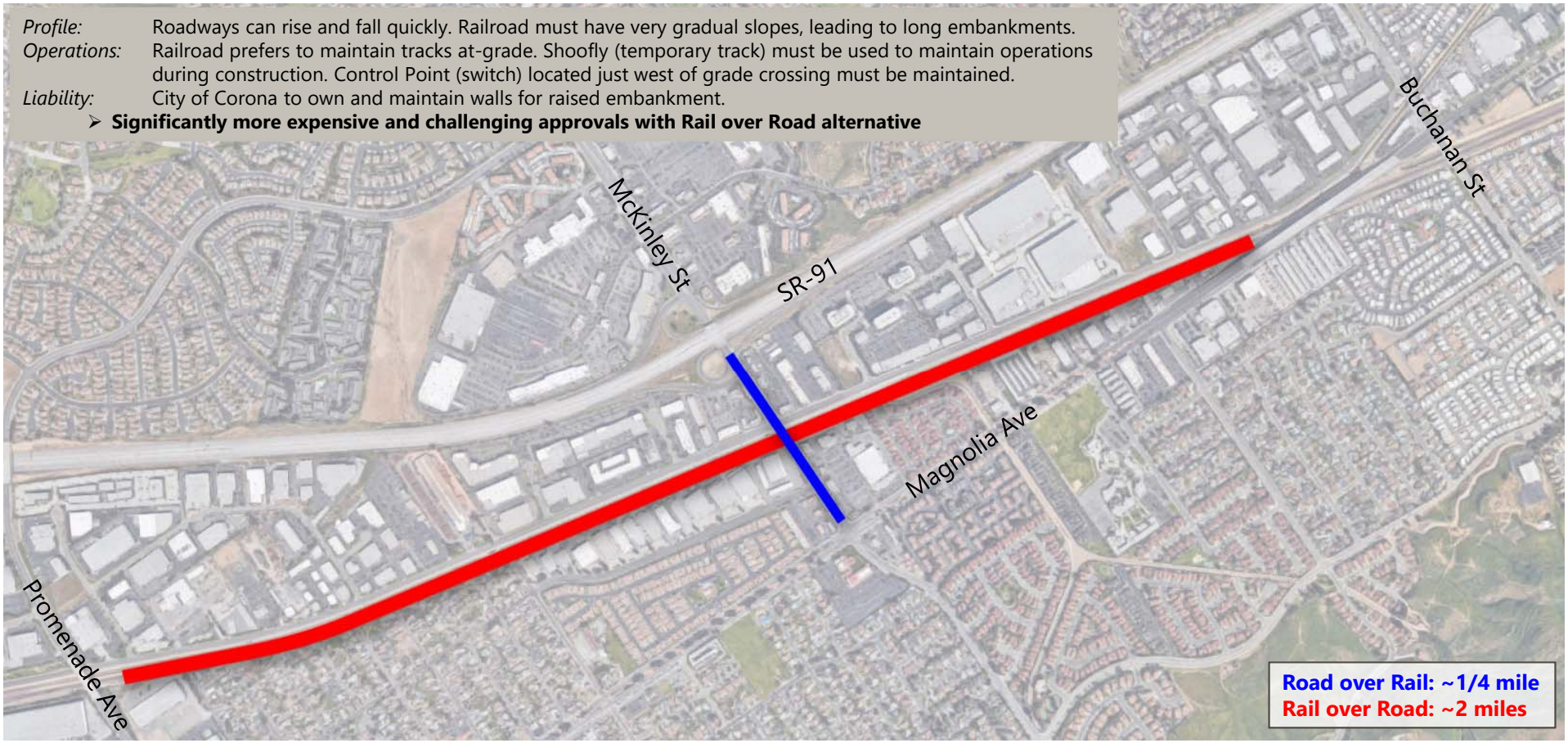
- Project Budget: $89.5M
  - Senate Bill (SB) 132: $84.45M
  - Other Sources (TUMF, TDA LTF, etc.): ~$5.0M

- Project Schedule
  - Per SB 132, funds must be encumbered and liquidated by June 2023
  - Grade separation alternatives
    - "Road over Rail": Feasible and under development
    - "Rail over Road": Not possible with schedule or budget

RAIL OVER ROAD CHALLENGES

Profile: Roadways can rise and fall quickly. Railroad must have very gradual slopes, leading to long embankments.
Operations: Railroad prefers to maintain tracks at-grade. Shoofly (temporary track) must be used to maintain operations during construction. Control Point (switch) located just west of grade crossing must be maintained.
Liability: City of Corona to own and maintain walls for raised embankment.

- **Significantly more expensive and challenging approvals with Rail over Road alternative**



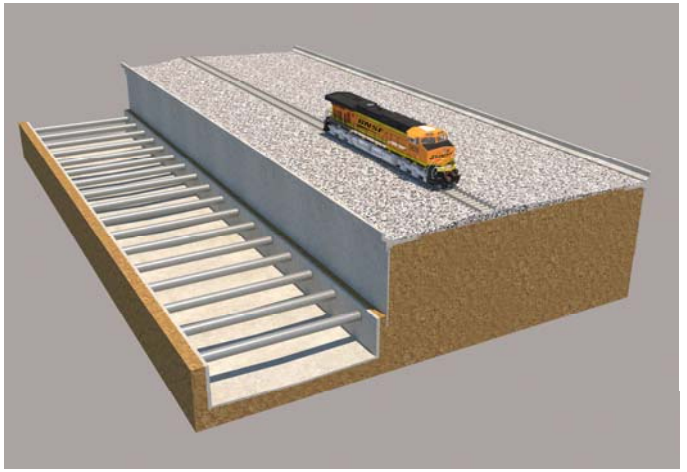
RAIL OVER ROAD CHALLENGES

- Raised embankment would be ~2 miles long
- Sound walls on top of embankment
- Even ~1/2 mile west of grade crossing, wall is still tall because of gradual slopes and flat area required for Control Point

RAIL OVER ROAD CHALLENGES

- BNSF Railway Approval
  - Railroad approval to raise tracks extremely difficult
    - North Milliken Grade Separation: Geometrics
    - Alameda Corridor-East GS (Fairway, Fullerton): Groundwater (*partial raise*)
    - Colton Crossing: Train over Train (*one had to be raised*)
    - All of these projects are UPRR, not BNSF Railway

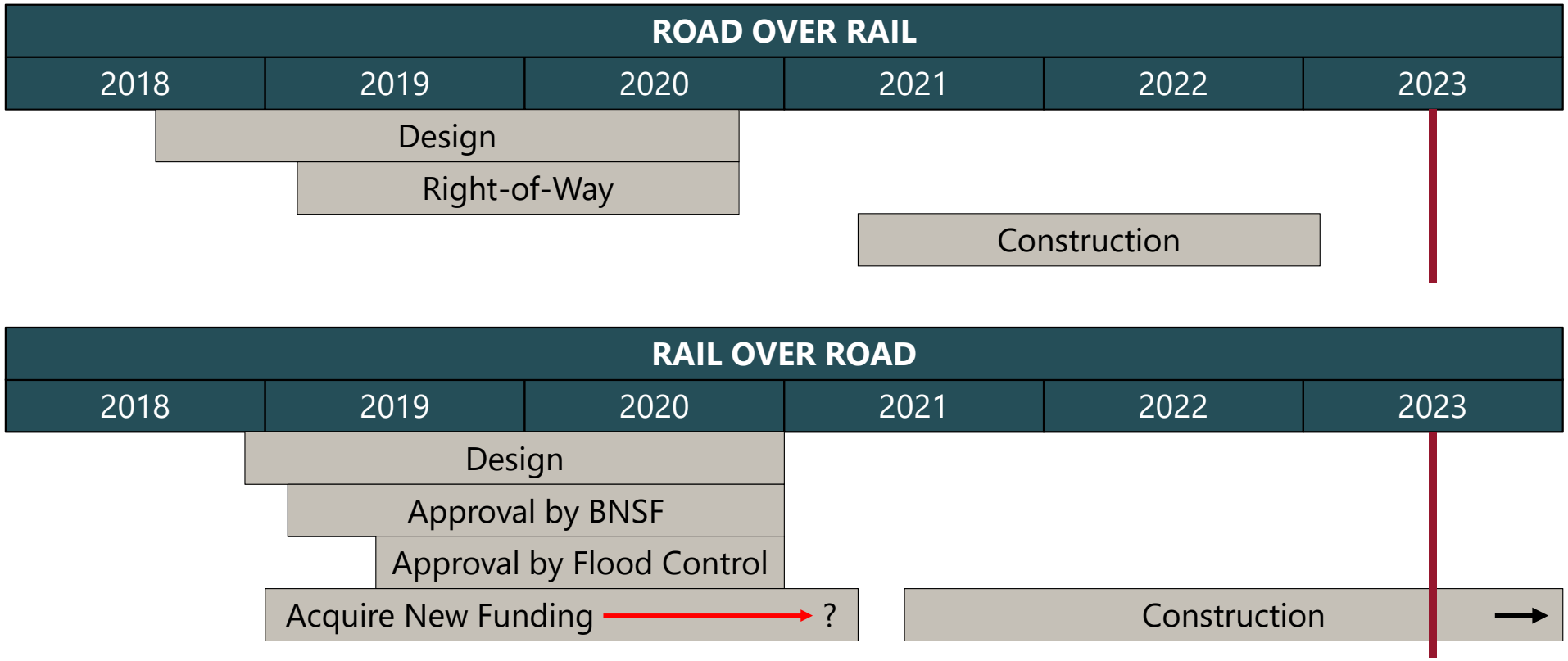
- Riverside County Flood Control & Water Conservation District (RCFC&WCD) Approval
  - Proximity of Arlington Channel
  - Costly retrofit of channel needed for raised embankment, or
  - Expensive deep foundations needed for raised embankment



RAIL OVER ROAD CHALLENGES

McKinley Street Grade Separation

- Schedule: Project must be completed by June 2023



BCR

RAIL OVER ROAD CHALLENGES

McKinley Street Grade Separation

- Cost: ~$89M budget. Rail over Road estimated at ~$207M in November 2017.
- Refinements to cost estimate:
  - Use of precast walls with lightweight cellular concrete (similar to Colton Crossing)
    - Cheaper retaining wall system; faster to construct: ~$6M savings.
    - Reduces load on adjacent flood control channel, reducing need for expensive shoring wall: ~$18M savings.
    - T-Walls also evaluated (similar to North Milliken GS), but more expensive system with shoring wall or channel retrofit required: ~$3M increase.
  - Eliminate roadway enhancements (add lanes at a later date): ~$10M savings
  - Leave shoofly track in place as BNSF siding: ~$2M savings

Refined Cost: ~$171M >>> Project Budget

BCR

TRAFFIC CONGESTION

- Grade crossing causes significant delays: gate-down time
- Train volume and length will continue to grow

Train Volumes (Per Day)				
	Freight	**Metrolink**	**Amtrak**	**Total**
2018 (Estimated)	56	29	3	**88**
2035 (Projected)	91	42	4	**137**

Gate-Down Time (Per Day)	
2018 (Estimated)	2 hours 35 minutes
2035 (Projected)	4 hours 20 minutes

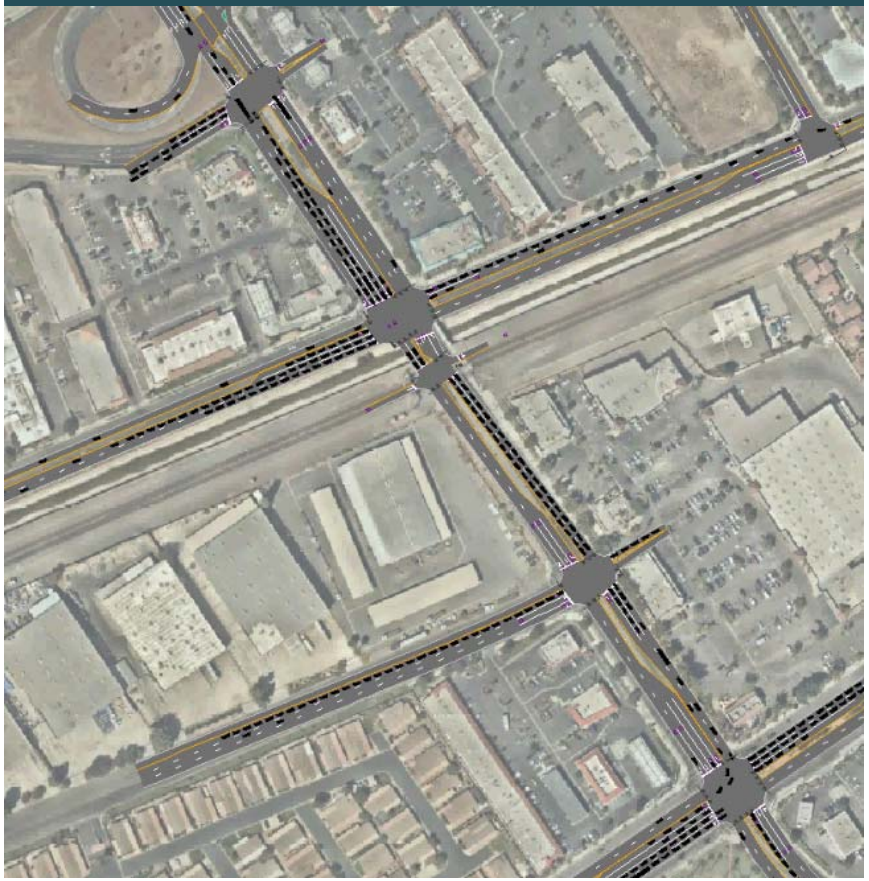
Traffic on McKinley Street is stopped for over 4 hours per day

PROJECT BENEFIT: TRAFFIC RELIEF

McKinley Street Grade Separation

WITH PROJECT (Build Alternative) (Year 2043)

WITHOUT PROJECT (No-Build Alternative) (Year 2043)

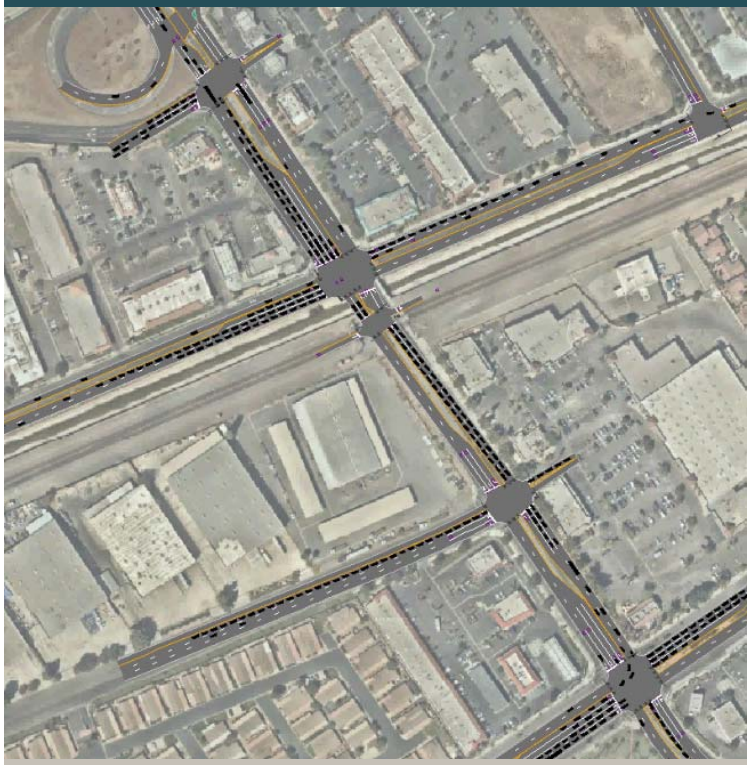


PROJECT BENEFIT: TRAFFIC RELIEF

WITH PROJECT (Build Alternative) (Year 2043)

44 seconds

WITHOUT PROJECT (No-Build Alternative) (Year 2043)

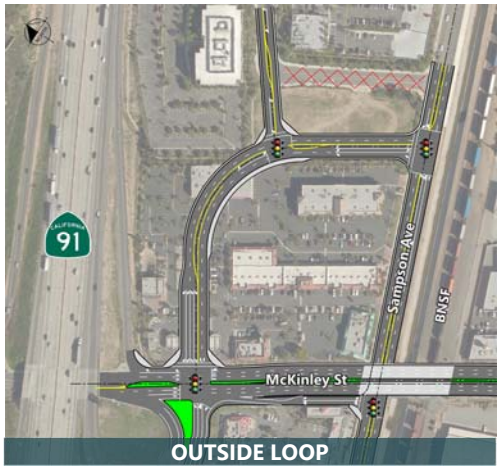


5 minutes 20 seconds

Emergency Response Time

CONNECTOR ROAD ALTERNATIVES

ROUNDABOUT LOOP



OUTSIDE LOOP

INNER LOOP

OFFSET INTERSECTION LOOP

OUTSIDE LOOP (MOD.)

INNER LOOP (MOD.)

ALTERNATIVES WITHDRAWN

OFFSET INTERSECTION LOOP

Challenges:

- Elevated intersection at McKinley and grade differential at back of Los Arcos Plaza challenging for access
- SR-91 EB Off-Ramp traffic cannot go straight across to connector road

OUTSIDE LOOP (MOD.)

Challenges:

- Driveway access to Los Arcos Plaza
- Grade differential
- Roadway curvature

ALTERNATIVES WITHDRAWN

OUTSIDE LOOP

Challenges:

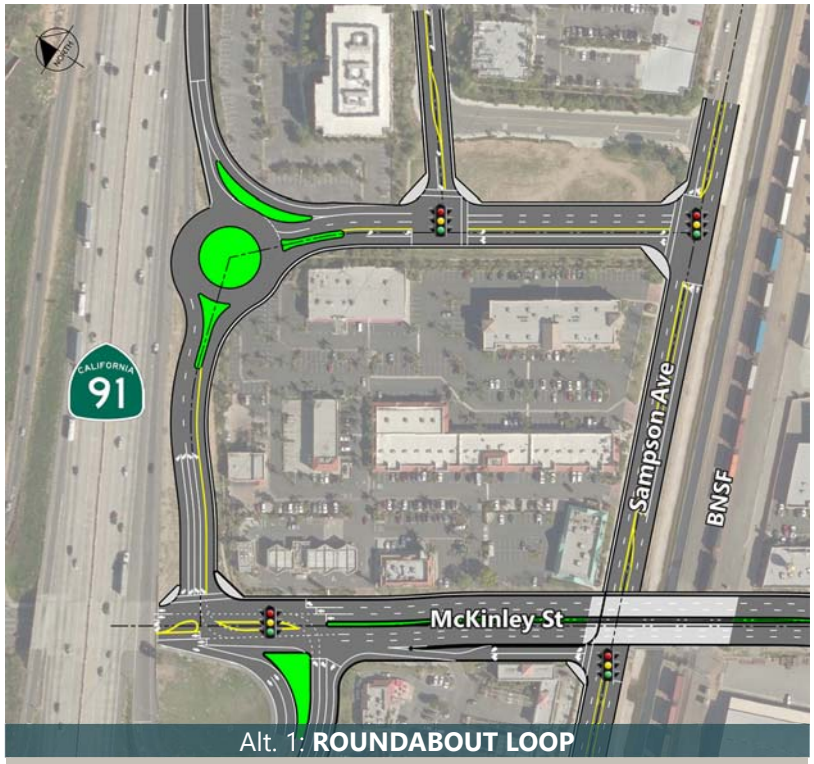
- Majority of Los Arcos Plaza buildings face west (towards McKinley) complicating visibility
- Remnant parcel to north of connector road less viable
- Grade differential

INNER LOOP (MOD.)

Challenges:

- Truck turning and tight curvature
- Parking challenges for Denny's remnant
- Proximity of intersections on Sampson Avenue

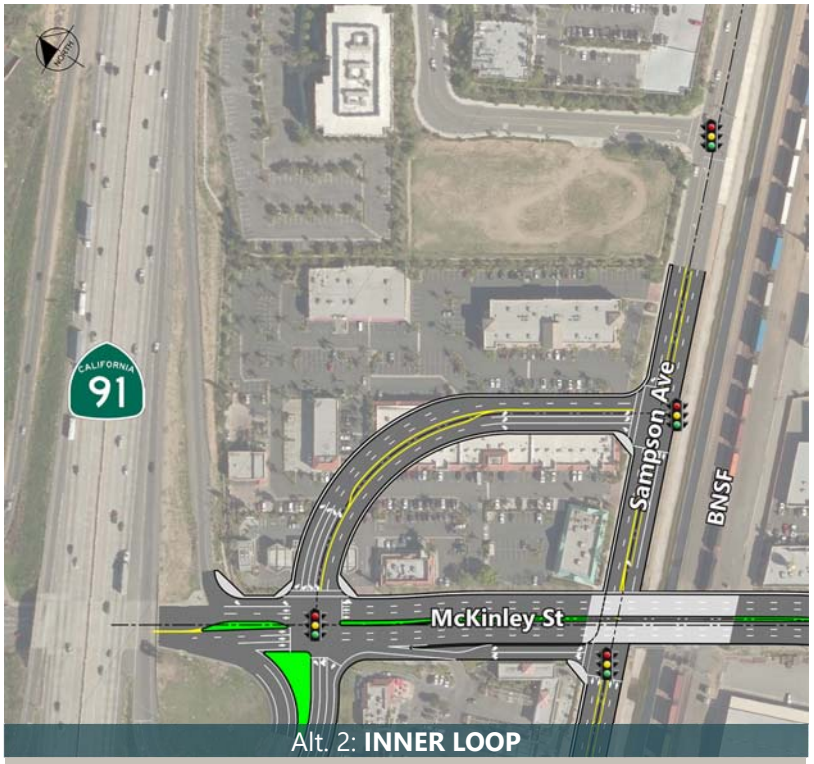
ALTERNATIVES ADVANCED



Alt. 1: **ROUNDABOUT LOOP**

Benefits:
- Avoids all building acquisition and tenant relocation

Challenges:
- Complex coordination with Caltrans
- Access and visibility
- Parking loss



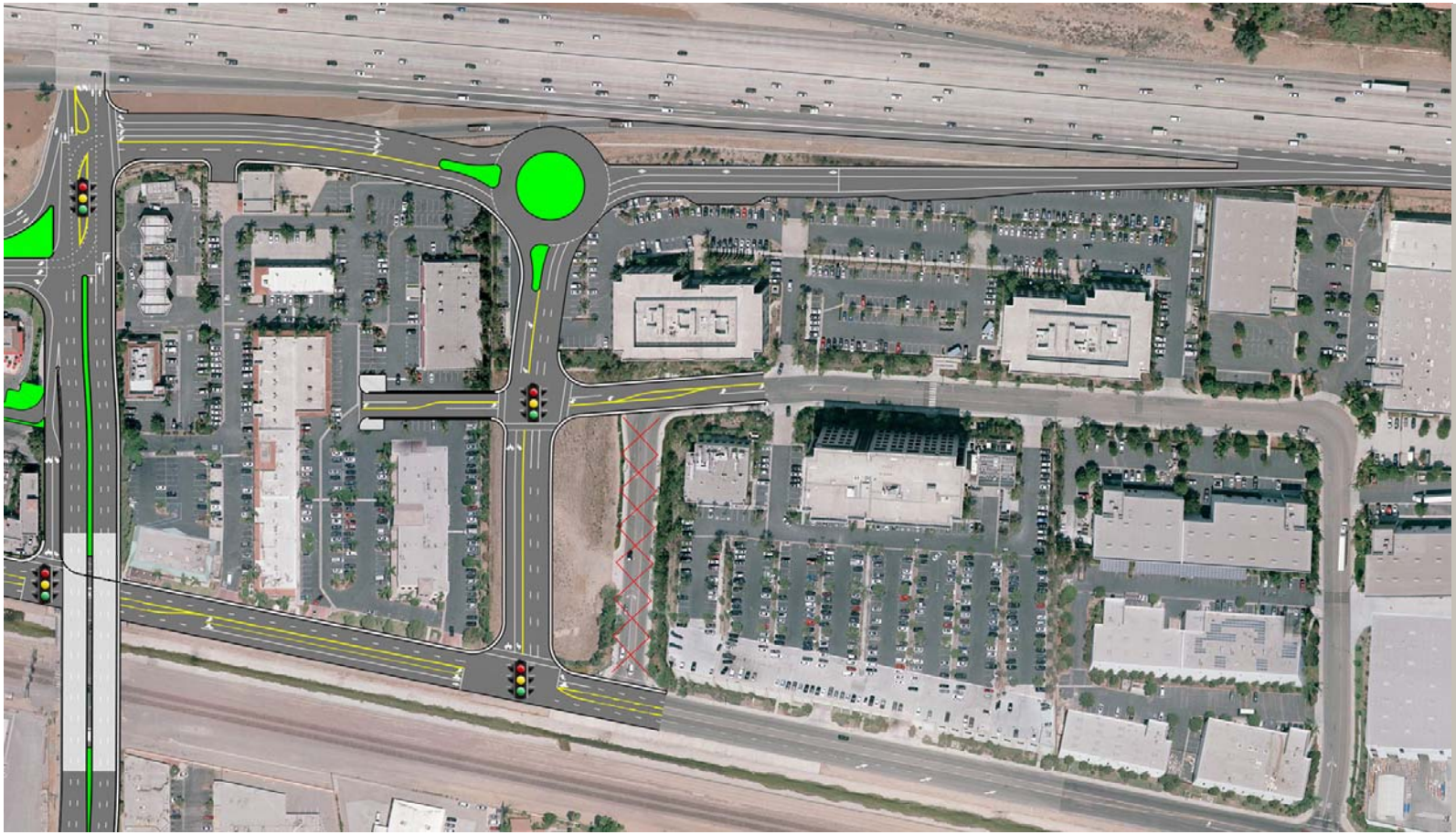
Alt. 2: **INNER LOOP**

Benefits:
- Maintains connector road at-grade
- Preserves visibility and access for remaining buildings

Challenges:
- Building acquisition
- Tenant relocation

ALT. 1: **ROUNDABOUT LOOP**

ALT. 1: **ROUNDABOUT LOOP**



SR-91 EB On-Ramp Configuration:

- 2 mixed-flow lanes
- 1 HOV lane
- Accommodates future widening of SR-91

Advantages:

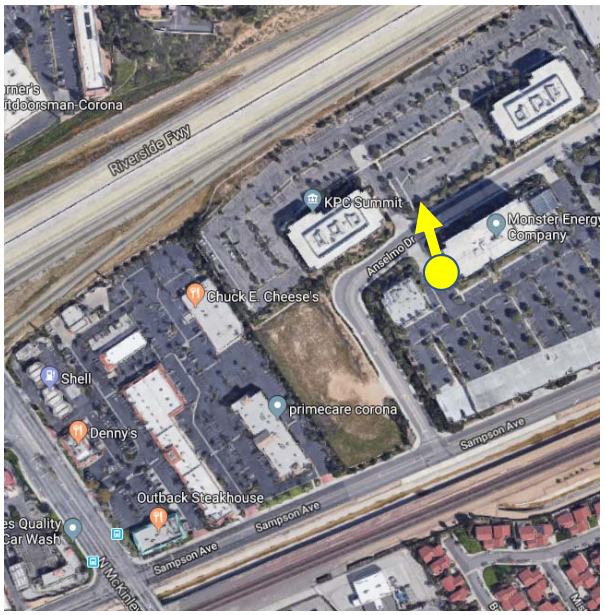
- Avoids buildings
- Removes some traffic from McKinley Street (Sampson to SR-91 EB)

Challenges:

- EB on-ramp realignment requires ~250 parking spaces and clips rear of building on east side
- Offset intersection at McKinley Street
- Access/visibility to Los Arcos Plaza provided from rear (buildings face west)
- Retaining walls

ALT. 1: **ROUNDABOUT LOOP**

PARKING STRUCTURE



- 4-story parking garage
- Temporary impacts during construction
  - Pave vacant lot for temporary parking
  - Provide shuttle service
- Detour SR-91 EB on-ramp during construction

ALT. 1: **ROUNDABOUT LOOP**

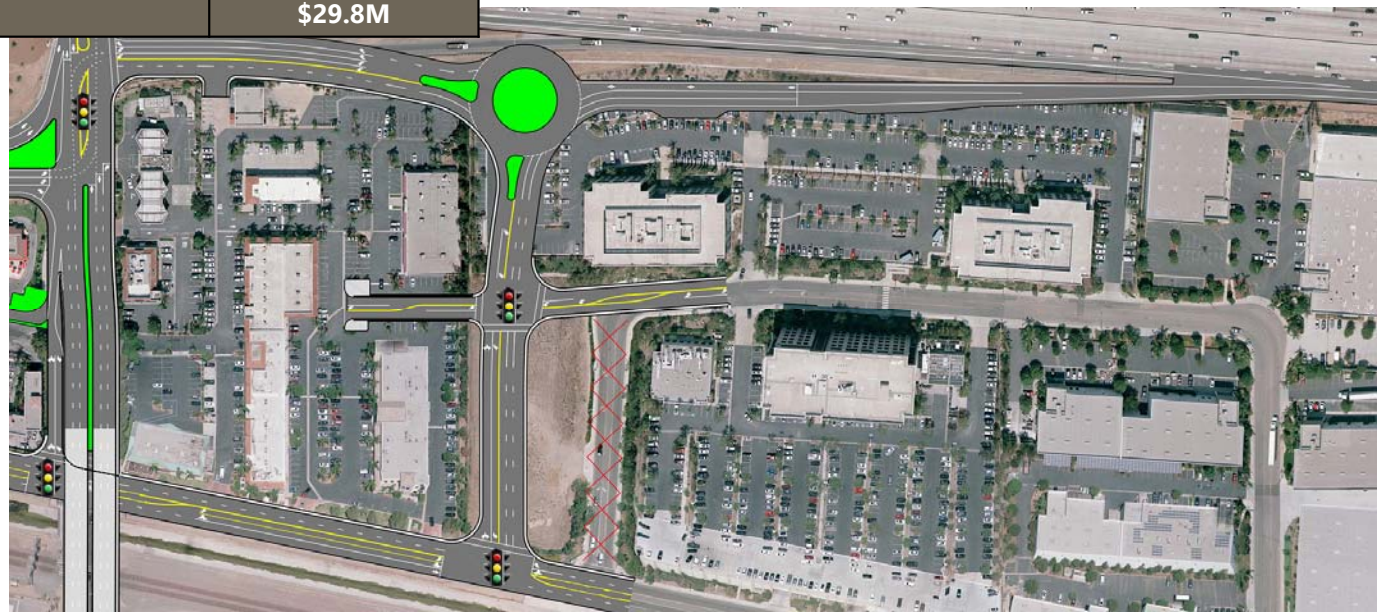
RETAINING WALLS

- Difficult excavation in granite required
- A total of approximately one mile of retaining walls along the connector road and SR-91 EB on-ramp are needed for this alternative
- Construction cost significant, and complicates Streamlined Oversight Process with Caltrans (typically used for projects with a construction cost under $3M within State right-of-way).

ALT. 1: **ROUNDABOUT LOOP**

COST ESTIMATE

	Alt. 1
Roadway/Civil Items	$8.1M
Retaining Walls (Permanent)	$7.8M
Retaining Walls (Temporary) & Grading of Vacant Lot	$1.9M
Parking Structure	$12.0M
Subtotal (Construction Cost)	**$29.8M**



ALT. 2: **INNER LOOP**

ALT. 2: **INNER LOOP**

Configuration:

- Creates new signalized intersection along Sampson Avenue with preferable spacing between intersections
- Access to Los Arcos Plaza anticipated to be provided at intersection in the middle of the connector road

Challenges:

- Building acquisition
- Tenant relocation

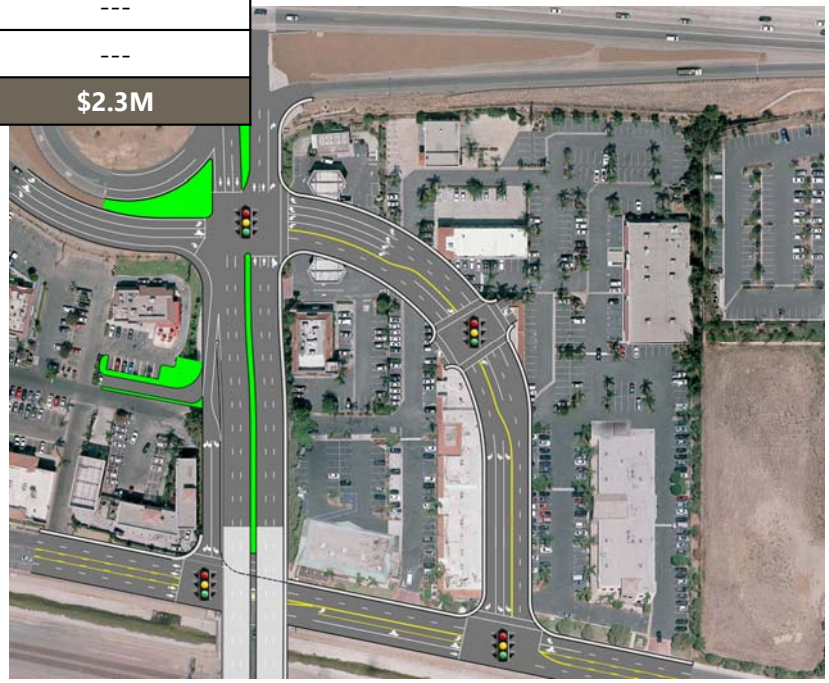
Advantages:

- Caltrans involvement reduced, furthering ability to meet SB-132 schedule deadline
- Maintains connector road at-grade
  - Expensive retaining walls avoided
  - Granite excavation avoided
  - Ability to provide driveway connections to remainder of Los Arcos Plaza
- Improves visibility to remaining businesses within Los Arcos Plaza (building frontage)
- Remnant portions can be used for landscaping, parking, etc.
- Less expensive than Alt. 1: Roundabout Loop

ALT. 2: **INNER LOOP**

COST ESTIMATE

	Alt. 1	Alt. 2
Roadway/Civil Items	$8.1M	$2.3M
Retaining Walls (Permanent)	$7.8M	---
Retaining Walls (Temporary) & Grading of Vacant Lot	$1.9M	---
Parking Structure	$12.0M	---
Subtotal (Construction Cost)	**$29.8M**	**$2.3M**



RECOMMENDED ALT. 2: **INNER LOOP**

RECOMMENDED ALT. 2: **INNER LOOP**

NEXT STEPS

- Advance recommended connector road alternative into Plans, Specifications, and Estimates (PS&E) phase
- Continue one-on-one meetings with property owners and businesses
- Begin appraisals and negotiations with affected property owners
- Solicit input from public and City Council on project aesthetic features

QUESTIONS/DISCUSSION