



McKinley Street Grade Separation

Study Session

March 27, 2019

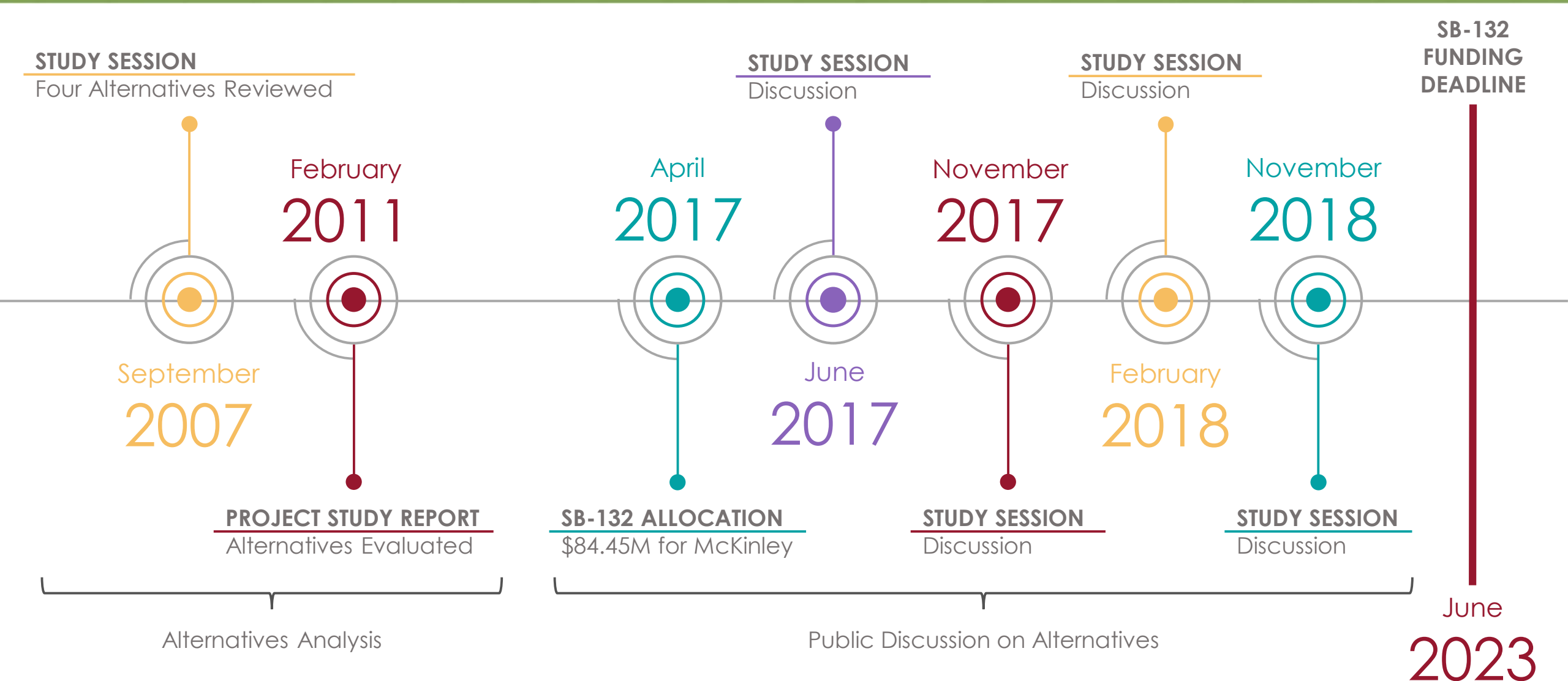


PRESENTATION OUTLINE

- Project Background
 - History / Timeline
 - Project Benefits
 - Current Alternative
- Status Update
 - Project Development
 - Coordination Efforts
- Peer Review
 - March 20 City Council Meeting
 - Discuss Findings
- Next Steps

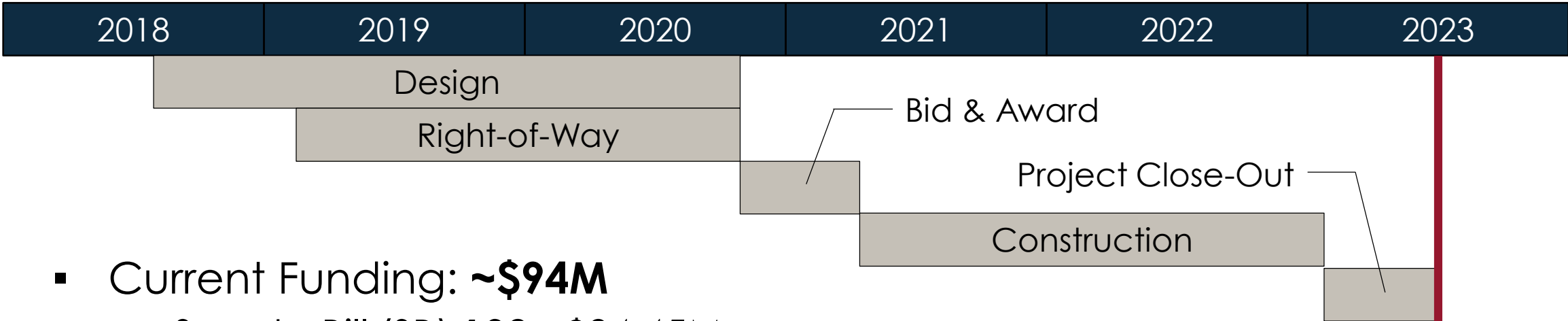


PROJECT BACKGROUND | TIMELINE



PROJECT BACKGROUND | Schedule & Budget

- Per SB 132 funding, project must be completed by June 2023



- Current Funding: **~\$94M**
 - Senate Bill (SB) 132: \$84.45M
 - TDA LTF: \$2.0M
 - WRCOG TUMF: \$1.5M
 - Gas Tax: \$80k
 - Measure A: \$1.0M
 - Railroad Share: \$5.0M (Est.)

Railroad share is 10% of the cost of a theoretical grade separation pursuant to CFR §646.210, and negotiated via a Construction & Maintenance Agreement (in process)

PROJECT BENEFITS | Safety

McKinley Railroad Crossing Accidents Record			
	Accident Type	Position	User Condition
9/20/2016	Pedestrian v. Train	Stopped on crossing	Fatality
1/22/2016	Pedestrian v. Train	Moving over crossing	Fatality
8/3/2005	Bicycle v. Train	Moving over crossing	Fatality
12/4/2001	Auto v. Train	Stopped on crossing	Injury
5/16/2001	Truck v. Train	Moving over crossing	Vehicle Damage Only
2/24/2001	Truck v. Train	Stopped on crossing	Vehicle Damage Only
2/15/2000	Pedestrian v. Train	Stopped on crossing	Fatality
8/13/1983	Pedestrian v. Train	Moving over crossing	Injury

Source: Federal Railroad Administration

PROJECT BENEFITS | Traffic Congestion Relief

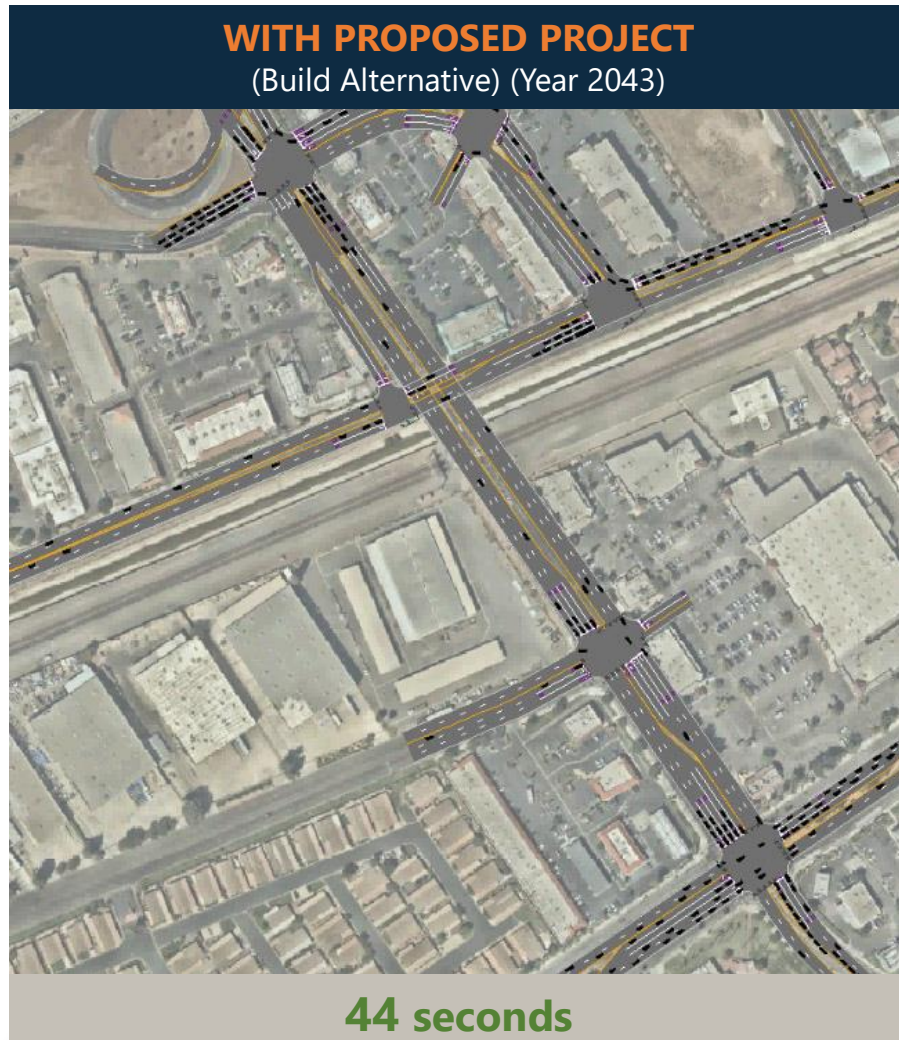
- Grade crossing causes significant delays: gate-down time
- Train volume and number of train cars will continue to grow

Train Volumes (Per Day)				
	Freight	Metrolink	Amtrak	Total
2019 (Estimated)	58	29	3	90
2035 (Projected)	91	42	4	137

Gate-Down Time (Per Day)	
2019 (Estimated)	2 hours 40 minutes
2035 (Projected)	4 hours 20 minutes

Traffic on McKinley Street is projected to be stopped for **over 4 hours per day**

PROJECT BENEFITS | Traffic Congestion Relief



Emergency Response Time

ALTERNATIVES CONSIDERED

ROAD OVER RAIL (Overpass)



Tustin/Rose GS

Current Alternative

ROAD UNDER RAIL (Underpass)



Clark Ave GS

Feasible?

Not Preferred



San Gabriel Trench

RAIL UNDER ROAD (Trench)

Not Preferred



North Milliken GS

RAIL OVER ROAD (Track Flyover)

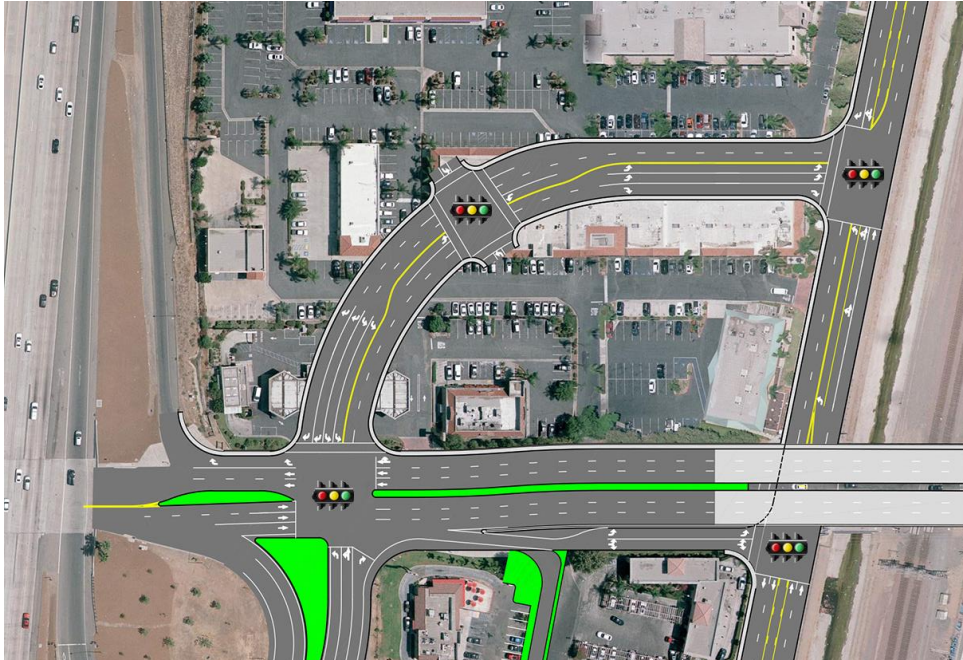
CURRENT ALTERNATIVE



CURRENT ALTERNATIVE



CURRENT ALTERNATIVE



- Elevates McKinley Street over the railroad tracks and flood control channel
- Maintains access to Sampson Avenue via:
 - A side ramp on the west side of McKinley Street servicing McKinley SB traffic
 - A loop road servicing traffic from the SR-91 EB off-ramp, and traffic heading from Sampson to McKinley
- Uses an innovative bridge type that:
 - Clear spans the railroad, the channel, and Sampson Avenue
 - Keeps the height that McKinley must be raised minimized
 - This concept reduces overall construction time at least 6 months
- Able to meet June 2023 funding deadline

CURRENT ALTERNATIVE

- Numerous alternatives analyzed for McKinley-Sampson loop road
 - Met with property and business owners to obtain feedback on alternatives
 - Reviewed and discussed results at November 2018 Study Session
 - Selected alternative requires 1 full property acquisition and several partial acquisitions
- Goal: Preserve businesses, visibility, access and improve circulation.
- Innovations:
 - Bridge type allows building off-site and moving into place overnight, reducing impacts to businesses and traveling public
 - Approaches use precast concrete elements, improving speed of construction

INNOVATIVE SOLUTIONS

- Innovative solutions focus on solving issues and impact to businesses while controlling costs:
 - Solve challenges with relocating/reconfiguring the Arlington Channel.
 - Minimize impacts to vehicular, pedestrian, and cyclist traffic during construction.
 - Mitigate impacts to local businesses.
 - Reduce the overall duration of construction.
- Innovative solutions reduce impacts and streamline approvals, **ensuring ability to meet SB-132 funding deadline.**

PROGRESS TO-DATE

- Meetings with affected property and business owners
- Coordination with BNSF Railway, Caltrans, RCFC&WCD, and other agencies:
 - BNSF Construction & Maintenance Agreement in process
 - Following Streamlined Oversight Process with Caltrans
 - RCFC&WCD Encroachment Permit (with this concept)
- Utility meetings with third-party utility companies
- 35% submission
- Finalizing right-of-way requirements (in process)
- Next Step: Optimize and further analyze design to refine project cost

35% COST ESTIMATE

- Available Funding: ~\$94M
- 35% Estimate: \$112M
 - Includes \$7M contingency on construction costs
 - Includes another \$3M in contingencies on miscellaneous project costs and escalation
- Previous cost estimates for this concept:
 - 2008 RCTC Grade Separation Funding Strategy: \$109.2M
 - 2017 Independent Cost Estimate: \$100.5M (2/28/18 Study Session)
- Strategy:
 - Seek additional funding from statewide competitive programs that commonly fund grade separation projects
 - Continue evaluating innovative and cost controlling measures to reduce project cost
 - Independent Peer Review and Value Engineering

INDEPENDENT PEER REVIEW

- Peer Review Team
 - Ad Hoc Committee: Councilmembers Casillas and Speake
 - Consultants: Juan Diaz & Viren Shah
- Performed excellent review within an expedited timeframe
- Findings presented at March 20 City Council meeting
- Design Team concurs that:
 - Overpass is the most feasible option.
 - Flyover is too expensive (confirmed by a number of estimates).
 - Underpasses typically have a smaller footprint.
 - The Peer Review Team correctly identified why the Design Team did not favor an Underpass (adjacent channel), and offered an innovative concept for the Underpass.

INDEPENDENT PEER REVIEW

- Peer Review Team correctly identified Cost as a Project challenge
 - Are there other innovative ideas to reduce cost?
- Peer Review Team proposed some very creative, out-of-the box ideas:
 - Underpass under Arlington Channel
 - Four Lanes w/Frontage Roads
 - Request BNSF Design Exception: Column in ROW
- Peer Review Team also proposed Value Engineering (VE) Workshop
 - Screening of other alternatives
- **Council Direction: Schedule VE Workshop**
- Design Team will carefully evaluate Peer Review Team ideas
- Additional evaluation of Peer Review Team alternatives by VE Team

UNDERPASS ALTERNATIVE



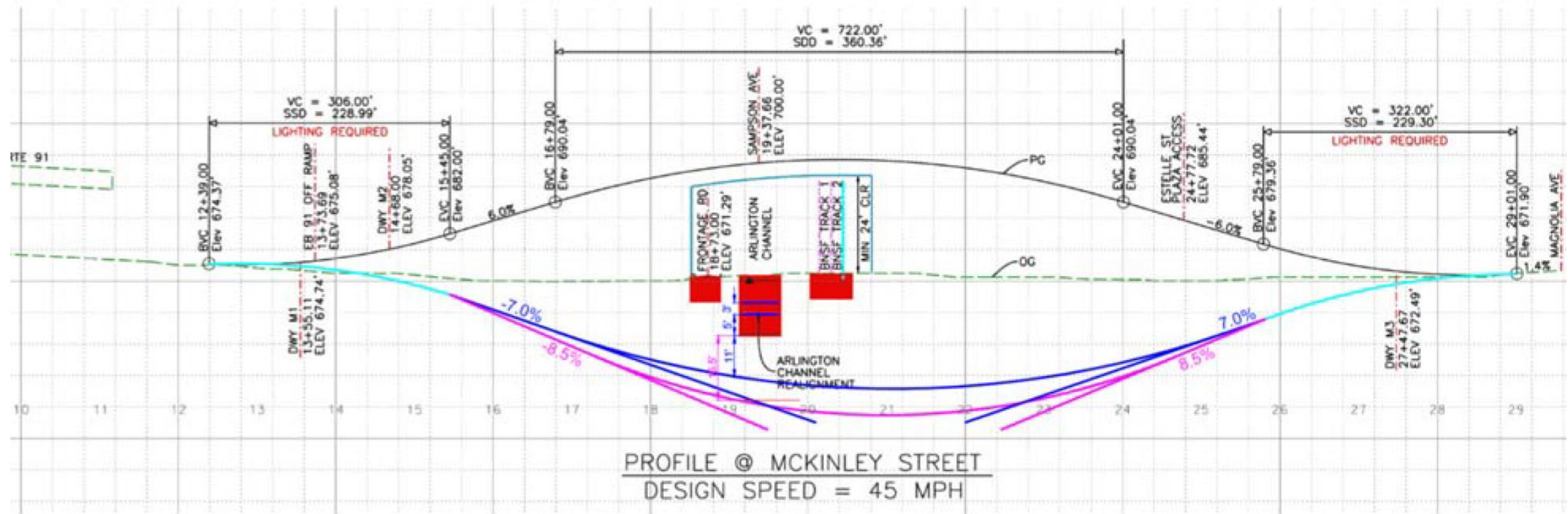
Screening Criteria:

Arlington Channel makes this a challenging site for an Underpass. Design Team will consider:

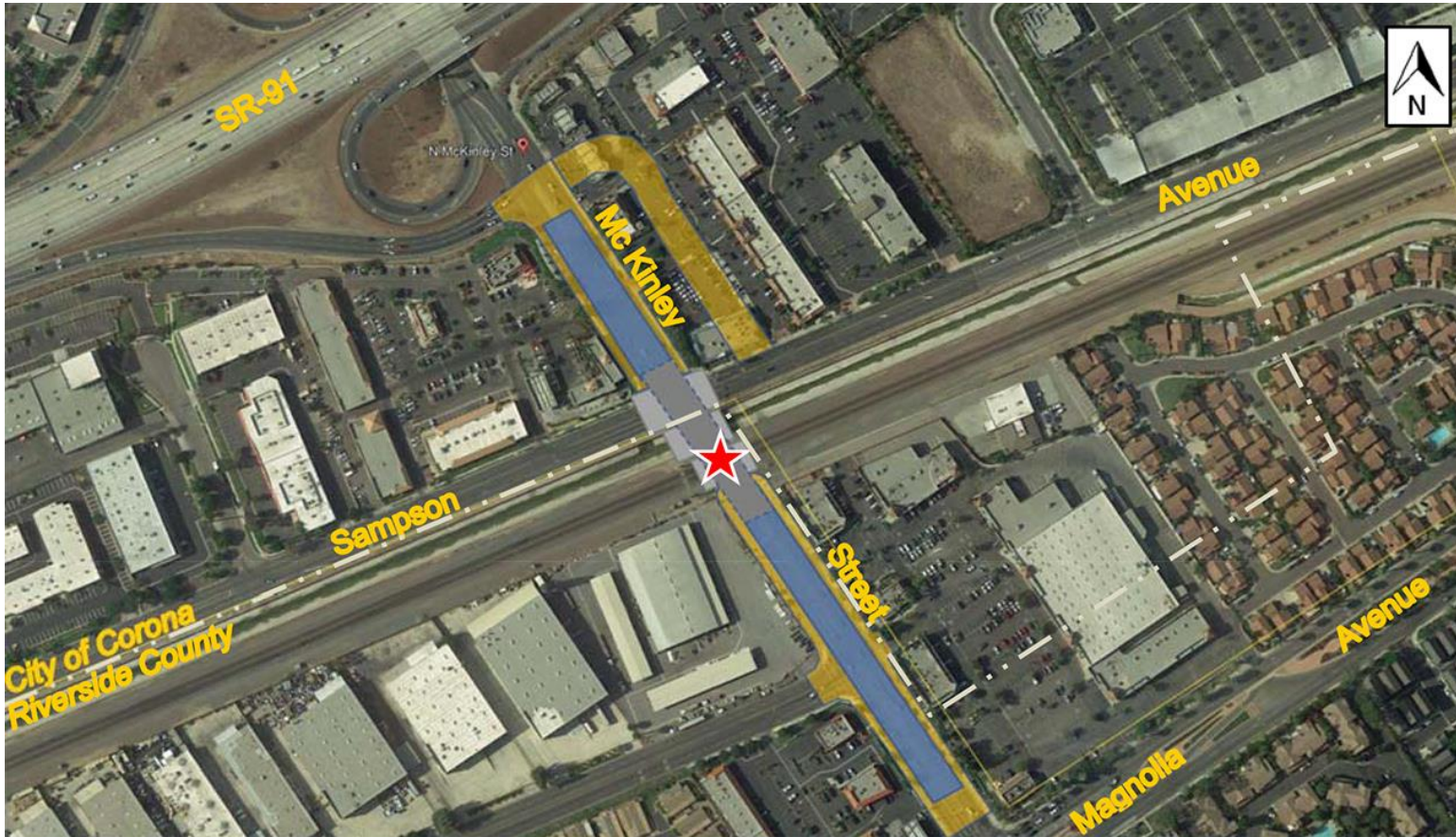
- Depth of Road
- RCFC&WCD Approval
- Constructability
- Resulting Footprint
- Impacts to SR-91
- Access & Visibility

UNDERPASS ALTERNATIVE

- Arlington Channel eliminates “Smaller Footprint” benefit of Underpass
- Investigate raising channel bottom to accommodate Underpass



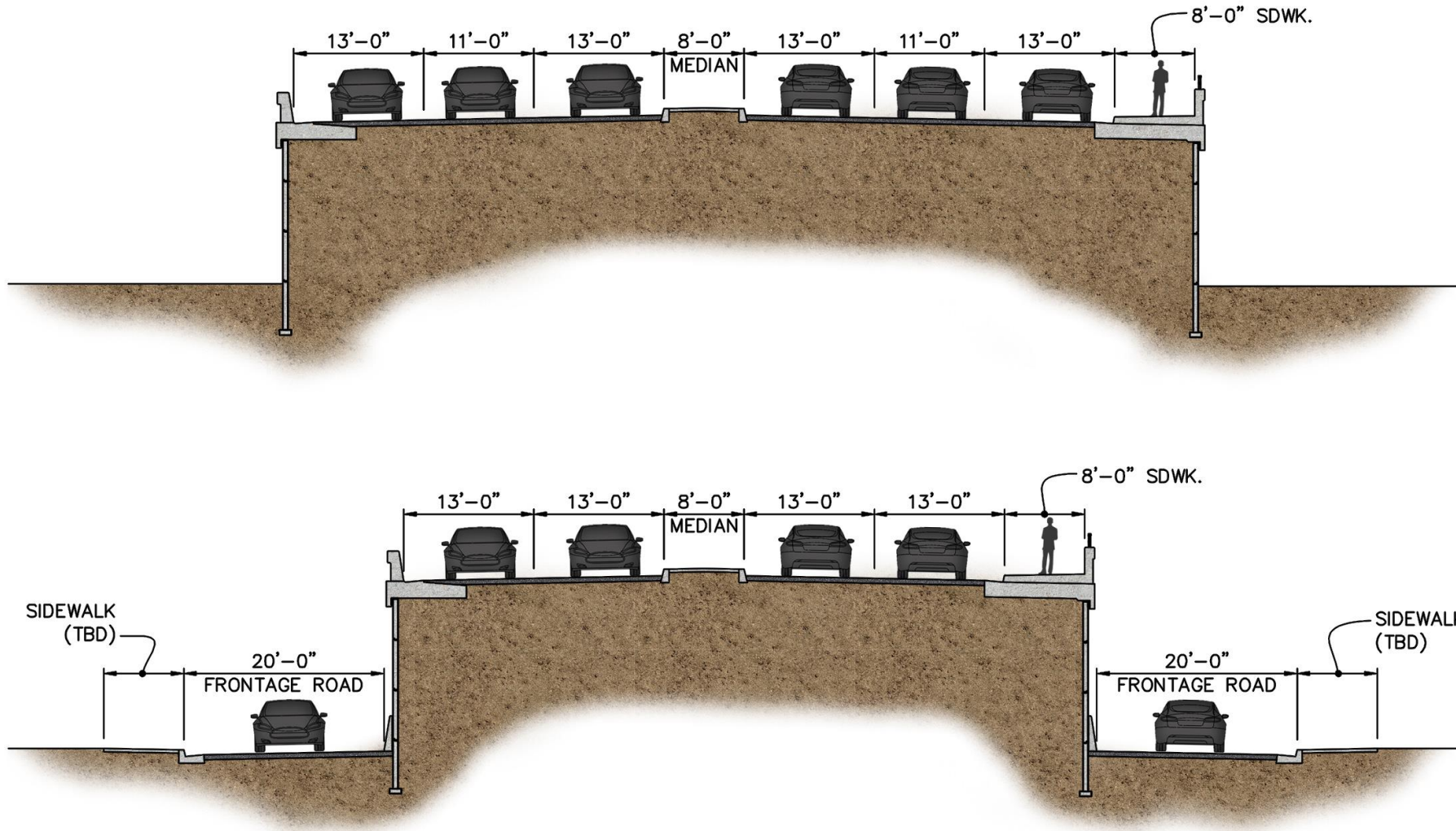
FOUR LANES WITH FRONTAGE ROADS



Screening Criteria:

- Impacts to Adjacent Buildings
- Maintaining Traffic Circulation Patterns
- Truck Turning
- Future Traffic Volumes
- Adjacent Intersection Operations

FOUR LANES WITH FRONTAGE ROADS



- Coordinate Frontage Road requirements with Fire Department
- Sidewalks may be required adjacent to Frontage Roads
- Evaluate w.r.t. Right-of-Way

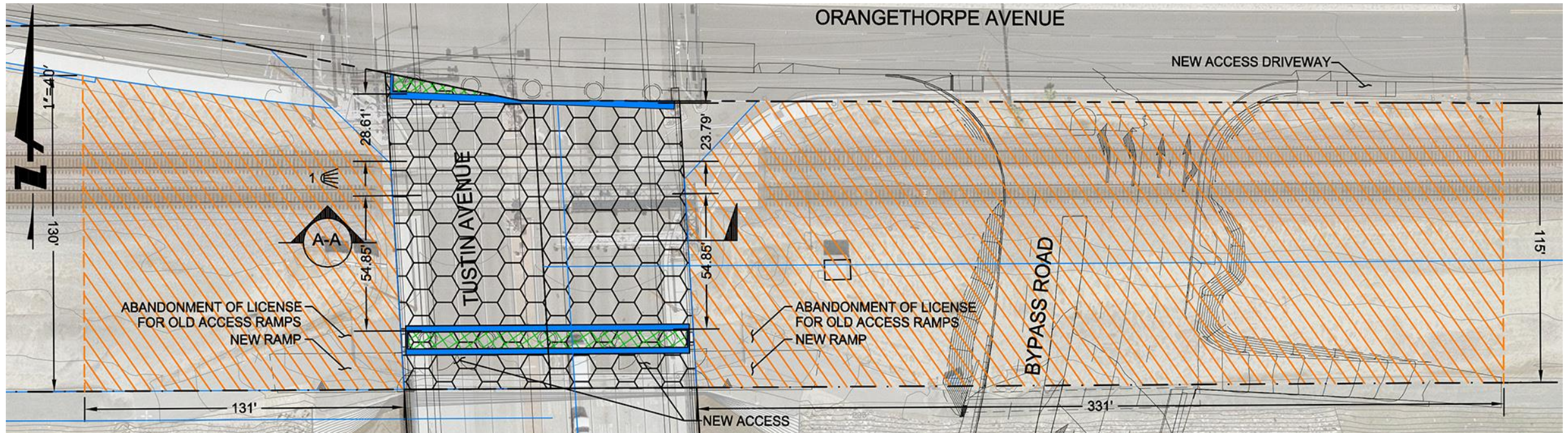
REQUEST BNSF DESIGN EXCEPTIONS

- Exception for bridge supports within railroad right-of-way to avoid channel relocation.
- Tustin-Rose is an example where BNSF permitted bridge supports within right-of-way:

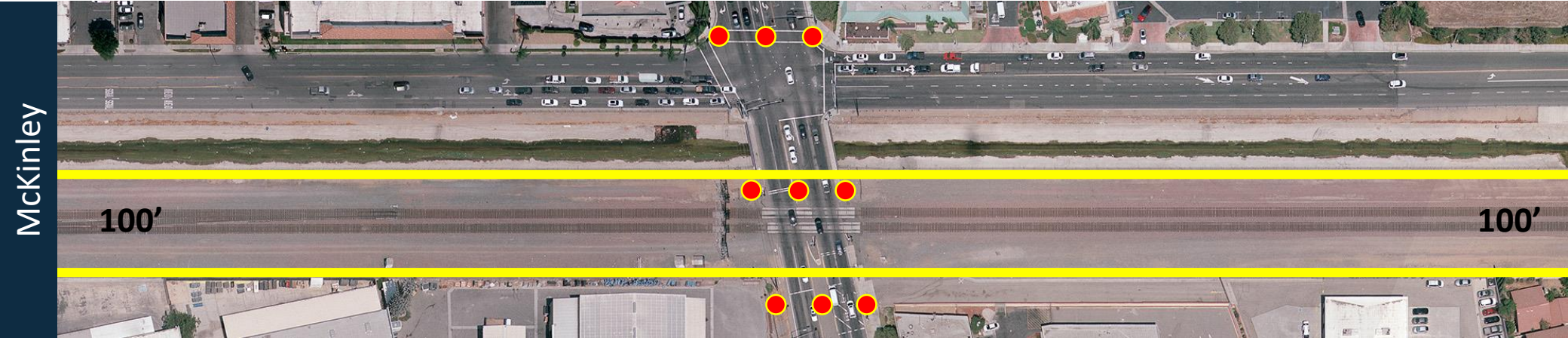
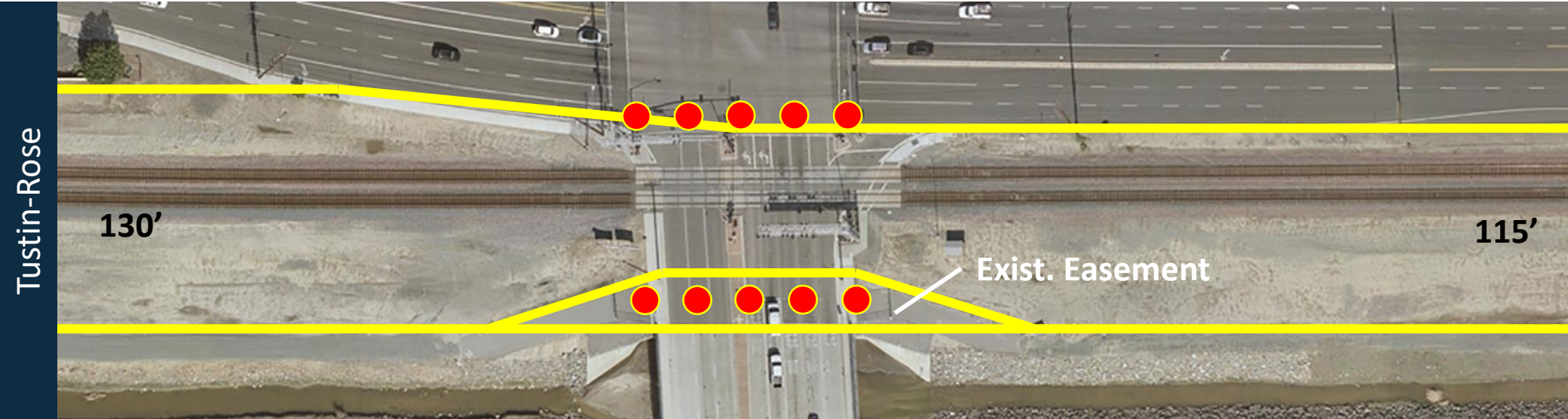


REQUEST BNSF DESIGN EXCEPTIONS

- Tustin-Rose: BNSF right-of-way is wider, and areas where columns were located are not usable by the railroad.
- Exception will be more difficult for McKinley where full right-of-way is usable by the railroad.



REQUEST BNSF DESIGN EXCEPTIONS



INNOVATIVE SOLUTIONS



- Conventional bridge would require relocating the Arlington Flood Control Channel to permit installation of new supporting structural columns

INNOVATIVE SOLUTIONS



- Arch can clear span flood control channel and railroad, but keeps profile lower, preserving circulation, access and visibility to local businesses

INNOVATIVE SOLUTIONS



- Bridge built in staging area then moved into place using Self-Propelled Modular Transporters (SPMTs)
- SPMT move done in a few hours (overnight)
- Dramatic reduction in impacts to businesses and public during construction

NEXT STEPS

- Work with VE Team to further analyze alternatives presented by the Peer Review Team:
 - Our schedule with current alternative provides 6 months of "cushion"
 - Conventional structure, or any major change would take up those 6 months.
 - Time is of the essence.
 - Full VE Study cycle (including decision to adopt ideas), needs to take less than 2 months. Schedule recovery still possible.
- Because schedule is so critical, don't want to lose 6 month "cushion"
 - Continue advancing current alternative in parallel with VE
 - Continue working with impacted property owners, businesses, and other stakeholders

NEXT STEPS

- Closing funding gap is very achievable
- Tremendous political will at State level (SB 132 coordinator) to help
- Work with City and Caltrans to apply for additional funding:
 - CPUC Section 190: Funds grade separation projects based on priority list:
 - \$5 Million virtually guaranteed; \$15 Million feasible
 - SB-1 Trade Corridor Enhancement Program (TCEP): Cycle 1 funded a number of grade separation projects:
 - Typical funded application in range of \$25 million +
- Must meet the June 2023 deadline for the \$84.45M in SB-132 funding



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