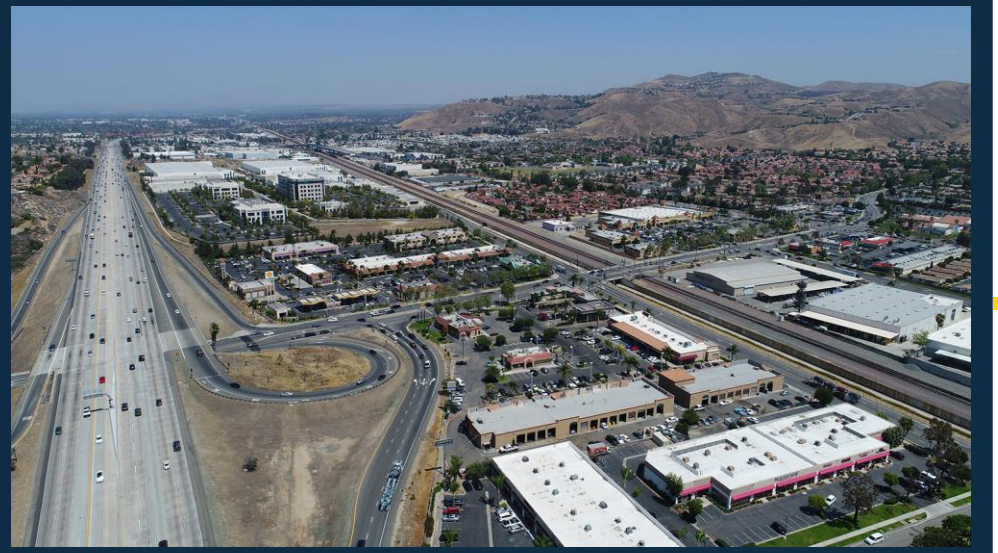
McKinley Street Grade Separation

Study Session

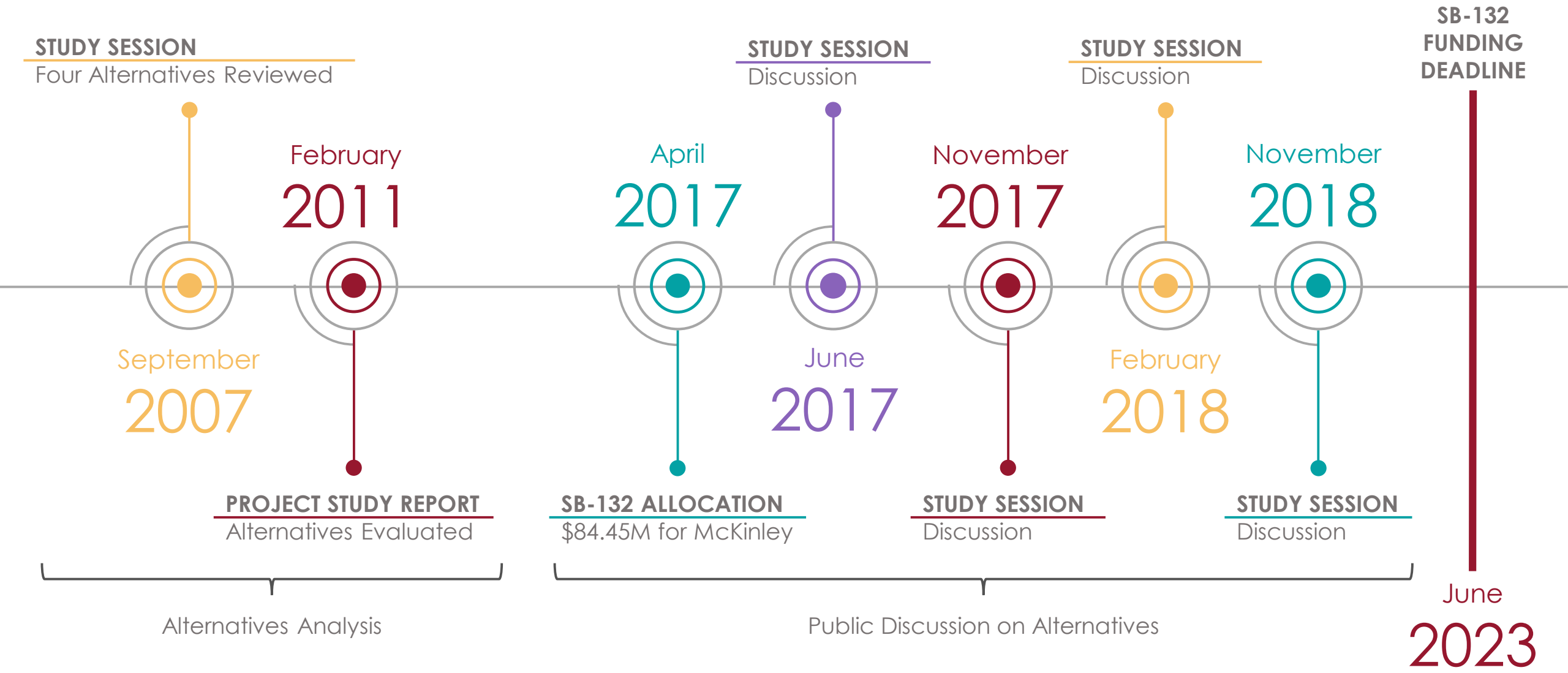
March 27, 2019



PRESENTATION OUTLINE

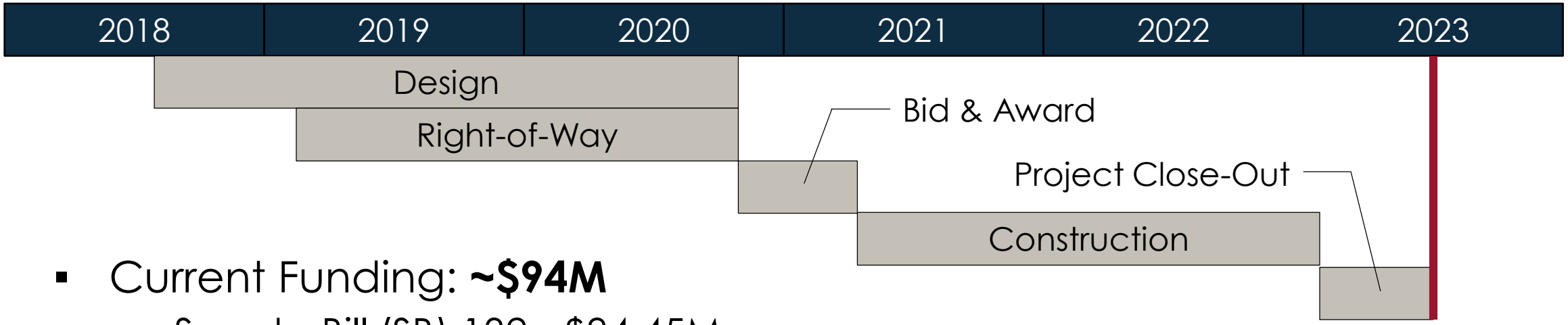
- Project Background
  - History / Timeline
  - Project Benefits
  - Current Alternative
- Status Update
  - Project Development
  - Coordination Efforts
- Peer Review
  - March 20 City Council Meeting
  - Discuss Findings
- Next Steps

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

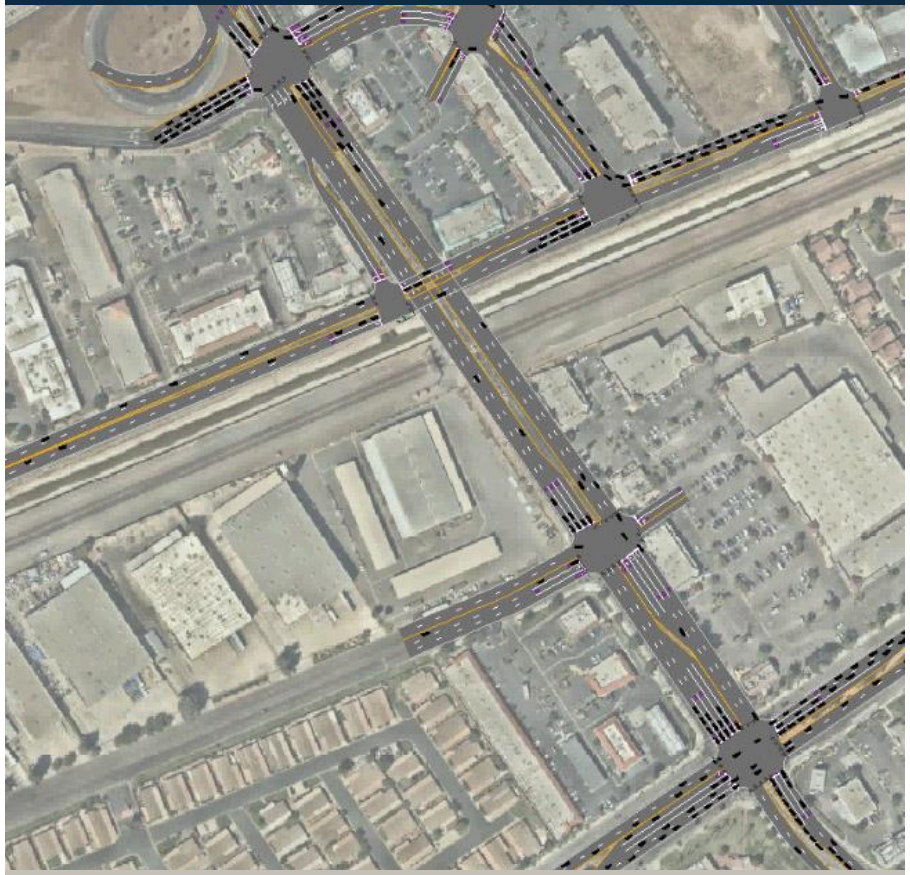
Train Volumes (Per Day)				
	Freight	Metrolink	Amtrak	Total
2019 (Estimated)	58	29	3	**90**
2035 (Projected)	91	42	4	**137**

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

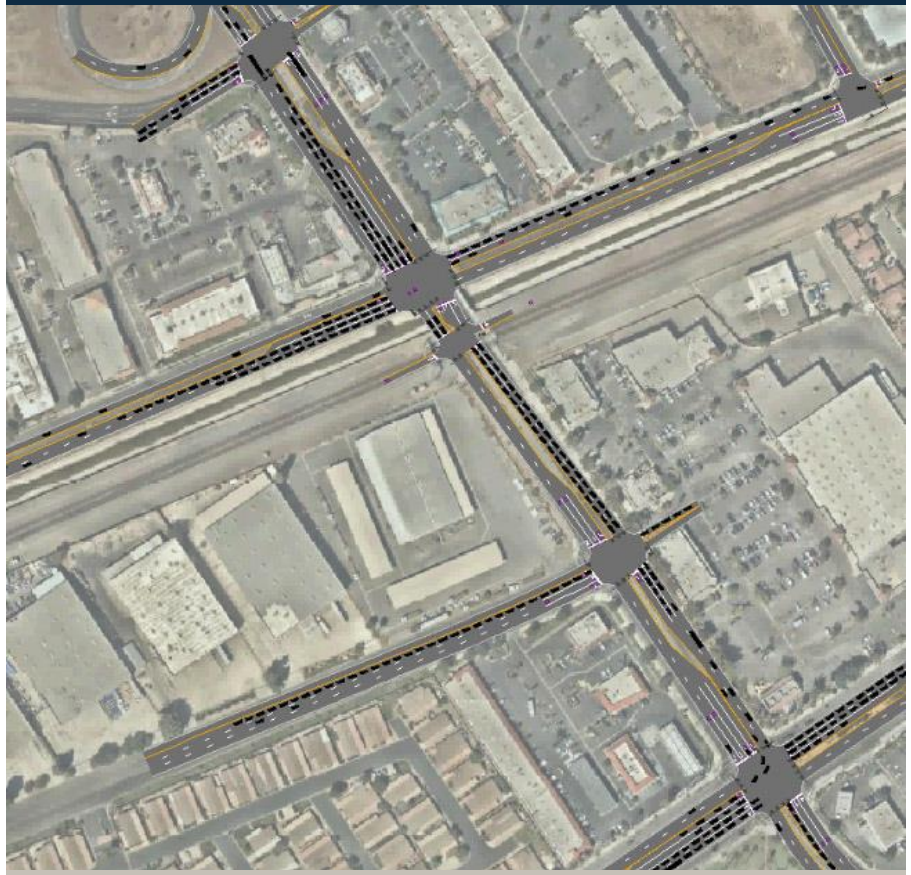
PROJECT BENEFITS | Traffic Congestion Relief

WITH PROPOSED PROJECT
(Build Alternative) (Year 2043)



44 seconds

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



5 minutes 20 seconds

Emergency Response Time

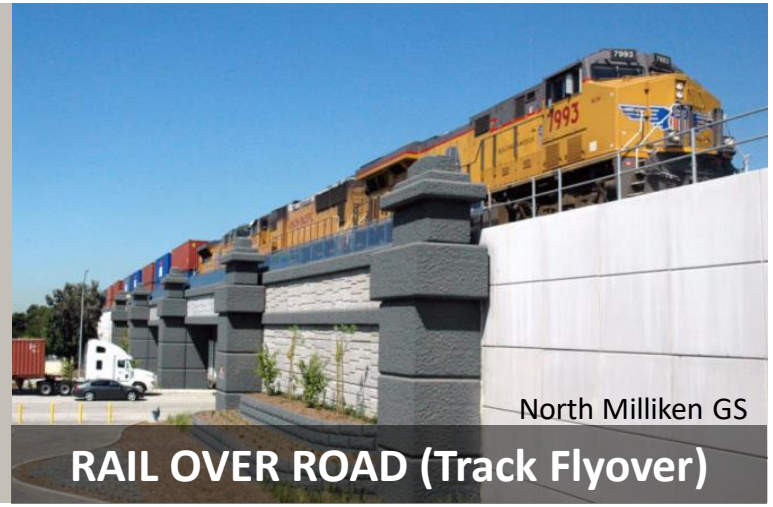
ALTERNATIVES CONSIDERED

Current Alternative

Feasible?

Not Preferred

Not Preferred



CURRENT ALTERNATIVE

CURRENT ALTERNATIVE

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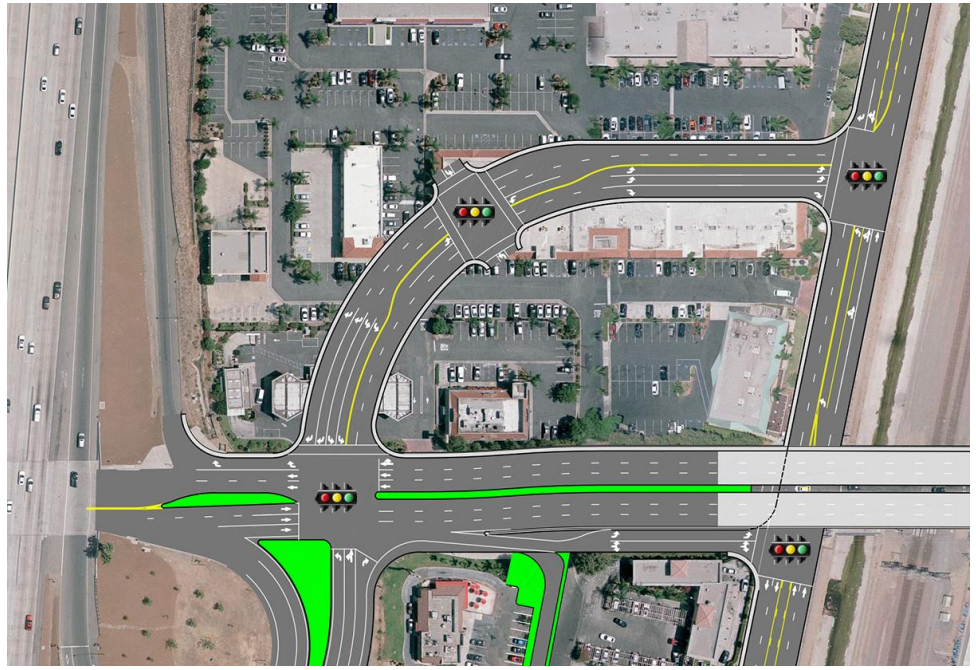


- Elevates McKinley Street over the railroad tracks and flood control channel
- Maintains access to Sampson Avenue via:
  - A side ramp on the west side of McKinley Street servicing McKinley SB traffic
  - A loop road servicing traffic from the SR-91 EB off-ramp, and traffic heading from Sampson to McKinley
- 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?

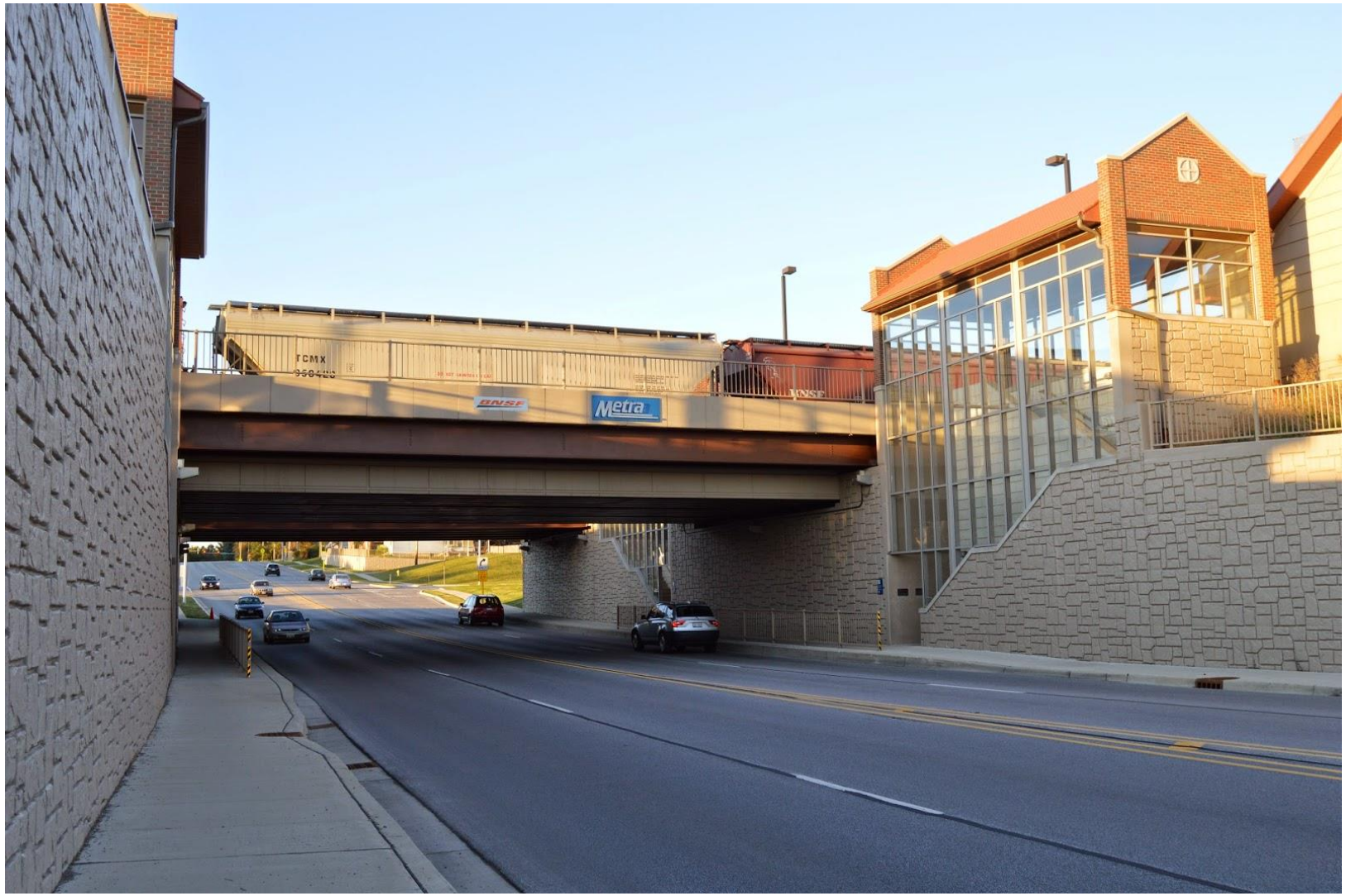
- Peer Review Team proposed some very creative, out-of-the box ideas:
  - Underpass under Arlington Channel
  - Four Lanes w/Frontage Roads
  - Request BNSF Design Exception: Column in ROW

- 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



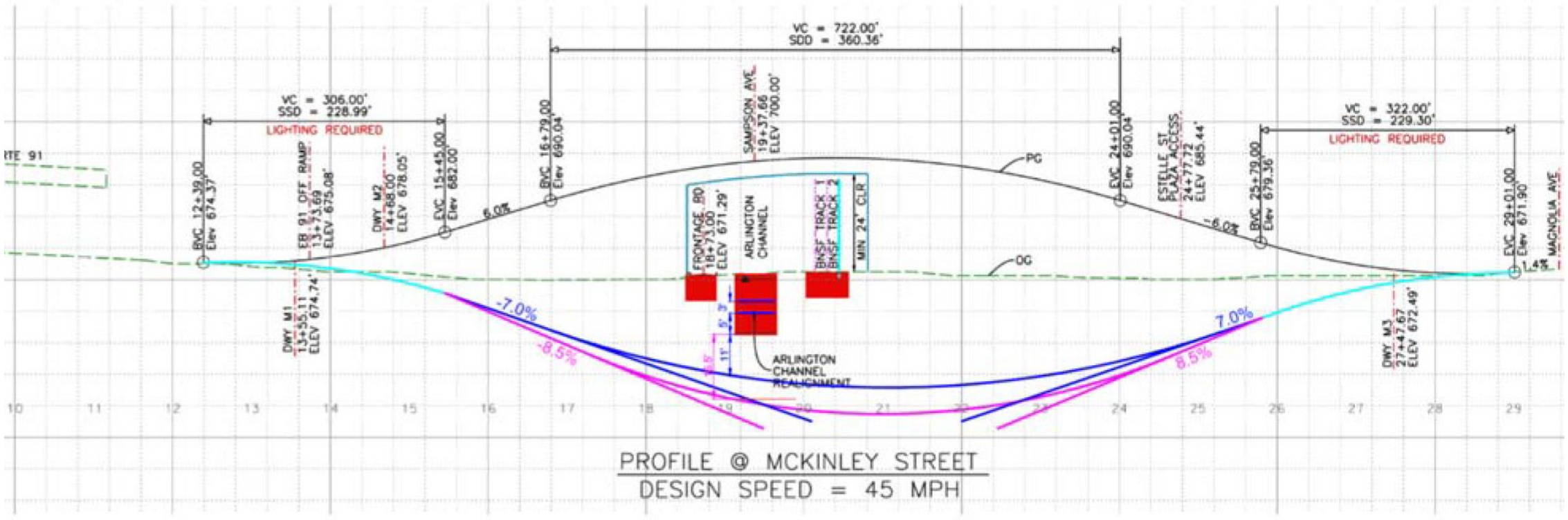
Screening Criteria:

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

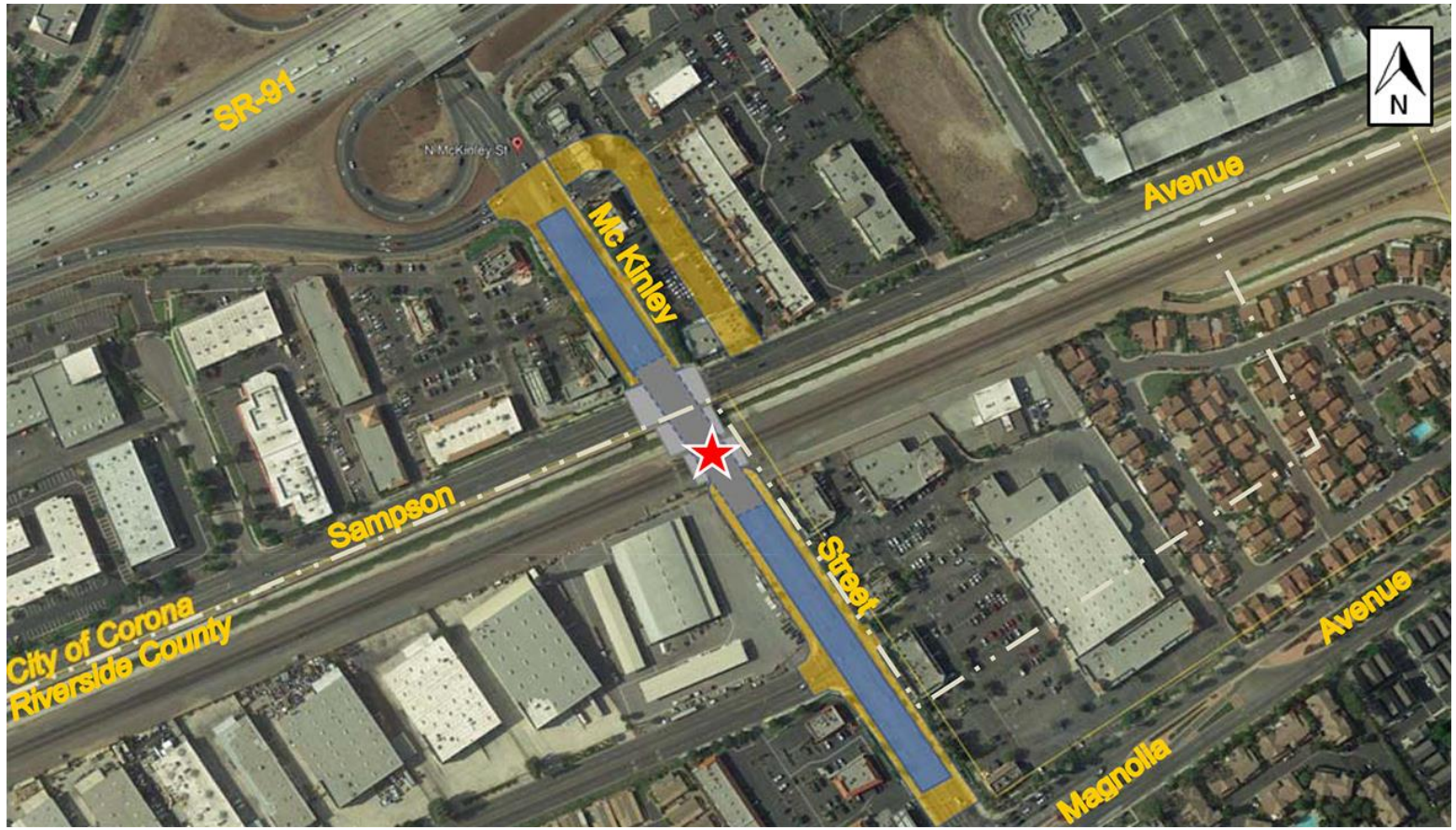
- Depth of Road
- RCFC&WCD Approval
- Constructability
- Resulting Footprint
- Impacts to SR-91
- Access & Visibility

UNDERPASS ALTERNATIVE

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



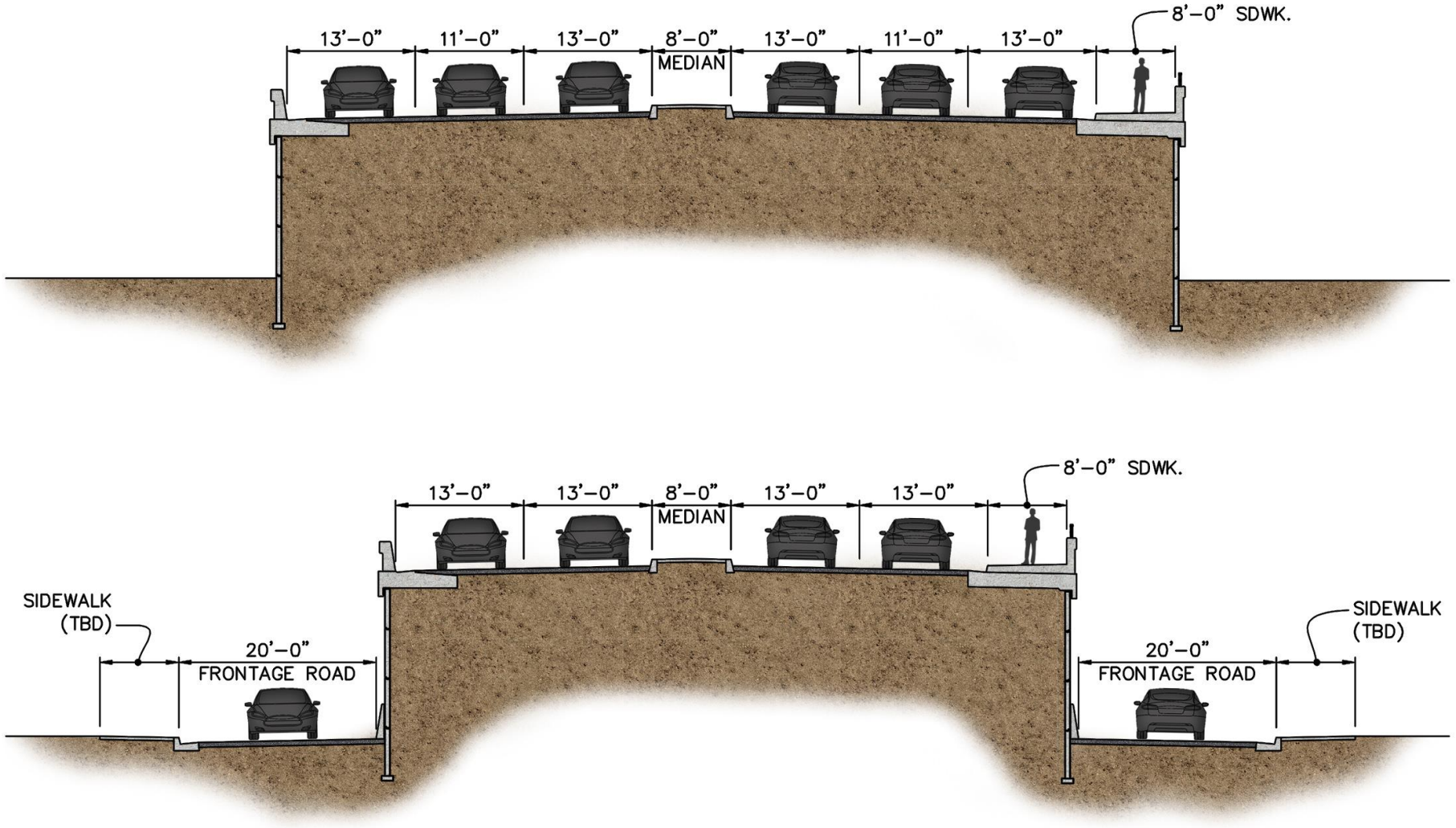
FOUR LANES WITH FRONTAGE ROADS



Screening Criteria:

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

FOUR LANES WITH FRONTAGE ROADS



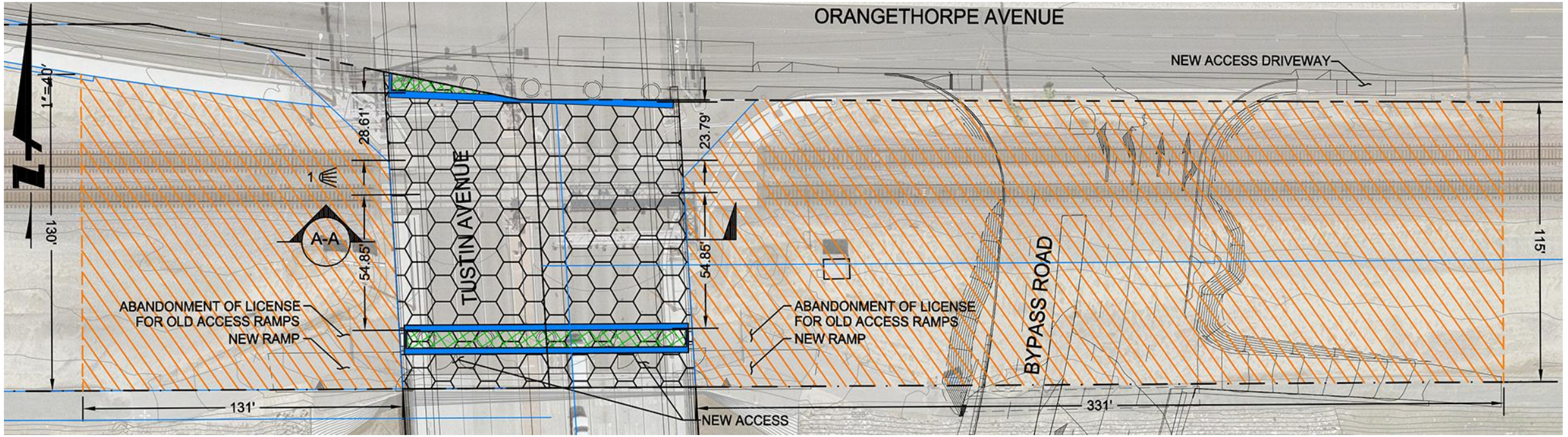
- Coordinate Frontage Road requirements with Fire Department
- Sidewalks may be required adjacent to Frontage Roads
- Evaluate w.r.t. Right-of-Way

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.



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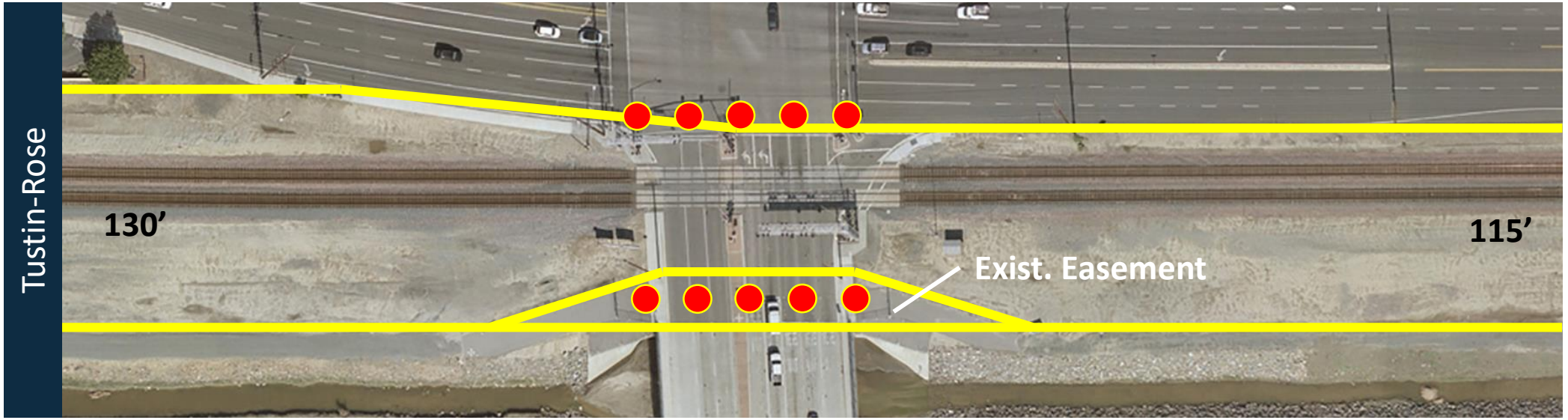

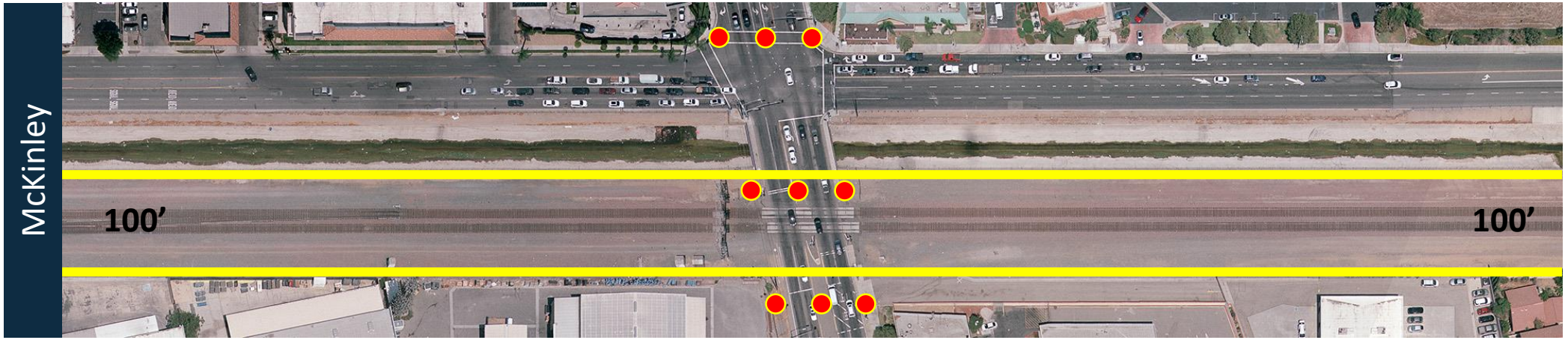

INNOVATIVE SOLUTIONS

- 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 acheivable
- 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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