



McKinley Grade Separation Peer Review Ad Hoc Committee

PEER REVIEW TEAM REPORT

March 20, 2019

THE AD HOC COMMITTEE



- **Created January 16, 2019**
 - **Jacque Casillas, Council Member**
 - **Wes Speake, Council Member**
- **Overall Purpose – Independent Look**
 - **Rail Over Road**
 - **Reasonable Range of Feasible Alternatives**

THE PEER REVIEW TEAM

- **Juan Diaz, MBA, P.E.**

- 30+ Years Civil Engineering Experience
- Registered Professional Engineer
- Grade Sep Expert (20 + Projects)
- Former Technical Advisor, Alameda Corridor-East Construction Authority
- Former Metrolink Public Projects Engineer
- Expert Witness to UPRR & BNSF
- Railroad Engineering Faculty, Cal Poly Pomona
- President & CEO, JMDiaz, Inc. (JMD)
- Full Service Firm Since 2001
- 22 Employees & 3 Offices (LA~OC~SD)

- **Viren Shah, Engineer**

- 40+ Years Experience
- Public & Private Sector
- Interwest Consulting Group
- President, VAS, Inc.



THE WORK PLAN

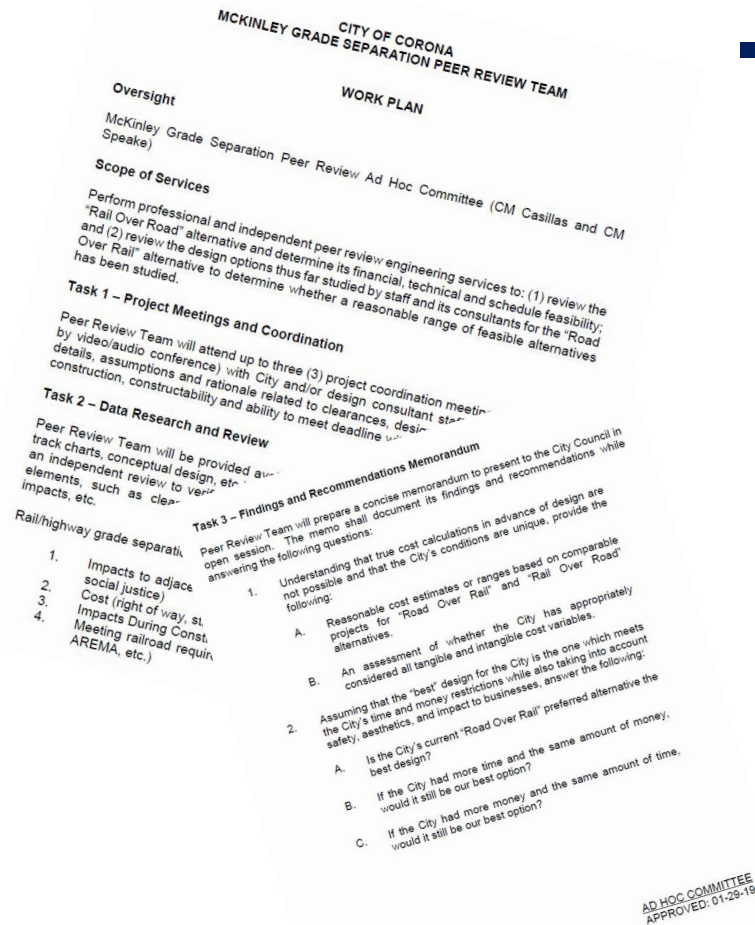
■ Guiding Questions

■ **ASSUME: True Cost Calculations Not Possible & Conditions Unique**

- ~ Provide Cost Estimates or Ranges for “Road Over Rail” & “Rail Over Road”
- ~ Has City Considered All Tangible & Intangible Cost Variables?

■ **ASSUME: “Best” Design = Meets Time & Money and Considers Safety/Aesthetics/ Business Impacts**

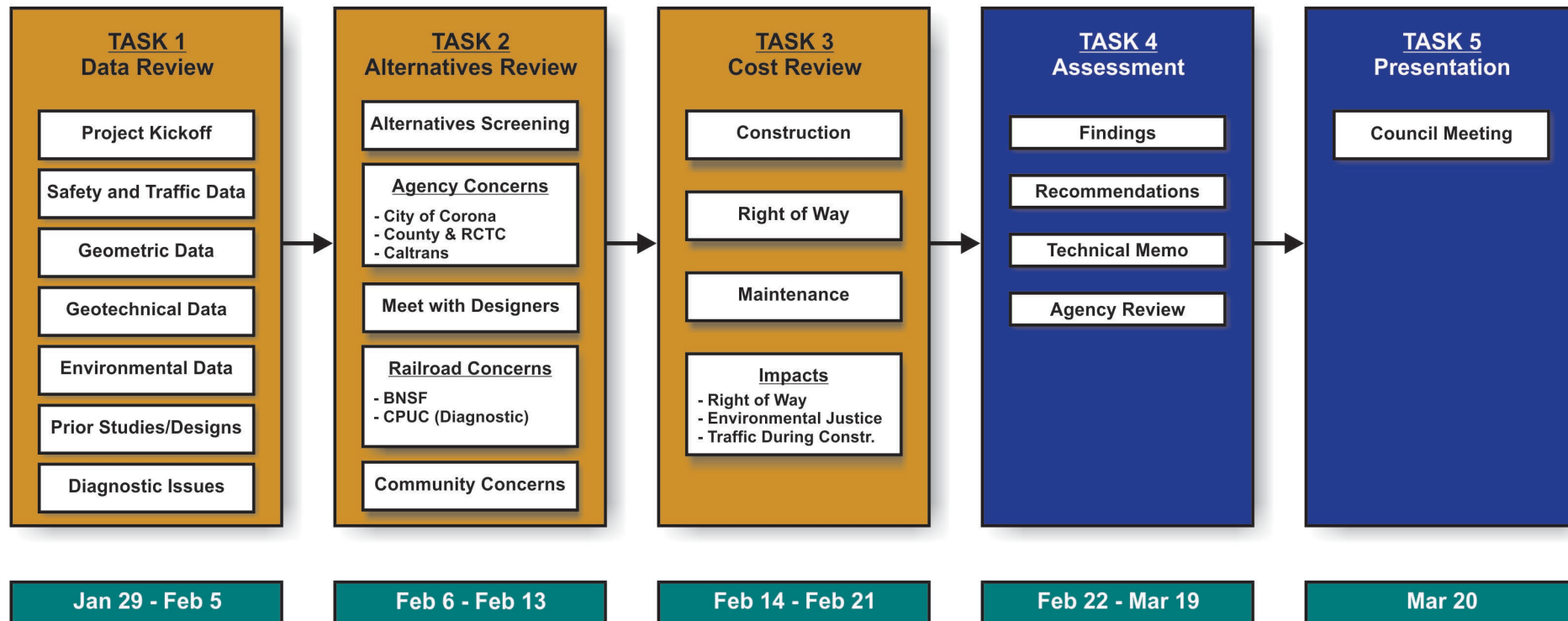
- ~ Current Road Over Rail Design = Best?
- ~ More Time/Same Money = Still Best?
- ~ Same Time/More Money = Still Best?



TEAM REPORT - METHODOLOGY



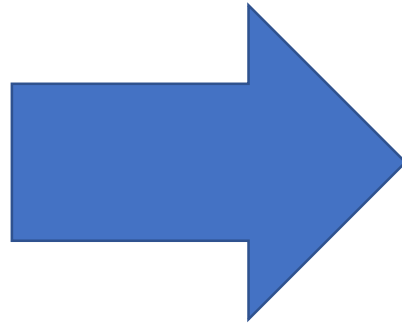
McKinley Street Grade Separation Independent Review and Assessment



TEAM REPORT - MCKINLEY STREET NEEDS

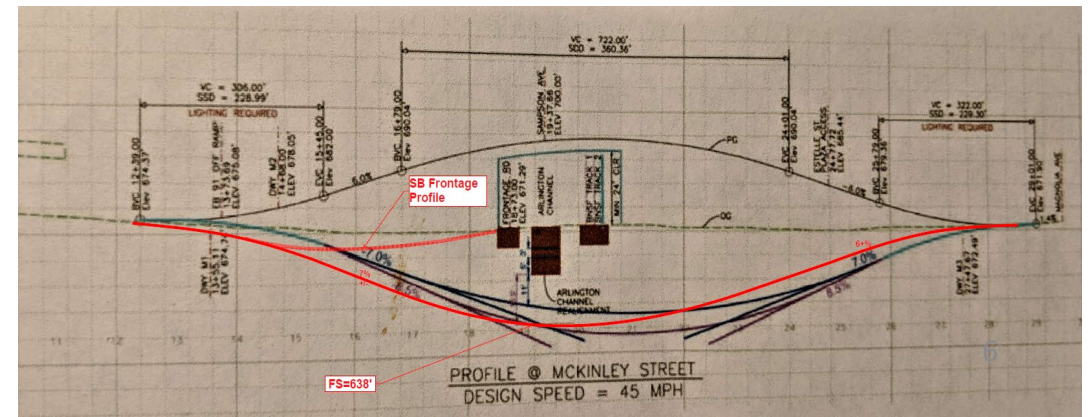


- Safety
- Mobility
- Access
- Visibility
- Noise Relief



- Underpass or Overpass
- Underpass or Overpass
- Underpass or Overpass
- Underpass or Overpass
- Underpass or Overpass

Underpass meets these
if it works geometrically
within cost



TEAM REPORT – REVIEW OF ALTERNATIVES

























2011 PSR ALTERNATIVES

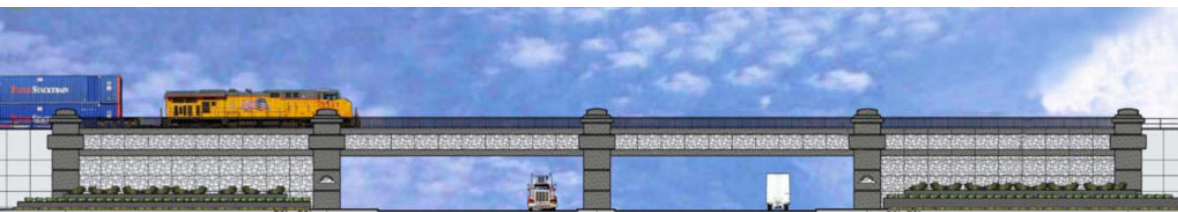
- ALT. 1 - ROAD OVER RAIL - ELEVATED MCKINLEY STREET AND SAMPSON AVENUE
- ALT. 2 - RAIL OVER ROAD
- ALT. 3A - ROAD OVER RAIL (LONGEST CONNECTOR ROAD)
- ALT. 3B - ROAD OVER RAIL (SHORTEST CONNECTOR ROAD)
- ALT. 3C - ROAD OVER RAIL (INTERMEDIATE CONNECTOR ROAD)
- ALT. 4 - ROAD OVER RAIL (ELEVATED MCKINLEY STREET W/ CONNECTION TO SAMPSON AVENUE)

BCA PCR

- AC-04 - OVERPASS – OUTSIDE LOOP
- AC-05 - OVERPASS – INSIDE LOOP
- AC-06 - OVERPASS – OFFSET INTERSECTION LOOP
- AC-07 - OVERPASS – ROUNDABOUT LOOP

TEAM REPORT - CRITERIA

2011 PSR Alternatives	Design	Impacts	Costs	Risks
ALT. 1 – ROAD OVER RAIL - ELEVATED MCKINLEY ST. AND SAMPSON AV.				
ALT. 2 – RAIL OVER ROAD				
ALT. 3A – ROAD OVER RAIL (LONGEST CONNECTOR ROAD)				
ALT. 3B – ROAD OVER RAIL (SHORTEST CONNECTOR ROAD)				
ALT. 3C – ROAD OVER RAIL (INTERMEDIATE CONNECTOR ROAD)				
ALT. 4 – ROAD OVER RAIL (ELEVATED MCKINLEY ST. W/ CONNECTION TO SAMPSON AV.)				



Milliken Avenue Track Flyover



















Milliken Av. Project Details:

- Existing Single Track Segment (UPRR Alhambra Sub.)
- 52' Wide Track Flyover for 2 Tracks
- Approx. 1.4 miles
- Single Track Shoofly within RR ROW
- **Approx. Cost: \$49M**

McKinley St. Project Details:

- Existing Double Track Segment (BNSF San Bernardino Sub.)
- 100' Wide Track Flyover for 4 Tracks
- Approx. 1.70 miles
- Double Track Shoofly possibly outside RR ROW (\$80-120M)
- **Approx. Cost: \$174M-206M**
- Channel Reinforcement Needed
- ROW Costs (\$75-\$110M)
- Timely Completion Concerns

TEAM REPORT - CRITERIA

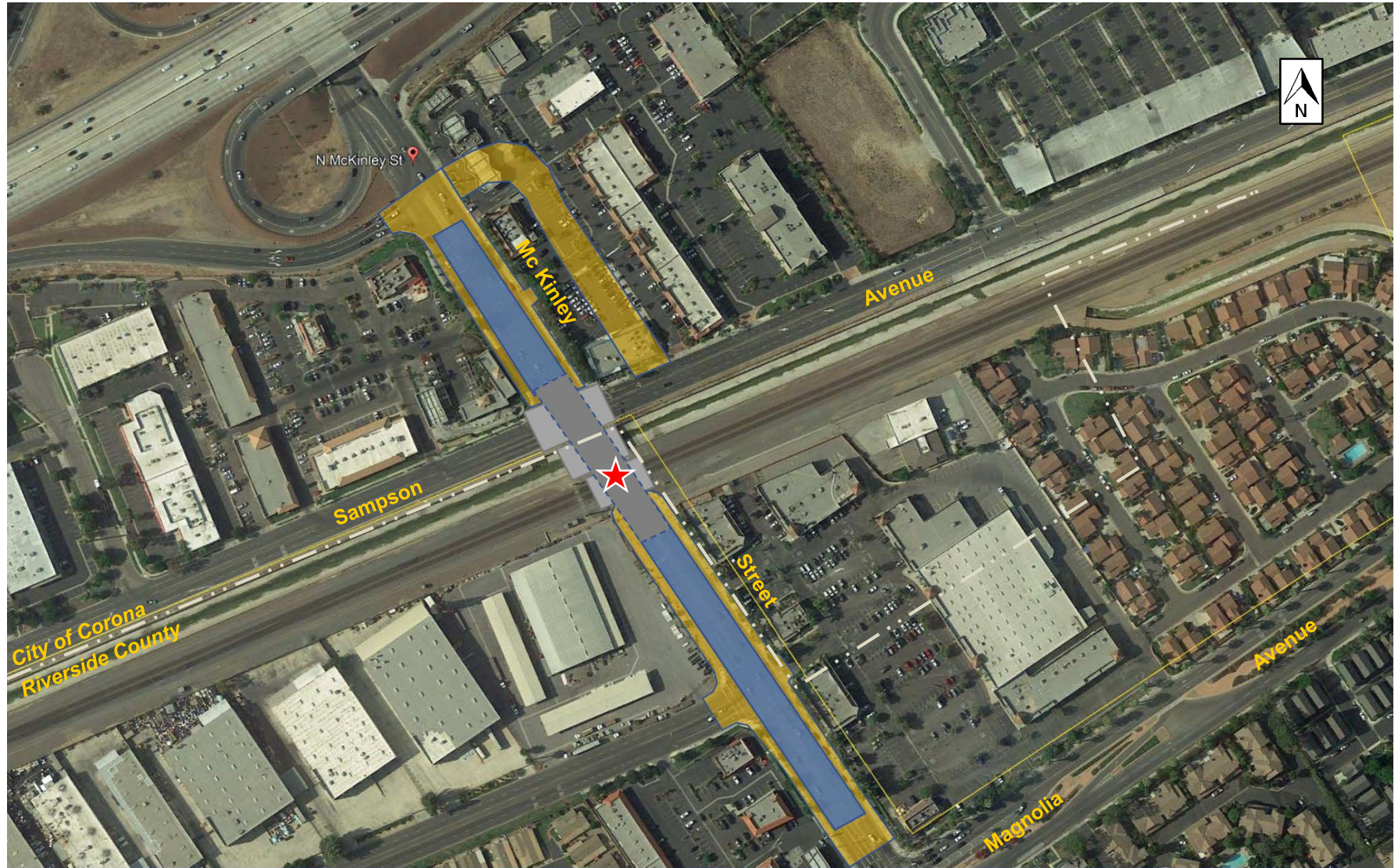
2018 BCA PCR	Design	Impacts	Costs	Risks
AC-04 – OVERPASS – OUTSIDE LOOP				
AC-05 – OVERPASS – INSIDE LOOP				
AC-06 – OVERPASS – OFFSET INTERSECTION LOOP				
AC-07 – OVERPASS – ROUNDABOUT LOOP				

TEAM REPORT - FINDINGS



- **Lack of Design Sequence and Screening**
- **Meet BNSF Requirements without Exception**
- **High Right of Way Cost**
- **High Overall Cost Compared to Similar Projects**
- **Focus on Innovation vs Scope & Cost Control**

TEAM REPORT – VALUE ADDED INNOVATION



Underpass or Overpass Frontage Road Access Option

COMMITTEE REVIEW – SUMMARY OF ALTERNATIVES

- **Alternatives – Committee Accepts Team’s Conclusions on Alternatives**
 - **Rail Over Road - NOT Feasible**
 - ~ Cost is \$174M - \$206M
 - ~ BNSF Requirement to Assume Maintenance and Risk of Structure
 - **Rail Under Road - NOT Feasible**
 - ~ “Trench” Alternative Dismissed But No Plans or Estimates Provided
 - ~ Clearly Excessively Expensive & Inappropriate for Single Grade Separation
 - ~ Proper Screening Still Needed
 - **Road Under Rail - POSSIBLY Feasible**
 - ~ Team Believes it is a Potentially Viable Option IF Alignment & Cost Prove to Work
 - ~ Proper Screening Needed
 - **Road Over Rail - The MOST Feasible Alternatives Involve Road Over Rail**
 - ~ But See Design Suggestions Below

COMMITTEE – RECOMMENDATIONS

- **Direct Staff to Conduct VE Workshop Within 30 Days**
 - Include Reps from Agencies Experienced with Grade Separations
 - Focus on Identifying Cost Reduction Measures and Affordable Innovation
 - As Part of VE, Consider (at least) the Following:
 - **Underpass**
~ As Directed Further Below
 - **Trench**
 - **4 Lane Bridge**
 - **5th Reversible Lane**
 - **Frontage Road**

COMMITTEE – RECOMMENDATIONS

- **Underpass (Continued)**
 - **Fully Evaluate (at least) The Following:**
 - **Meet 7% Grade Requirement Without Modifying Arlington Channel?**
 - **Meet 7% Grade Requirement With Modifications to Arlington Channel?**
 - ~ e.g. Flume Structure
 - **Can a Higher Grade Be Justified?**
 - ~ e.g. Design, Speed or Engineering Adjustments

COMMITTEE – RECOMMENDATIONS

- **Other Design Requirements**
 - **Direct Staff to Consider the Following (VE Workshop or Otherwise)**
 - **Ramp Grades – 15%?**
 - **ADA Sidewalks on Both Sides of McKinley?**
 - **Temporary Queue Cutter Signals Needed During Construction?**

COMMITTEE – RECOMMENDATIONS

- **BNSF Design Exceptions**
 - **If Underpass is Determined to be Infeasible, Direct Staff to:**
 - **Seek Design Exception for Column Supports in Rail ROW**
 - **Authorize 1 or 2 Council Members to Participate in Higher Level Discussions**

COMMITTEE – RECOMMENDATIONS

- **Conventional Bridge Design**
 - **If Underpass is Determined to be Infeasible, Direct Staff to:**
 - **Return to Conventional Bridge Design**
 - **Consider Elements from BCA's Tustin Ave-Rose Drive Design**

COMMITTEE – RECOMMENDATIONS

- **Process**

- **Direct Staff to:**

- **Expedite Project Manager RFP**
 - ~ Grade Separation Experience
 - ~ Primarily Focused on this Project
 - **Emphasize Value & Cost Control**
 - ~ Not Just Innovation
 - ~ Value Added Cost Reduction Measures

COMMITTEE – RECOMMENDATIONS

- **Process (continued)**

- **Direct Staff to:**

- **BNSF Agreements**

- ~ Led by City with BCA Support
 - ~ C&M Agreement Must Begin Promptly

- **Implement All Necessary Project Controls (Cost & Schedule)**

- **Assist Design/ROW Team to Work Closely Together**

- ~ Regular Meetings
 - ~ Two Way Communication

QUESTIONS & NEXT STEPS

- **Next Steps**
 - **Staff to Respond to Report and Recommendations at Study Session (March 27)**
 - **Staff to Implement Recommendations ASAP**
- **Questions?**



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