PROJECT DELIVERY REPORT
Trade Corridors Improvement Fund

*The submitting agency will be responsible for maintaining documentation of the information entered on this report. (**Please type your response, handwritten reports will not be accepted**)*

A. Project Information Date: 11/8/2017

TCIF # (Segment): 48 Other Project Identifier (EA, Project #, PPNO, etc): PPNO 1124

Project Title: Avenue 56 Grade Separation Union Pacific Yuma Subdivision

Delivery Report: [X] Final- Due within six months of project becoming operable.
[X] Supplemental - Due at the conclusion of all project activities.

Location: County: Riverside City: Near City of Coachella

Project Description: Construct Grade Separation over UPRR mainline and Grapefruit Boulevard

B. Contact Information

Implementing Agency: County of Riverside Caltrans District Number: 8

Contact Person: Scott Staley Phone: 951-955-2092

Email Address: cstaley@rivco.org

C. Cost	Adopted Program Amount ($)	Current Approved Amount ($)	Actual Expended Amount ($)	Net Difference (Dollars)
Environmental				
Total Amount	$800,000	$295,000	$158,878	$136,122
Design				
Total Amount	$2,800,000	$2,268,000	$3,153,882	-$885,882
Right of Way				
Total Amount	$8,500,000	$3,289,000	$3,688,341	-$399,341
Construction				
TCIF	$10,000,000	$12,802,000	$12,802,000	$0
Local	$37,900,000	$10,740,000	$12,741,677	-$2,001,677
Federal	$0	$0	$0	$0
Other	$0	$0	$0	$0
Totals	$60,000,000	$29,394,000	$32,544,778	-$3,150,778

D. Schedule	Adopted Program Date	Current Approved Date	Actual Begin/End Date	Net Difference (Months)
Environmental Phase				
Begin	12/01/08	09/01/10	06/30/09	-14
End	12/31/10	07/28/11	08/28/11	1
Design (PS&E) Phase				
Begin	01/03/11	03/28/11	05/24/11	1
End	06/29/12	03/28/13	04/22/13	0
Right of Way Phase				
Begin	03/31/11	03/28/11	03/31/11	0
End	03/30/12	05/30/13	10/05/13	4
Construction Phase				
Begin	12/28/12	12/01/13	11/05/13	-1
End	12/28/14	02/28/16	05/09/17	14
Closeout Date				
Begin	01/02/15	06/15/16	05/10/18	10
End	04/01/15	10/15/16	~~12/27/17~~ 11/15/18	14

E. Amendments

List approved amendments

Amendment #	CTC Meeting	Summary of Changes (Scope, Cost, Schedule)
TCIF-AA-1314-22	6/25/2014	Fund Allocation Adjustments
TCIF-A-1213-68	6/11/2013	Fund Allocation Adjustments
TCIF-P-1213-22	12/6/2012	Schedule, cost, funding revisions

F. Project Benefits

Describe and compare project benefits with those included in the approved Baseline Agreement.

Outcomes	Adopted Program	Current Approved	Actual
Safety	Elimination of at-grade crossing will improve public safety by eliminating the potential for train versus automobile/truck/pedestrian accidents. One vehicle versus train accident has occurred at the crossing in the last 10 years. The potential for vehicle or pedestrian versus train accidents are expected to increase by 50% as vehicular and train volumes increase. The project will eliminate the need for pedestrians to walk across the mainline tracks. These improvements will eliminate the number of rear-end vehicular accidents at the crossing. The proposed project will also improve public safety and emergency vehicles response time.	Elimination of at-grade crossing will improve public safety by eliminating the potential for train versus automobile/truck/pedestrian accidents. One vehicle versus train accident has occurred at the crossing in the last 10 years. The potential for vehicle or pedestrian versus train accidents are expected to increase by 50% as vehicular and train volumes increase. The project will eliminate the need for pedestrians to walk across the mainline tracks. These improvements will eliminate the number of rear-end vehicular accidents at the crossing. The proposed project will also improve public safety and emergency vehicles response time.	Construction of the bridge eliminated the potential at the crossing for train accidents with vehicles or pedestrians. Rear end accidents were also eliminated at the crossing by removing the need to stop for trains. Emergency response vehicles no longer have to detour two and a half to six miles to access locations on the east when a train is present. The anticipated increase in rail freight volumes will not affect vehicle or pedestrian safety due to the grade separated crossing. Pedestrians enjoy the safety of a continuous sidewalk along Avenue 56 that provides safe access to the post office, nearby schools and businesses. Collision reports indicate there were five (5) collisions within the project limits in the year prior to construction and two non-injury collisions in the year after bridge opening. According to the FRA, no pedestrain or vehicle related train accidents have occured at the crossing since the bridge was opened to traffic.
Velocity	Elimination of at-grade crossing will improve train velocity by eliminating the potential for train versus automobile/truck/pedestrian accidents and associated delays to investigate and clear tracks. The proposed project will also eliminate idling of trucks and passenger cars at the crossing. Traffic circulation in this area will also improve.	Elimination of at-grade crossing will improve train velocity by eliminating the potential for train versus automobile/truck/pedestrian accidents and associated delays to investigate and clear tracks. The proposed project will also eliminate idling of trucks and passenger cars at the crossing. Traffic circulation in this area will also improve.	The new bridge provides unrestricted movement on Ave 56 form SH-86 over the railroad tracks and Grapefruit Boulevard for vehicles, freight, and agriculture equipment traveling to the community of Thermal, nearby farms, produce packing houses, and the Jacqueline Cochran International Airport. An estimated three to six minute improvement in response time by emergency services to locations east of the railroad tracks was achieved by eliminating the at-grade crossing. Train velocity is no longer limited by the at grade crossing.

Throughput	The proposed project provides for increased volume of freight trains (71 to 107) through improved operational efficiency on rail and NAFTA corridors SR-86 and SR-111. These improvements will also increase capacity and improve the operational efficiency for trucks.	The proposed project provides for increased volume of freight trains (71 to 107) through improved operational efficiency on rail and NAFTA corridors SR-86 and SR-111. These improvements will also increase capacity and improve the operational efficiency for trucks.	Opening year ADT on Avenue 56 at the railroad tracks is estimated at 6,700 vehicles which are no longer delayed at the train crossing—increasing throughput and operational efficiency on the surrounding roadway network. Throughput on Grapefruit Boulevard is also increased by eliminating turn lane backup spill over onto Grapefruit Boulevard at the railroad crossing. Because the bridge structure spans the railroad right-of-way, according to UPRR, rail operations have increased from 71 trains per day during the project planning period to an average of to 90 trains per day in 2018 which is on track to meet the 2030 projections of 107 trains per day. Future track expansions are unrestricted at the crossing. Train lengths are no longer limited by the distance between at grade crossings which previously blocked one or more road crossing during frequent track switching maneuvers or maintenance. Emergency services have unrestricted access across the railroad tracks—greatly decreasing response times.
Reliability	Project reduces the variability and unpredictability of travel time, including NAFTA truck traffic through this corridor through the elimination of auto/train conflicts. Rail traffic on this segment of track is projected to increase from 71 trains a day to 107 by 2030. The rail capacity improvements needed to accommodate this level of growth will not gain public acceptance without grade separations. Rail corridor closures due to accidents can exceed several hours and have a costly ripple effect on the movement of trains to and from the Southern California ports.	Project reduces the variability and unpredictability of travel time, including NAFTA truck traffic through this corridor through the elimination of auto/train conflicts. Rail traffic on this segment of track is projected to increase from 71 trains a day to 107 by 2030. The rail capacity improvements needed to accommodate this level of growth will not gain public acceptance without grade separations. Rail corridor closures due to accidents can exceed several hours and have a costly ripple effect on the movement of trains to and from the Southern California ports.	Construction of the grade separated crossing improved the travel time reliability through the corridor for passenger, NAFTA freight truck, and agriculture equipment. Emergency response vehicles also now have a reliable route to service customers east of the railroad without train delays. According to UPRR, Rail traffic has increased from 71 trains per day during the project planning period to an average of 90 trains per day in 2018 which is on track to meet the 2030 projections of 107 trains per day. Increased rail traffic has no effect on vehicle or pedestrian traffic circulation in the area. Trains can operate at higher speeds and operations are no longer delayed or stopped by vehicle accidents at the crossing.
Congestion Reduction	Project improvements will eliminate up to 25 vehicle daily hours of delay on the system and improves truck access to nearby freight facilities.	Project improvements will eliminate up to 25 vehicle daily hours of delay on the system and improves truck access to nearby freight facilities.	The Southern California Consensus Group ranked Avenue 56 in the top tier of 14 priority grade separation projects. Completion of the Avenue 56 grade separation project eliminated up to 25 vehicle daily hours of delay at the location and improved truck and equipment access to nearby commercial and agricultural facilities. Vehicle backup at the crossing has been eliminated freeing traffic flow on nearby Grapefruit Boulevard.
Emissions Reductions	The emissions benefit of the project is estimated to eliminate 8,600 grams/day of CO_2, 0.7 grams/day of CH_4 and 0.89 grams/day of PM 2.5. Additionally, Noise from train horns is eliminated for a population of 4,280 within 6,400' of the project.	The emissions benefit of the project is estimated to eliminate 8,600 grams/day of CO_2, 0.7 grams/day of CH_4 and 0.89 grams/day of PM 2.5. Additionally, Noise from train horns is eliminated for a population of 4,280 within 6,400' of the project.	The emissions benefit of the project has eliminated an estimated 8,600 grams/day of CO2, 0.7 grams/day of CH4, and 0.89 grams/day of PM 2.5 by removing idling vehicles at the crossing. Additionally, noise from train horns is eliminated for the surrounding community.

G. Differences/Variances

Describe differences/variances (if any) and reason for, between approved scope, cost, schedule, and actual.

Environmental phase completed 14 months early due to issuance of statutory exemption. Design cost was 39% over budget due to use of lightweight concrete embankment fill, retrofit sidewalk on existing Whitewater Bridge, and design of improvements to preserve location of affected U.S. post office.

Right-of-way costs were 12% over planned due to ownership change during escrow and additional necessary business relocations.

Construction cost increased by 8% due to complexities of using light weight embankment fill material, mitigating for groundwater encountered, and added paving, structural, and sidewalk work.

Construction completion was late by 14 months due to delays experienced during structural work caused by challenges in securing UPRR work windows, use of lightweight embankment fill, and contractor completing punch-list items.

Project closeout was extended by 14 months due to the delay in construction completion..

Sidewalk was extended on south side of project to the Caltrans interchange at SH-86 to provide continuous ADA access throughout the project including across the existing Whitewater Bridge where it had not existed before.

H. Lessons-Learned/Best Practices

Describe lessons-learned and best practices for future projects.

Use of lightweight embankment fill material in MSE wall construction increases scheduling complexity and extends the construction duration over the use of conventional fill dirt due to material placement requirements, cure times, and the material's inability to support construction equipment until capped with compacted dirt.

The construction schedule should allow for additional railroad coordination time, particularly to accommodate track work and closures for construction activities. Utilization of short, multi-hour, track closure periods should be anticipated in the schedule rather than planning for longer blocks of time.

Certification Signature

Implementating Agency
I hereby certify to the best of my knowledge and belief, the information in this report is a true and accurate record. The work was performed in accordance with the CTC approved scope, cost, schedules, and benefit information in the Baseline Agreement.

C. Scott Staley
(Print name) Project Manager

(Signature) Project Manager — November 15, 2018 Date

Caltrans

The TCIF Division Program Coordinator and/or the Project Manager from the California Department of Transportation has reviewed the information contained in this report and has verified the information presented is correct.

Alicia Murillo
(Print Name) TCIF Division Program Coordinator/Project Manager

(Signature) TCIF Division Program Coordinator/Project Manager — 12/5/18 Date

The TCIF Program Lead from the California Department of Transportation has reviewed the information contained in the report and concurs with the approval.

Tony Cano
(Print Name) TCIF Program Lead

(Signature) TCIF Program Lead — 12/10/18 Date

Distribution: 1) Local Agency, 2) Division Program Coordinator/Project Manager, 3) TCIF Program Lead, 4) CTC