

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: 5/10/2016

TCIF # (Segment): _____ 43 Other Project Identifier (EA, Project #, PPNO, etc): PNRSL-5104(033)

Project Title: Auto Center Drive Grade Separation

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

Location: County: Riverside City: Corona

Project Description: project constructed a 4-lane over crossing at Auto Center/BNSF Railroad tracks.

B. Contact Information

Implementing Agency: City of Corona Caltrans District Number: 8

Contact Person: Linda Bazmi Phone: 951-739-4960

Email Address: Linda.Bazmi@ci.corona.ca.us

C. Cost

	Adopted Program Amount (\$)	Current Approved Amount (\$)	Actual Expended Amount (\$)	Net Difference (Dollars)
Environmental				
Total Amount	\$630,000	\$630,000	\$381,876	\$248,124
Design				
Total Amount	\$1,370,000	\$1,370,000	\$1,470,455	-\$100,455
Right of Way				
Total Amount	\$2,720,000	\$2,720,000	\$2,724,442	-\$4,442
Construction				
TCIF	\$16,000,000	\$16,000,000	\$16,000,000	\$0
Local	\$80,000	\$80,000	\$1,870,455	-\$1,790,455
Federal	\$6,200,000	\$6,875,000	\$4,367,709	\$2,507,291
Other	\$5,000,000	\$5,000,000	\$4,662,971	\$337,029
Totals	\$32,000,000	\$32,675,000	\$31,477,908	\$1,197,092

D. Schedule

	Adopted Program Date	Current Approved Date	Actual Begin/End Date	Net Difference (Months)
Environmental Phase				
Begin	02/01/07	02/01/07	02/01/07	0
End	01/01/08	01/01/08	01/24/08	0
Design (PS&E) Phase				
Begin	07/01/08	07/01/08	07/01/08	0
End	09/01/08	06/30/11	05/15/13	23
Right of Way Phase				
Begin	09/01/08	11/01/09	08/12/10	10
End	11/01/08	06/30/11	08/10/11	2
Construction Phase				
Begin	07/01/09	11/01/11	08/02/13	21
End	09/01/11	04/30/13	09/30/15	29
Closeout Date				
Begin	09/01/11	05/01/13	10/01/15	29
End	10/01/11	05/01/14	10/30/16	29

E. Amendments**List approved amendments**

Amendment #	CTC Meeting	Summary of Changes (Scope, Cost, Schedule)
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TCIF-P-1011-03	8/12/2010	schedule change
TCIF-P-1112-04	8/10/2011	schedule change
TCIF-A-1112-06	12/15/2011	cost and schedule changes

F. Project Benefits**Describe and compare project benefits with those included in the approved Baseline Agreement.**

Outcomes	Adopted Program	Current Approved	Actual
Safety	The project will improve safety at this location for vehicles and pedestrians because it eliminates an at-grade crossing which has the potential for frequent accidents and collisions with trains. Current train volume is 80 to 100 trains per day, and that is the same number of potential accidents the Auto Center Grade Separation, once constructed, will eliminate. Vehicular traffic is expected to double by year 2032, and train volume will also increase.	The project will improve safety at this location for vehicles and pedestrians because it eliminates an at-grade crossing which has the potential for frequent accidents and collisions with trains. Current train volume is 80 to 100 trains per day, and that is the same number of potential accidents the Auto Center Grade Separation, once constructed, will eliminate. Vehicular traffic is expected to double by year 2032, and train volume will also increase.	The project (1) eliminated vehicle-train conflict (2) offers uninterrupted flow of vehicles thus eliminating potential delay of emergency response vehicles (3) eliminated vehicular traffic (4) project constructed pedestrian sidewalks that did not exist before, and thus eliminated pedestrian accidents with trains. As of today's date we have not had any reports of any accidents at the Crossing==> we have eliminated vehicular accidents.
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. Although the train speed limit at this crossing is 50 mph for the freight and 50 mph for the passenger trains, these trains pass through with a much lower speed roughly 25 to 30 mph in this area. After the improvements are complete both freight and passenger trains will be able to operate at their maximum designed speed for the area and also improve the volume of trains traveling through this crossing. Vehicular traffic on Auto Center Drive will also be able to flow at 45 mph speed without the interruption of train traffic. • Improve safety response times to the large industrial and warehouse area along Railroad Street.	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. Although the train speed limit at this crossing is 50 mph for the freight and 50 mph for the passenger trains, these trains pass through with a much lower speed roughly 25 to 30 mph in this area. After the improvements are complete both freight and passenger trains will be able to operate at their maximum designed speed for the area and also improve the volume of trains traveling through this crossing. Vehicular traffic on Auto Center Drive will also be able to flow at 45 mph speed without the interruption of train traffic. • Improve safety response times to the large industrial and warehouse area along Railroad Street.	The project (1) improved train velocity by eliminating potential for train collisions and accidents with vehicles and pedestrians (2) eliminated truck and vehicular idling by eliminating the at grade crossing (3) trains volume to anticipated to increase as the trains are now allowed to operate at their designed speed for the area (4) with elimination of vehicular traffic and at-grade crossing emergency vehicles response time is improved. When the construction of the Auto Center Grade Separation Project ended, the construction of the SR-91 CIP started and traffic patterns and speeds were altered tremendously. The construction activities associated with SR-91 CIP have concluded in March 2018 and as a result, the City will conduct its traffic speed and traffic volume study later part of 2018. Currently, just by physical observation of the vehicles movements and speeds it is evident that vehicles are moving at the design speed of 35mph and better. phone conversation with City's dispatch center confirmed that with the retirement of the at-grade crossing, response time has improved but actually timing hasn't been calibrated.

Throughput	<p>The Auto Center Drive Grade Separation project will improve throughput along this route because it is being designed and will be constructed to allow for future expansion of the rail lines from the existing two track system to three or more tracks in the future.</p> <ul style="list-style-type: none"> • The project will also improve the reliability of BNSF and Metrolink systems and increase throughput of BNSF freight trains, thereby improving goods movement and by eliminating the potential for train verses truck or automobile accidents. 	<p>The Auto Center Drive Grade Separation project will improve throughput along this route because it is being designed and will be constructed to allow for future expansion of the rail lines from the existing two track system to three or more tracks in the future.</p> <ul style="list-style-type: none"> • The project will also improve the reliability of BNSF and Metrolink systems and increase throughput of BNSF freight trains, thereby improving goods movement and by eliminating the potential for train verses truck or automobile accidents. 	<p>The project (1) eliminated the incidence rate of train-vehicle collisions as the intersection no longer puts traffic in front of trains (2) The constructed bridge spans the entire BNSF right of way limits thus allowing for future additional tracks (3) eliminated the potential for train verses truck or automobile accidents and thus improved reliability of freight and commuter trains and thus increasing throughput of freight train which in turn improves goods movement for the region.</p>
Reliability	<ul style="list-style-type: none"> • Allow for expansion of Goods Movement through rail line expansion along this ACE corridor. • Improve Goods Movement via trucks because the project directly connects to an existing truck route (Railroad Street) and is also within a 1 mile radius of 2 businesses with a spur line and is within a 1 mile radius of 47 distribution/warehouse centers . • Immediately eliminate 23.3 vehicle hours of delay per day in 2005 for total train activity. • Eliminate a projected 264.1 vehicle hours of delay per day in 2030 for total train activity. 	<ul style="list-style-type: none"> • Allow for expansion of Goods Movement through rail line expansion along this ACE corridor. • Improve Goods Movement via trucks because the project directly connects to an existing truck route (Railroad Street) and is also within a 1 mile radius of 2 businesses with a spur line and is within a 1 mile radius of 47 distribution/warehouse centers . • Immediately eliminate 23.3 vehicle hours of delay per day in 2005 for total train activity. • Eliminate a projected 264.1 vehicle hours of delay per day in 2030 for total train activity. 	<p>(1) The Auto Center Grade Separation offers uninterrupted flow of vehicles thus eliminating potential delay of emergency response vehicles and commute (2) Improved Goods Movement via trucks because the project directly connects to an existing truck route (Railroad Street) and is also within a 1 mile radius of 2 businesses with a spur line and is within a 1 mile radius of 47 distribution/warehouse centers (3) eliminated the potential for train verses truck or automobile accidents and thus improved reliability of freight and commuter trains and thus increasing throughput of freight train which in turn improves goods movement for the region (4)Project supports and is part of expansion of Goods Movement through rail line expansion along this ACE corridor. When the construction of the Auto Center Grade Separation Project ended, the construction of the SR-91 CIP started and traffic patterns and speeds were altered tremendously. The construction activities associated with SR-91 CIP have concluded in March'2018 and as a result, the City will conduct its traffic speed and traffic volume study later part of 2018.</p>

<p>Congestion Reduction</p>	<ul style="list-style-type: none"> • This project will provide congestion reduction at this location because it eliminates an immediate gate down time of over 114 minutes per day (total train activity) and a projected gate down time of over 214 minutes per day (total train activity) in 2030. The gate down times translate to an expected 23.3 vehicle hours of delay per day in 2005 and 264.1 vehicle hours of delay in 2030 along this route. • The project will also remove a key transportation bottleneck at this location because it eliminates the current at-grade crossing (bottleneck) and provides for future expansion of the rail system at this location. • The current dual-track rail system at this location is inadequate to serve forecasted future freight traffic growth along this line and growth rates indicate the system needs are inadequate and will require expansion in the near future. The design of the Auto Center Drive Grade Separation project allows for future expansion of the rail line at this location. 	<ul style="list-style-type: none"> • This project will provide congestion reduction at this location because it eliminates an immediate gate down time of over 114 minutes per day (total train activity) and a projected gate down time of over 214 minutes per day (total train activity) in 2030. The gate down times translate to an expected 23.3 vehicle hours of delay per day in 2005 and 264.1 vehicle hours of delay in 2030 along this route. • The project will also remove a key transportation bottleneck at this location because it eliminates the current at-grade crossing (bottleneck) and provides for future expansion of the rail system at this location. • The current dual-track rail system at this location is inadequate to serve forecasted future freight traffic growth along this line and growth rates indicate the system needs are inadequate and will require expansion in the near future. The design of the Auto Center Drive Grade Separation project allows for future expansion of the rail line at this location. • Railroad Street and Auto Center Drive along the Auto Center Drive Grade Separation project provide a direct link to State Route 91 which, thereby, creates interregional benefits from this project. 	<p>(1) construction of the Auto Center Grade Separation caused street traffic moves freely over railroad tracks, reducing wait times for a passing train and increasing travel speed (2) eliminated congestion by eliminating the at grade crossing gates down time of over 114 minutes per day (total train activity) and a projected gate down time of over 214 minutes per day (total train activity) in 2030. The gate down times translate to an expected 23.3 vehicle hours of delay per day in 2005 and 264.1 vehicle hours of delay in 2030 along this route (3) the project provided uninterrupted flow of vehicles thus eliminating potential delay of emergency response vehicles (4) The constructed bridge spans the entire BNSF right of way limits thus allowing for future additional tracks</p>
<p>Emissions Reductions</p>	<p>(1)This grade separation project eliminates the conflict between rail and road traffic, and achieves emission reductions as a result of reduced vehicle idling at the grade crossing. The emissions analysis for this project is based on a standard methodology to calculate daily vehicle hours of delay at the grade crossing. Vehicle idling emissions were calculated by multiplying total delay in each vehicle category by the Air Resources Boards' EMFAC2007 idling emission factors(2)The emissions benefit of the project in 2030 is calculated to be 27 tons per year of a combined PM10, ROG, NOx, and CO2. This calculation is based on the low end of future projected train counts such that it provides a conservative estimate of emission benefits. If the higher end of projected future train counts were used, idling emissions without the project would be greater such that implementation of the project would result in greater emission reductions(3)It should be noted that the analysis is also conservative because it does not take into account that congestion at times spills upstream to the previous intersection causing</p>	<p>(1)This grade separation project eliminates the conflict between rail and road traffic, and achieves emission reductions as a result of reduced vehicle idling at the grade crossing. The emissions analysis for this project is based on a standard methodology to calculate daily vehicle hours of delay at the grade crossing. Vehicle idling emissions were calculated by multiplying total delay in each vehicle category by the Air Resources Boards' EMFAC2007 idling emission factors(2)The emissions benefit of the project in 2030 is calculated to be 27 tons per year of a combined PM10, ROG, NOx, and CO2. This calculation is based on the low end of future projected train counts such that it provides a conservative estimate of emission benefits. If the higher end of projected future train counts were used, idling emissions without the project would be greater such that implementation of the project would result in greater emission reductions(3)It should be noted that the analysis is also conservative because it does not take into account that congestion at times spills upstream to the previous intersection causing</p>	<p>(1) Construction of the Auto Center Drive Grade Separation eliminated idling vehicle emissions due to elimination of waiting time for passing trains (2) The Auto Center Grade Separation offers uninterrupted flow of vehicles</p>

	congestion on adjacent arterials. Including benefits from the accompanying improvement of nearby arterial intersections could result in additional emission reductions which are estimated to be up to 30% of the grade separation alone.	congestion on adjacent arterials. Including benefits from the accompanying improvement of nearby arterial intersections could result in additional emission reductions which are estimated to be up to 30% of the grade separation alone.
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G. Differences/Variations

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

(1) Construction phase start was delayed due to Due to delay in receipt of federal funds with an executed E-76. City received from Caltrans the Notice to Proceed with Construction in December'2013, and City had advertised the Project in March'2013 with award in May'2013. There is a move in period to procure materials and submit appropriate paperwork and project construction started on 8/2/2013 as per schedule. Completion date was in Sept.'2015. (2) After construction, the City did not file a closeout report since we were waiting for labor compliance and DBE issues to be finalized and settled with Contractor and subs.

H. Lessons-Learned/Best Practices

Describe lessons-learned and best practices for future projects .

(1) Working with utilities early on in the Design phase worked very well on this project. City will continue to work cooperatively with utilities in early stage of every project (2) Coordination of work schedule and scope with BNSF team members is a must. Preparation of cost estimate for the flagging and BNSF electrical/track work wasn't well done. For future projects City will work closely with BMSF staff to come up with a more realistic costs to help in putting a realistic budget.

Certification Signature

Implementing 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.

Tom Koper, P.E., Assistant Public Works Director

(Print name) Project Manager

Tom Koper
(Signature) Project Manager

9-25-18 9/25/2018
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 Durillo
(Print Name) TCIF Division Program Coordinator/Project Manager

Alicia Durillo 10/22/18
(Signature) TCIF Division Program Coordinator/Project Manager 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 Caro
(Print Name) TCIF Program Lead

Tony Caro 10/22/18
(Signature) TCIF Program Lead Date

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