

ROAD REPAIR AND ACCOUNTABILITY ACT OF 2017
PROJECT BASELINE AGREEMENT
FYFFE AVENUE GRADE SEPARATION

Resolution TCEP-P-1819-02B
(will be completed by CTC)

1. FUNDING PROGRAM

- Active Transportation Program
- Local Partnership Program (Competitive)
- Solutions for Congested Corridors Program
- State Highway Operation and Protection Program
- Trade Corridor Enhancement Program

2. PARTIES AND DATE

2.1 This Project Baseline Agreement (Agreement) for the *FYFFE AVENUE GRADE SEPARATION*, effective on, August 15, 2018 (will be completed by CTC), is made by and between the California Transportation Commission (Commission), the California Department of Transportation (Caltrans), the Project Applicant, *Port of Stockton*, and the Implementing Agency, *Port of Stockton*, sometimes collectively referred to as the "Parties".

3. RECITAL

- 3.2 Whereas at its May 16, 2018 meeting the Commission approved the Trade Corridor Enhancement Program, and included in this program of projects the *FYFFE AVENUE GRADE SEPARATION*, the parties are entering into this Project Baseline Agreement to document the project cost, schedule, scope and benefits, as detailed on the Project Programming Request Form attached hereto as Exhibit A and the Project Report attached hereto as Exhibit B, as the baseline for project monitoring by the Commission.
- 3.3 The undersigned Project Applicant certifies that the funding sources cited are committed and expected to be available; the estimated costs represent full project funding; and the scope and description of benefits is the best estimate possible.

4. GENERAL PROVISIONS

The Project Applicant, Implementing Agency, and Caltrans agree to abide by the following provisions:

- 4.1 To meet the requirements of the Road Repair and Accountability Act of 2017 (Senate Bill [SB] 1, Chapter 5, Statutes of 2017) which provides the first significant, stable, and on-going increase in state transportation funding in more than two decades.
- 4.2 To adhere, as applicable, to the provisions of the Commission:
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Active Transportation Program", dated
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Local Partnership Program", dated
 - Resolution *Insert Number*, "Adoption of Program of Projects for the Solutions for Congested Corridors Program", dated
 - Resolution *Insert Number*, "Adoption of Program of Projects for the State Highway Operation and Protection Program", dated
 - Resolution TCEP-P-1718-01, "Adoption of Program of Projects for the Trade Corridor Enhancement Program", dated May 16, 2018

- 4.3 All signatories agree to adhere to the Commission's Guidelines. Any conflict between the programs will be resolved at the discretion of the Commission.
- 4.4 All signatories agree to adhere to the Commission's SB 1 Accountability and Transparency Guidelines and policies, and program and project amendment processes.
- 4.5 The Port of Stockton agrees to secure funds for any additional costs of the project.
- 4.6 The Port of Stockton agrees to report to Caltrans on a quarterly basis; after July 2019, reports will be on a semi-annual basis on the progress made toward the implementation of the project, including scope, cost, schedule, outcomes, and anticipated benefits.
- 4.7 Caltrans agrees to prepare program progress reports on a quarterly basis; after July 2019, reports will be on a semi-annual basis and include information appropriate to assess the current state of the overall program and the current status of each project identified in the program report.
- 4.8 The Port of Stockton agrees to submit a timely Completion Report and Final Delivery Report as specified in the Commission's SB 1 Accountability and Transparency Guidelines.
- 4.9 All signatories agree to maintain and make available to the Commission and/or its designated representative, all work related documents, including without limitation engineering, financial and other data, and methodologies and assumptions used in the determination of project benefits during the course of the project, and retain those records for four years from the date of the final closeout of the project. Financial records will be maintained in accordance with Generally Accepted Accounting Principles.
- 4.10 The Transportation Inspector General of the Independent Office of Audits and Investigations has the right to audit the project records, including technical and financial data, of the Department of Transportation, the Project Applicant, the Implementing Agency, and any consultant or sub-consultants at any time during the course of the project and for four years from the date of the final closeout of the project, therefore all project records shall be maintained and made available at the time of request. Audits will be conducted in accordance with Generally Accepted Government Auditing Standards.

5. SPECIFIC PROVISIONS AND CONDITIONS

- 5.1 Project Schedule and Cost
See Project Programming Request Form, attached as Exhibit A.
- 5.2 Project Scope
See Project Report or equivalent, attached as Exhibit B. At a minimum, the attachment shall include the cover page, evidence of approval, executive summary, and a link to or electronic copy of the full document.
- 5.3 Other Project Specific Provisions and Conditions

Attachments:

- Exhibit A: Project Programming Request Form
Exhibit B: Project Report

SIGNATURE PAGE
TO
PROJECT BASELINE AGREEMENT

FYFFE AVENUE GRADE SEPARATION

Resolution TCEP-P-1819-02B



Richard Aschieris

June 12, 2018

Date

Port Director, Port of Stockton

Project Applicant



Richard Aschieris

June 12, 2018

Date

Port Director, Port of Stockton

Implementing Agency



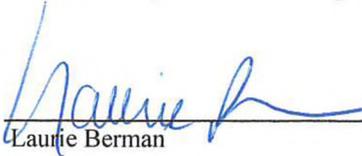
Dennis T. Agar

6/29/18

Date

District Director

California Department of Transportation



Laurie Berman

7-18-18

Date

Director

California Department of Transportation



Susan Bransen

8/15/18

Date

Executive Director

California Transportation Commission

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
PROJECT PROGRAMMING REQUEST
DTP-0001 (Revised June, 7 2018 v7.09)

General Instructions

Amendment (Existing Project)		No		Date:	8/7/18		
District	EA	Project ID	PPNO	MPO ID	Alt Proj. ID / prg.		
75		0018000293	T0002				
County	Route/Corridor	PM Bk	PM Ahd	Project Sponsor/Lead Agency			
SJ	San Joaquin			Port of Stockton			
				MPO	Element		
					Rail		
Project Manager/Contact		Phone		E-mail Address			
Juan G. Villanueva		209 946-0246		jvillanueva@stocktonport.com			
Project Title							
Fyffe Avenue Grade Separation							
Location (Project Limits), Description (Scope of Work)							
The Fyffe Avenue Grade Separation Project is located in the City of Stockton, California, in San Joaquin County from the northern limits of the Navy Drive Bridge at the San Joaquin River to the Port of Stockton West Complex entrance. The Project will replace an existing at-grade rail crossing entrance to the Port's West Complex with a new grade-separated crossing approximately 900-1000 ft east of the current grade crossing location. A four lane overcrossing will be constructed just north of Navy Drive Bridge and over the Fyffe Avenue rail line, realigning McCloy Avenue south of its current location to form a stop-controlled intersection.							
Component		Implementing Agency					
PA&ED	Port of Stockton						
PS&E	Port of Stockton						
Right of Way	Port of Stockton						
Construction	Port of Stockton						
Legislative Districts							
Assembly:	District 13		Senate:	District 5		Congressional:	Districts 9 & 10
Project Benefits							
This Project increases safety for the public, reduces hours of delay, solves a transportation bottleneck, promotes multimodal strategies at the Port, and improves interregional corridors that serve Statewide trade corridor needs. Project will reduce Particulate Matter (PM) 10, and PM 2.5, and greenhouse gasses by eliminating traffic idling delays caused by six train units a day entering the port. Project will promote efficient goods movements by increasing volume of freight traffic, speed of freight traffic, (Continued on page 2)							
Purpose and Need							
The primary purpose of the Project is to improve local, regional and interregional access to the Ports West Complex. The Project is one of a series of improvements to facilitate the flow of goods and services to and from the Port via the State Route 4 Crosstown Freeway and interregional road and rail network. Port of Stockton is an inland port facility whose strategic location adjacent to water, rail and highway access supports agricultural, industrial, construction and bulk materials activities. (Continued on page 2)							
Category		Outputs/Outcomes			Unit	Total	
Intercity Rail/Mass Trans		Grade separations/ rail crossing improvements			each	1	
Local streets and roads		At-grade crossings eliminated			each	1	
Local streets and roads		Local road operational improvements			each	1	
ADA Improvements		No	Bike/Ped Improvements		No	Reversible Lane analysis	No
Inc. Sustainable Communities Strategy Goals		No		Reduces Greenhouse Gas Emissions			Yes
Project Milestone					Existing	Proposed	
Project Study Report Approved					09/27/13		
Begin Environmental (PA&ED) Phase						07/01/18	
Circulate Draft Environmental Document			Document Type	CE		10/01/18	
Draft Project Report						N/A	
End Environmental Phase (PA&ED Milestone)						10/30/18	
Begin Design (PS&E) Phase						01/01/19	
End Design Phase (Ready to List for Advertisement Milestone)						09/01/19	
Begin Right of Way Phase						12/01/18	
End Right of Way Phase (Right of Way Certification Milestone)						02/01/19	
Begin Construction Phase (Contract Award Milestone)						03/01/19	
End Construction Phase (Construction Contract Acceptance Milestone)						09/01/20	
Begin Closeout Phase						09/30/20	
End Closeout Phase (Closeout Report)						03/01/21	

ADA Notice

For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento,

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised June, 7 2018 v7.09)

Date: 8/7/18

Additional Information

Continued from page 1 Benefits - reliability and travel time is increased due to elimination of rail delays. The Project will enhance inter-Port circulation to support Short Sea Shipping efforts. Removing the at-grade intersection will provide vehicle and rail safety improvements and enable critical emergency evacuation route for employees, tenants, visitors, and emergency responders. The Project will strengthen the region's transportation systems and provide last mile link to the highway and trade corridors.

Continued from page 1 Purpose and Need - Port's transportation connections and available work force have made it a popular location for warehousing, distribution and logistics with the West Complex hosting a high number of heavy trucks as a goods movement terminal. Recent Crosstown Freeway Extension complements this project by facilitating efficient goods movement.

Changes to Project Milestone Dates - Application Delivery Plan vs. PPR:

The circulation of draft environmental document was not applicable as the project has a Notice of Exemption and circulation was not required.

'Begin Environmental Phase' was originally submitted as 07/2018; Port initiated environmental 01/2018 and filed the Notice of Exemption 05/18/2018.

Port was able to move forward with design sooner than anticipated due to reduced environmental phase so PS&E (originally submitted as 09/2019) can begin earlier. Port requested design funds to be advanced to FY 17/18 - PPR reflects date of CTC action on 6/27/2018.

'End ROW Phase' originally submitted as 02/2019; changed to 6/27/19 to reflect allocation.

'Begin / End Construction' dates changed to reflect allocation and follows 'timely use of funds' rule.

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PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised June, 7 2018 v7.09)

Date: 8/7/18

District	County	Route	EA	Project ID	PPNO	Alt. ID
75	SJ	San Joaquin, ,		0018000293	T0002	
Project Title: Fyffe Avenue Grade Separation						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	
E&P (PA&ED)									Port of Stockton
PS&E									Port of Stockton
R/W SUP (CT)									Port of Stockton
CON SUP (CT)									Port of Stockton
R/W									Port of Stockton
CON									Port of Stockton
TOTAL									
Proposed Total Project Cost (\$1,000s)									Notes
E&P (PA&ED)	200							200	
PS&E		1,400						1,400	
R/W SUP (CT)									
CON SUP (CT)									
R/W		400						400	
CON			11,000					11,000	
TOTAL	200	1,800	11,000					13,000	

Fund No. 1:	SB 1 TRADE CORRIDOR ENHANCEMENT PROGRAM								Program Code
Existing Funding (\$1,000s)									30.10.723.100
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									CALTRANS-Regional Share
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E		1,000						1,000	
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON			8,000					8,000	
TOTAL		1,000	8,000					9,000	

Fund No. 2:	PORT FUNDS (local funds)								Program Code
Existing Funding (\$1,000s)									
Component	Prior	18-19	19-20	20-21	21-22	22-23	23-24+	Total	Funding Agency
E&P (PA&ED)									PORT OF STOCKTON (local funds)
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)	200							200	
PS&E		400						400	
R/W SUP (CT)									
CON SUP (CT)									
R/W		400						400	
CON			3,000					3,000	
TOTAL	200	800	3,000					4,000	

Project Report

To Request Programming in the 2018 Trade Corridor Enhancement Program (TCEP) and for Project Approval

On Route San Joaquin Intercity Corridor

Between City of Stockton

And County of San Joaquin

I have reviewed the information contained in this report, and find the data to be complete, current and accurate:

APPROVAL RECOMMENDED:



Juan G. Villanueva, Port of Stockton Development & Planning Manager

Vicinity Map

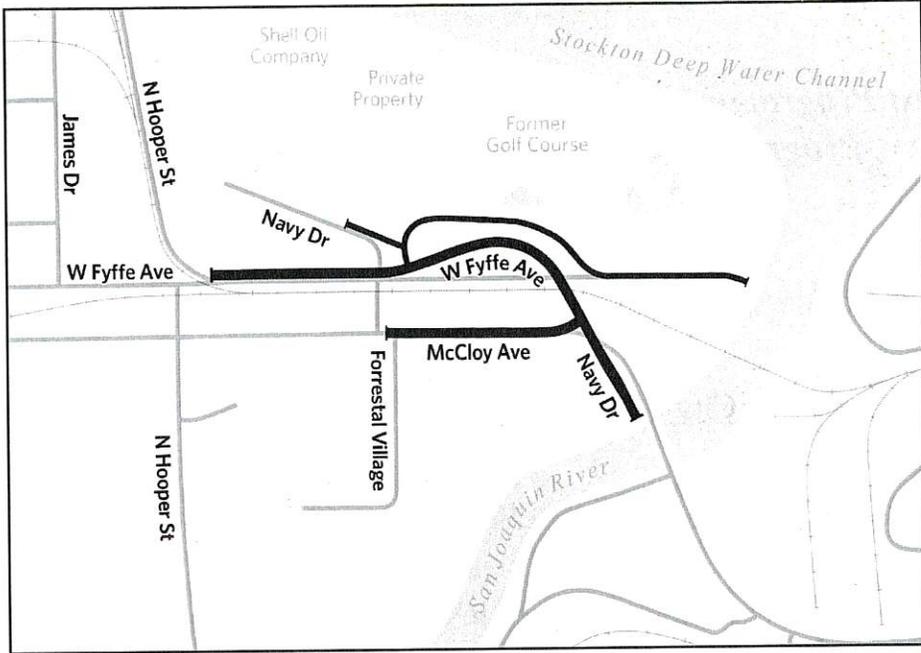


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1. INTRODUCTION

Project Description

The Port proposes to construct a four-lane grade separated overcrossing of the shared Central California Traction Company (CCTC)/Union Pacific Railroad (UPRR)/Burlington Northern Santa Fe (BNSF) railroad tracks, extending Navy Drive upward from the Navy Drive Bridge, and conforming near the existing West Complex entrance. The Project would create a new signalized intersection at the Navy Drive and McCloy Avenue intersection, with Navy Drive as the primary through movement to the West Complex. The existing at-grade rail crossing would be left in place during construction, but access would be removed upon Project completion, and vehicles would be redirected to the overcrossing. Existing access to the Albert Lindley House would be modified.

Project Limits	10-SJ-Fyffe Ave From Navy Drive Bridge to West Complex entrance	
Number of Alternatives	Two	
	Current Cost Estimate:	Escalated Cost Estimate:
Capital Outlay Construction	\$9,800,000	\$9,800,000
Capital Outlay Right-of-Way	\$400,000	\$400,000
Funding Source	Trade Corridor Enhancement Program, Local funds	
Funding Year	PS&E and ROW 2018/2019 Construction 2019/2020	
Type of Facility	4-lane expressway	
Environmental Determination or Document	California Environmental Quality Act Statutory Exemption 15828 (g)	
Project Development Category	Category 5	

2. RECOMMENDATION

The Port selected Alternative 1 as the locally preferred alternative, which proposes to widen Navy Drive to four lanes and realign it to cross over the existing and future UPRR/BNSF/CCTC rail line with a new crossing structure and reconnect to the West Complex entrance. The existing entrance would be re-stripped to conform to the geometry of the new roadway. Existing access to the Albert Lindley House would be reconfigured around the footprint of the new overcrossing. McCloy Avenue would connect to Navy Drive at a new raised and signalized intersection, just south of the new crossing structure. Raising the approach roadway to the crossing structure would use 2:1 fill slopes, increasing the Project's footprint while minimizing the use of retaining

walls. The intersection would accommodate both construction year (2022) and design year (2042) traffic volumes within the same footprint. This intersection could then be widened as future traffic volumes increase. The Port also confirmed future growth assumptions at 3.5 percent annually for travel demand forecasting purposes, structure span length accommodations, the future second rail to lie north of the existing track, and the bridge and roadway width.

3. BACKGROUND

The Port is owned by the Stockton Port District and is a 'special district' created by the California Harbors and Navigation Code. The Port is an autonomous district that functions as a municipal Corporation, including the ability to levy taxes. The Port is governed by a board of seven Commissioners. Four are appointed by the Stockton City Council and three appointed by the San Joaquin County Board of Supervisors. The modern port was established in 1932 and has since grown to about 600 acres east of the San Joaquin River. Directly to the west of the river is Rough and Ready Island, otherwise known as the West Complex. This is a former U.S. Navy facility that was transferred to the Port of Stockton by special legislation in 2000. The island is approximately 1,400 acres; its acquisition more than tripled the operational area of the Port. The Port of Stockton is located near the western edge of San Joaquin County, and is within the city limits of Stockton.

The Navy Drive Bridge replacement and Navy Drive widening projects are currently in construction, and when complete, will provide a continuous four-lane Navy Drive from the State Route (SR) 4/Crosstown Freeway extension, to its intersection with McCloy Avenue near the existing at-grade entrance into the West Complex. Vehicles entering the West Complex from either Navy Drive or the Port of Stockton Expressway must access the West Complex across the shared CCTC/UPRR/BNSF at-grade rail line. Several unit trains cross the entrance daily, creating delays for vehicles destined for the West Complex. Projected growth in both Port vehicle and rail traffic will exacerbate this situation in the future.

4. Purpose and Need

Purpose

The Port serves as an inland port facility and is strategically located on the Stockton Deepwater Ship Channel, 75 nautical miles due east of the Golden Gate Bridge. The Port of Stockton owns and operates a diversified and major multimodal transportation center that encompasses a 2000-acre operating area. The Port has berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds, and 7.7 million square feet of warehousing for both dry bulk and general cargoes. The Port is one-mile from Interstate 5 and all interconnecting major highway systems.

Upon completion of the Crosstown Freeway Extension in 2017, Navy Drive has become the primary link between the Port and the regional transportation system. The West Complex hosts a high number of heavy trucks as a goods movement terminal. The Project would facilitate this

movement of goods and improve access between the Port's West Complex and the regional transportation network.

Travel times would be improved and delays would be reduced for vehicles entering the West Complex, while enhancing inter-Port circulation to support short sea shipping efforts. Removing the at-grade crossing would provide vehicle and rail safety improvements and enable a critical emergency evacuation route for employees, tenants, visitors and emergency responders. The Project also supports the Port's job creation efforts via further development of the West Complex.

The Project's objectives are as follows:

- **Improve travel times and reduce delay for vehicles entering the West Complex**
The Project will provide a direct connection to the West Complex entrance, which will reduce vehicle delay and improve travel times for both inbound and outbound West Complex traffic.
- **Safety and security**
The Project will improve safety by removing the at-grade crossing, eliminating the potential for vehicle/rail conflicts at the West Complex entrance. The grade separation will also provide a critical, reliable emergency evacuation route for West Complex employees, tenants, visitors and emergency response vehicles.
- **Accommodate future Port rail growth**
The Project will support the Port's future rail-generated traffic by accommodating a second rail line that would serve the West Complex.
- **Support the Port's ongoing job creation efforts**
The Project supports development of the Port's West Complex, which is comprised of over 1,400 total acres of maritime and landside facilities.

Need

Navy Drive is a critical link between the Port's West Complex and the imminent SR 4/Crosstown Freeway Extension to Navy Drive, which will make Navy Drive the primary truck route to the West Complex. Projected growth at the Port's West Complex, combined with the SR 4/Crosstown Freeway Extension project, will significantly increase future traffic on Navy Drive.

A. Problem, Deficiencies, Justification

All traffic entering the secure area of the Port's West Complex must do so from the east via Navy Drive or from the west via the Port of Stockton Expressway. Prior to entering the secure area, traffic must first cross an at-grade rail line, which is the primary rail connection between the West Complex and the interregional/national rail network. The rail line is owned jointly by UPRR, BNSF and the CCTC, through a Memorandum of Agreement.

The shared rail line currently carries approximately six-unit trains per day, and facilitates over 5,000 car moves per month. With the West Complex poised for growth, and major

tenants planning significant facility improvements, rail traffic is anticipated to double in the coming years. Within this timeframe, 12-unit trains are expected to cross the West Complex entrance each day, each carrying 84 to 100 cars.

In addition to the anticipated increase in rail volume, West Complex development will significantly increase future vehicle traffic on Navy Drive, especially once Navy Drive becomes the main truck route to the West Complex.

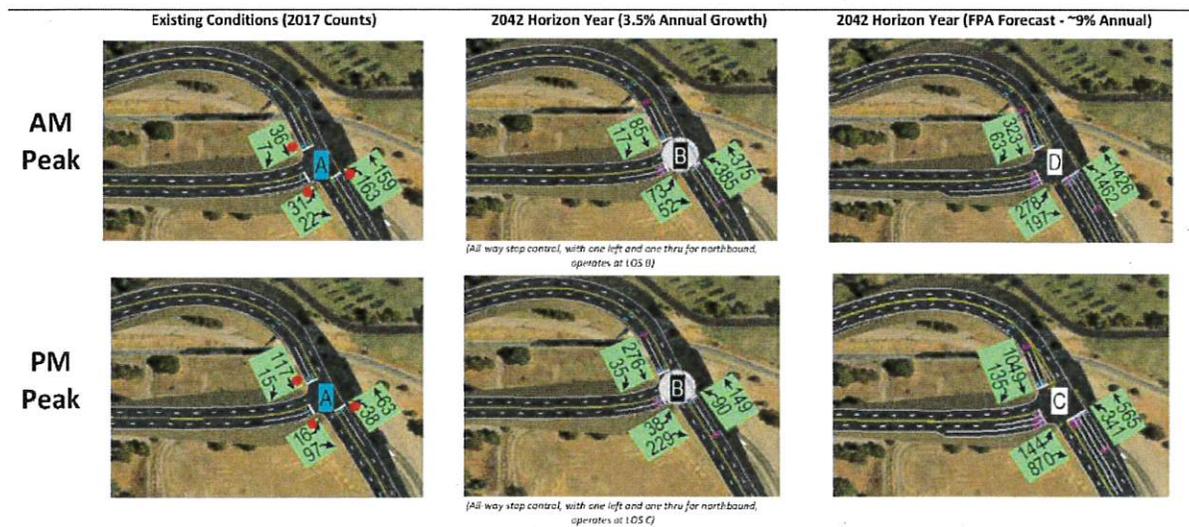
Given this anticipated growth, the junction where vehicle and rail traffic meet at the at-grade West Complex entrance will create significant delay for vehicles entering and exiting the West Complex. The delay created by the at-grade crossing will significantly affect the flow of freight from the Port, reduce safety due to the high potential of truck-to-rail conflicts, and degrade air quality as a result of extensive idling for queued trucks.

B. Regional and System Planning

The project is included in the 2018 San Joaquin Council of Governments (SJCOG) Regional Transportation Plan (RTP), and the 2014 California Freight Mobility Plan (CFMP).

C. Traffic

Peak hour and daily traffic counts were collected at the existing West Complex entrance in November 2017. Counts were collected using both hose and video methods, to capture vehicle types and truck classifications. The counts were used to evaluate existing conditions, as well as to evaluate future peak hour level of service (LOS) in 2042 (design year). The figure below summarizes future LOS using low and high growth rate assumptions. In all cases, LOS is “D” or better with a signalized Navy Drive/McCloy Avenue intersection.



5. ALTERNATIVES

5A. Viable Alternatives

Alternative 1, as shown in Appendix B, proposes to widen Navy Drive to four lanes and realign it to cross over the existing and future UPRR/BNSF/CCTC rail line with a new crossing structure and reconnect to the West Complex entrance. The existing entrance would be re-stripped to conform to the geometry of the new roadway. Existing access to the Albert Lindley House would be reconfigured around the footprint of the new overcrossing. McCloy Avenue would connect to Navy Drive at a new raised and signalized intersection, just south of the new crossing structure. Raising the approach roadway to the crossing structure would use 2:1 fill slopes, increasing the Project's footprint while minimizing the use of retaining walls. The intersection would accommodate both construction year (2022) and design year (2042) traffic volumes within the same footprint. This intersection could then be widened as future traffic volumes increase. Alternative 1 is projected to operate at a level of service (LOS) B by 2042. Alternative 1 is the Port's locally preferred alternative.

The preliminary cost estimate for Alternative 1 is approximately \$12,308,000 (in 2018 dollars). The cost includes 10 percent mobilization, 25 percent contingency, and construction support costs at 15 percent. A more detailed preliminary cost estimate and proposed design criteria and standards for Alternative 1 are provided in Attachment B.

5B. Rejected Alternatives

Alternative 2 is not preferred by the Port, and was not evaluated further. Alternative 2, as shown in Appendix E, reduces impacts to the former golf course by using retaining walls to retain fill along the rail line and introduce a T intersection with Fyffe Avenue. Alternative 2 would accommodate both construction year and design year traffic volumes at the Navy Drive and McCloy Avenue intersection, and allow for widening of the Navy Drive and Fyffe Avenue intersection to the north. Alternative 2 has two closely spaced intersections that would require additional traffic analysis. A cost estimate was not developed to a similar level of detail as Alternative 1 described above. However, preliminary estimates were developed for additional retaining walls, which increased the overall cost by approximately \$1.8 million.

6. CONSIDERATIONS REQUIRING DISCUSSION

Right-of-Way Issues

Several overhead and underground utilities are located within the Project boundaries as follows:

- PG&E overhead electric distribution and transmission
- Port of Stockton overhead electric distribution
- AT&T underground fiber optic telecommunication
- Comcast and AT&T Overhead communication
- PG&E underground gas
- Kinder Morgan underground petroleum
- California Water Service underground water lines

- City of Stockton underground Sanitary Sewer

The Port has begun coordination with the owners listed above to confirm any potential conflicts and initiate the relocation process. Utility relocations have been identified as one of the top project risks, as delays could have an impact on the Project's overall construction schedule.

To avoid impacting underground utilities located under and adjacent to Navy Drive, and pending the results of future geotechnical recommendations, the Project would be designed to minimize both the depth and reconstruction of the existing roadway pavement and grading activities, to the greatest extent possible. Existing underground utilities would remain underground where feasible. Manhole covers and inlet depths may need to be vertically adjusted to match the new roadway finished grade elevation.

The overhead PG&E, Port and AT&T/Comcast utilities would require relocation. These lines would either be relocated overhead or would be installed underground in utility corridors under the overcrossing, pending coordination with the corresponding owners.

McCloy Avenue and Fyffe Avenue at the West Complex entrance will need to be raised to accommodate the overcrossing elevation at the railroad. Raising these roadways will place additional fill and corresponding load on the Kinder Morgan underground petroleum and sanitary sewer lines that cross Fyffe and McCloy avenues. This additional fill will need to be coordinated with Kinder Morgan and the City of Stockton to confirm that the additional load is acceptable.

No right of way acquisitions are anticipated, as all property is Port-owned.

Environmental Compliance

The Port prepared a California Environmental Quality Act (CEQA) Notice of Exemption (NOE), and filed the NOE with San Joaquin County and the State Clearinghouse in May 2018 (See Attachment A).

Air Quality Conformity

The grade separation project is exempt from preparing an air quality conformity analysis.

Noise Abatement Decision Report

The project is located within the Port, and is surrounded by industrial uses. No sensitive receptors are near the project area.

Transportation Management Plan

A preliminary traffic management plan was discussed in the April 2018 Initial Concept Report. An updated plan will be coordinated with the Port during final design.

Storm water Compliance

Storm water planning and design will be consistent with Port and San Joaquin County standards.

7. OTHER CONSIDERATIONS AS APPROPRIATE

Permits

The project entails construction in proximity to an existing pond within the Port's Lyons Golf Course (which has been closed since 2009). The pond may be classified as a wetland and/or water of the U.S. Project construction is not anticipated to directly or indirectly affect this feature, as construction would proceed in compliance with all applicable regulations pertaining to storm water management and pollution and spill control.

Should revisions to the design of the realigned Albert Lindley access road necessitate fill of the pond, regulatory permitting requirements would be triggered, including the need to obtain a 401 Water Quality Certification from the Regional Water Quality Control Board and potentially a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife.

The project area may provide suitable habitat for Swainson's hawk, a state threatened species, and other protected raptor species. It is anticipated that potential impacts to Swainson's hawk or other raptors can be avoided through implementation of best management practices, such as timing construction outside of the nesting season. The Port is considering obtaining coverage under the San Joaquin Multi-Species Habitat Conservation and Open Space Plan for these species.

UPRR Construction & Maintenance Agreement

The proposed overcrossing will require a construction and maintenance (C&M) agreement with UPRR. The Port will initiate the C&M coordination process with UPRR during the California Public Utilities Commission (CPUC) diagnostic filed review, in support of the General Order (GO) 88-B process.

8. FUNDING, PROGRAMMING AND ESTIMATE

The project is funded with a combination of State (TCEP) and local (Port) funds. Funding by phase and fiscal year is summarized below.

Fund Source	Fiscal Year Estimate								
	Prior	18/19	19/20	20/21	21/22	22/23	23/24	Future	Total
Component	In thousands of dollars (\$1,000)								
PA&ED	200								200
PS&E		1,400							1,400
Right-of-Way		400							400
Construction			11,000						11,000
Total		2,000	11,000						13,000

Estimate

The cost includes 10 percent mobilization, 25 percent contingency, and construction support costs at 15 percent. A more detailed preliminary cost estimate is included in Attachment B.

9. DELIVERY SCHEDULE

Project Milestones	Milestone Date (Month/Day/Year)	Milestone Designation (Actual)
BEGIN ENVIRONMENTAL		01/01/18
COMPLETE ENVIRONMENTAL		05/18/18
BEGIN DESIGN	06/27/18	
END DESIGN	06/27/20	
RIGHT OF WAY CERTIFICATION	06/27/19	
ADVERTISE	06/27/20	
CONTRACT AWARD	12/31/20	
END CONSTRUCTION PHASE	06/27/23	
END CLOSEOUT PHASE	12/31/23	

10. RISKS

All project risks have been assessed by the Port. As noted previously, utility relocations have been identified as one of the top project risks, as delays could have an impact on the Project's overall delivery schedule. The Port has begun early utility coordination and will continue to coordinate with affected utilities (i.e., PG&E, Kinder Morgan, AT&T, Comcast, City of Stockton) to confirm relocation requirements, timing and costs, and ensure the project schedule will be attained.

11. EXTERNAL AGENCY COORDINATION

Modification of the existing at-grade crossing, and construction of the new overcrossing will require approvals from CPUC, and a construction and maintenance agreement will need to be initiated with UPRR. CPUC approvals require completion of California Environmental Quality Act (CEQA) documents, and both CPUC and UPRR reviews should be initiated with updated 30 percent structure plans. Given the timeframe for these reviews and approvals, the Port should initiate environmental approvals and begin the process to update and refine the structure details shown in Attachment B.

Utility impacts will be coordinated with the affected entities, to include:

Pacific Gas & Electric
AT&T
Kinder Morgan
City of Stockton
Comcast
Port of Stockton

Drainage plans and design will be coordinated with the Port of Stockton and San Joaquin County.

In the event that fill of the pond is unavoidable, the following permit will be required:

Regional Water Quality Control Board
Clean Water Act Section 401 Water Quality Certification

And the following permits may be required:

U.S. Army Corps of Engineers
Clean Water Act Section 404 Nationwide Permit

California Department of Fish and Wildlife
Section 1602 Streambed Alteration Agreement

12. ATTACHMENTS

- A. CEQA Notice of Exemption, May 2018
- B. Initial Concept Report, CH2M, April 2018
- C. Project Study Report (PSR) Equivalent, Parsons Transportation Group, September 2013

Notice of Exemption

Appendix E

To: Office of Planning and Research
P.O. Box 3044, Room 113
Sacramento, CA 95812-3044
County Clerk
County of: San Joaquin

From: (Public Agency): Port of Stockton
2201 W. Washington St.
Stockton, CA 95203
(Address)

Project Title: Fyffe Avenue Grade Separation Project

Project Applicant: Port of Stockton

Project Location - Specific:
Navy Drive at Fyffe Avenue, West Complex, Port of Stockton

Project Location - City: Stockton Project Location - County: San Joaquin

Description of Nature, Purpose and Beneficiaries of Project:
The proposed Project is a grade separation project addressing delays and safety concerns. Currently vehicles entering the Port cross the shared CCTC/UPRR/BNSF at-grade rail line. Several unit trains cross the entrance daily, creating delays for vehicles entering the West Complex. Project would reduce delays and improve safety.

Name of Public Agency Approving Project: Port of Stockton

Name of Person or Agency Carrying Out Project: Port of Stockton

- Exempt Status: (check one):
[] Ministerial (Sec. 21080(b)(1); 15268);
[] Declared Emergency (Sec. 21080(b)(3); 15269(a));
[] Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
[] Categorical Exemption. State type and section number:
[] Statutory Exemptions. State code number: 15282 (g)

Reasons why project is exempt:
The proposed Project is a railroad grade separation that eliminates an at grade crossing.

Lead Agency
Contact Person: Jason Cashman, Esq. Area Code/Telephone/Extension: 209.946.0246

- If filed by applicant:
1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? [] Yes [] No

Signature: [Signature] Date: May 2, 2018 Title: Port Director

[] Signed by Lead Agency [] Signed by Applicant

Authority cited: Sections 21083 and 21110, Public Resources Code. Date Received for filing at OPR:
Reference: Sections 21108, 21152, and 21152.1, Public Resources Code.

Exhibit E

PORT OF STOCKTON

Phone: (209) 946-0246



Fax: (209) 465-7244

01/24/2018

COVER LETTER

Project Title: Port of Stockton Fyffe Avenue Grade Separation Project

Port of Stockton
2201 W. Washington St.
Stockton, California 95203

Authorized Representative: Richard Aschieris – Port Director
209-946-0246 / raschieris@stocktonport.com

Contact Manager: Juan Villanueva – Development and Planning Manager
209-946-0246 / jvillanueva@stocktonport.com

Applicant Eligibility:

The Port of Stockton is eligible under this solicitation as a port authority with jurisdiction over transportation including projects that connect ports to other modes of transportation and improve the efficiency of freight movement. This project is eligible as it is consistent with the California Freight Mobility Plan.

Funding request:

Total amount of California Transportation Commission (CTC) 2018 Trade Corridor Enhancement funds requested	\$9,100,000
Total amount of non-Federal funds committed to the project (30%) of project total	<u>\$3,900,000</u>
Total Project Cost	\$13,000,000

The Port of Stockton is applying for a California Transportation Commission (CTC) grant to build a new grade separated crossing. The **Port of Stockton Fyffe Avenue Grade Separation Project** was recognized by the San Joaquin County

Council of Governments as a critical high priority project, and was submitted as part of the State of California Freight Plan.

The primary purpose of the Fyffe Avenue Grade Separation Project is to improve access from the Port of Stockton to the State and Regional Transportation Corridors. The project would facilitate the movement of goods, and improves access between the Port of Stockton and the San Joaquin Valley Trade Corridors which furthers the goals of the California Freight Mobility plan.

The Port of Stockton is fully committed to this \$13,000,000 project and will provide the matching share cost of \$3,900,000. It is important to support a project that reduces greenhouse gases, solves a significant traffic bottleneck, improves the safety for our citizens, and promotes the guiding principles of the California Sustainable Freight Action Plan.

If you have any questions please feel free to contact me directly, or our Development and Planning Manager, Juan Villanueva at 209-946-0246.

Sincerely,



Richard Aschieris -- Port Director

The primary purpose of the Fyffe Avenue Grade Separation is to improve local, regional, and interregional access to the Port's West Complex. The current at-grade rail crossing has a daily average of six unit trains that delay traffic up to 20 minutes each time. This project has identifiable benefits to the environment by eliminating any idle time at the rail crossing delay, less fuel, and quicker access leading to quicker turnaround time for truckers and shippers.

Please see FIGURE 1 – Project Overview



iii. Project background and a purpose and need statement.

BACKGROUND

The Port is owned by the Stockton Port District and is a 'special district' created by the California Harbors and Navigation Code. The Port is an autonomous district that functions as a municipal



corporation, including the ability to levy taxes. The Port is governed by a board of seven

B.

Confirmation that any new terminal project will not have significant environmental impacts, as described in related environmental documents as a result of the storage, handling, or transporting coal in bulk pursuant to Government Code section 14525.3.

The Port of Stockton confirms the Fyffe Avenue Grade Separation Project will not have an significant environmental impact as the Environmental Impact Study (EIR) has already been completed for the project location, and this project is not a terminal project that stores, handles, or transports coal.

C.

A confirmation that any capacity increasing project was considered for reversible lanes pursuant to Streets and Highways Code Section 100.15

The Port of Stockton having jurisdiction over the street Fyffe Ave, confirms that reversible lanes during the construction are part of the plans and will not close Fyffe Ave during construction. This project will not close, either directly or indirectly, except pursuant to such an agreement or while temporarily necessary during construction operations

D.

*An explanation of the project and its proposed benefits, including the following:
Project title, project description, scope, location, maps of the project site, including pictures.*

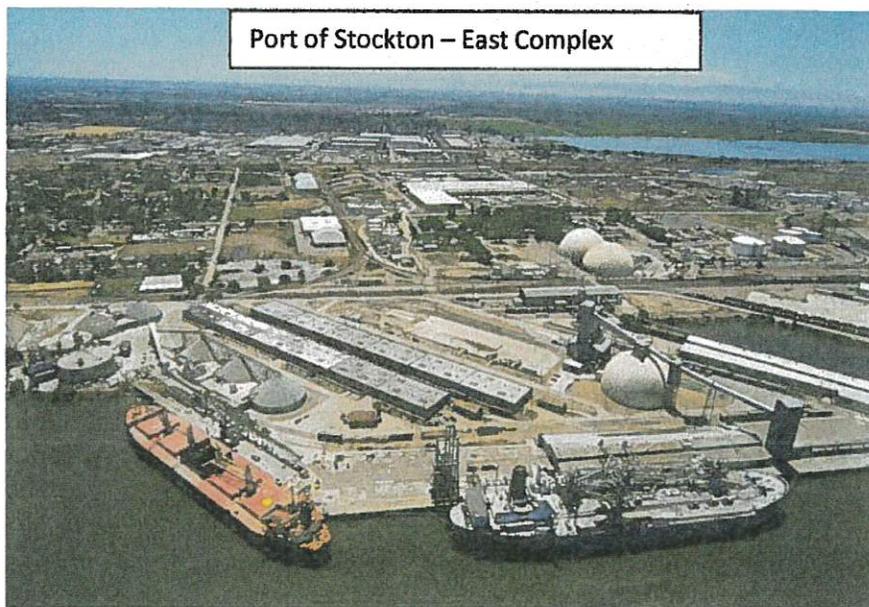
TITLE: The Port of Stockton Fyffe Grade Separation Project
BUDGET: \$13,000,000
DESCRIPTION: Construct a grade separation at the entrance to the Port of Stockton

The Port of Stockton is applying for a \$9,100,000 2018 Trade Corridor Enhancement Program Grant to assist in funding a \$13,000,000 grade separation project on the Ports West Complex. The Port of Stockton is committed to the project and will provide a cash match of \$3,900,000. (See Cover Letter – Letter of Commitment). This project will replace an existing at-grade rail crossing entrance to the Ports West Complex with a new grade separated crossing. There are currently over 3,066 trucks and cars a day entering the Ports West Complex. This project would completely eliminate the truck and vehicle delays, thus saving thousands of annual idling hours.

commissioners, four are appointed by the Stockton City Council and three appointed by the San Joaquin County Board of Supervisors. The modern port was established in 1932 and has since grown to about 600 acres east of the San Joaquin River. Directly to the west of the river is Rough and Ready Island, or, as it is also, called the West Complex. This is a former U.S. Navy facility that was transferred to the Port of Stockton by special legislation in 2000. The island is approximately 1,400 acres; its acquisition more than tripled the operational area of the Port. The Port of Stockton is located near the western edge of San Joaquin County, and is within the city limits of Stockton.

PURPOSE

The Port serves as an inland port facility and is strategically located on the Stockton Deep-water Ship Channel, 75 nautical miles due east of the Golden Gate Bridge. The Port of Stockton owns and

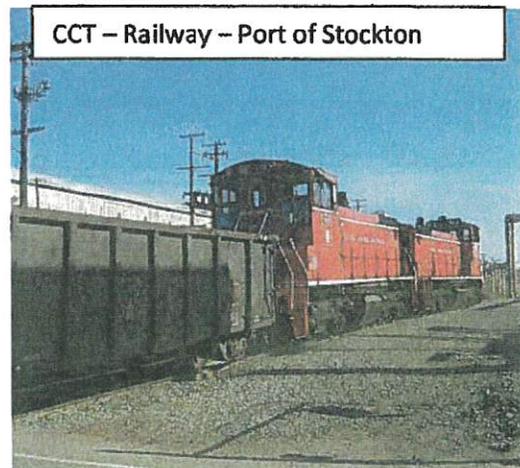


operates a diversified and major multimodal transportation center that encompasses a 2000-acre operating area. The Port has berthing space for 17 vessels, 1.1 million square feet of dockside transit sheds, and 7.7 million square feet of warehousing for both dry bulk and general cargoes. The Port is one-mile from Interstate 5 and all interconnecting major highway systems. Rail service is provided by two transcontinental railroads, Union Pacific and the Burlington Northern Santa Fe. The Port of Stockton is a regional asset and is the second largest inland port on the West Coast. The Port of Stockton will transport over 4 million metric tons of cargo in 2017. The Port was originally established and continues to support regional agricultural and industrial activities. We still serve this purpose, but have expanded to serve a variety of other industries, most significantly construction and bulk materials.

Two ships in port berthed at the Port of Stockton East Complex



The location of the Port provides a distribution point very near the geographic center of the state of California and, due to the Interstate and transcontinental railroads, serves the five western states and points east. Locally, development at the Port of Stockton is supported by the City of Stockton, the San Joaquin County Board of Supervisors, San Joaquin Council of Governments, the Greater Stockton Chamber of Commerce, the San Joaquin Partnership (a public private partnership) and other advocacy groups. Regionally, and statewide, improvements at the Port of Stockton are supported by the California Department of Transportation (Caltrans) goods movement division and the Caltrans districts located in the Bay Area and Sacramento Counties. With the tremendous growth in population in California's Central Valley, the Port of Stockton has become a popular location for warehousing, distribution and other logistics



businesses due to the availability of relatively low land value, the area's available work force, and excellent transportation connections. Both Union Pacific Railroad and BNSF Railway intermodal terminals are located near Stockton, and interstate highways run both north-south and east-west through the area. Stockton is located very near the geographic center of the state of California, and the agricultural products of the Central Valley, much are exported to international markets via the Port.

- iv. *A concise description of the project scope and anticipated benefits proposed for the funding.*

PROJECT SCOPE

This project will build a new grade separated crossing approximately 900 – 1000 feet east of the current at grade crossing location. The Fyffe Avenue Grade Separation Project was approved by the San Joaquin County Council of Governments as a critical high priority project, and was submitted as part of the State of California Freight Plan. Constructing a grade separation will reduce greenhouse gas emissions by allowing a free flow of traffic entering the Port of Stockton. Thus, this project will support the states regional planning goals by leveraging an efficient cost-effective investment transportation project that yields the greatest GHG reductions. (*See Appendix B – Benefit Cost Analysis*). This project completes a critical last mile link from the National Highway System and the California Transportation Corridors into the Ports main entrance which benefits the region and community in vehicle savings in operating costs. These vehicles will be waiting for trains to cross and will be idling for an average of 8 minutes and at times up to 20 minutes on average six times a day, While idling, the trucks and cars will typically continue to run, burning fuel and resulting in other vehicle operating costs, that would be avoided with the proposed project.

PROPOSED BENEFITS

This project promotes efficient goods movement, reduces greenhouse gas emissions, improves safety, and is consistent with plans to maintain transportation facilities and systems in a state of good repair. Currently the vehicle traffic enters the Port of Stockton via Navy Drive which is currently under construction where Navy Drive is being expanded from two lanes to four lanes. Adding two more lanes into and out of the Port solves some of the traffic challenges, but only a grade separation solves the rail crossing delays to the West Coasts second largest inland Port moving over 4 metric tons of cargo a year. For a detailed project cost breakdown (*See Appendix C – Engineering and Costs*) for specific work items.

As a whole, the project benefits include:

- Completing a critical last mile link to the National Highway System and California's Trade Corridors.

- Strengthen the region's transportation systems
- Leverage **\$182,000,000** in recently completed and under construction transportation projects that are designed to improve the flow of traffic into the Port's entrance.
- Improve the quality of life for Northern Californians by improving access to living wage jobs
- Reduce human health risks by reducing greenhouse gas emissions. Relieves congestion and wear-and-tear on key highways by adding the final project linking the recently completed Crosstown Freeway Expansion Project to the Ports West Complex. . .
- Assist farmers, manufacturers, and business owners in getting their products exported to our foreign trading partners through community outreach. The San Joaquin Valley is California's fastest growing region and the nation's number one agricultural producer, generating more than \$35 billion in the gross value of agricultural commodities such as nuts, lettuce, tomatoes, wine, grains and other products. The Port of Stockton plays a major throughput role as an international gateway in moving this freight. As a growing and diversified region, the Valley depends on an efficient goods movement system for its long-term economic success and to safely move resources out of the Valley and on to the rest of the nation. **Vicinity Map**



- v. *A description on how the project furthers the goals of the California Freight Mobility Plan and the guiding principles of the California Sustainable Freight Action Plan.*

This project furthers the goals of the California Freight Mobility Plan and the guiding principles of the California Sustainable Freight Action Plan by meeting all three of the Systems Factors.

Freight Systems Factors

The grade separation meets all three of the factors to include: Throughput, Velocity, and Reliability.

Throughput- The project increases volume of the freight traffic by constructing a grade separation over an at-grade rail line, hence eliminating the rail crossing delays.

Velocity – This project increases the speed of freight traffic moving through the ports distribution systems by creating a free flow of traffic into the port.

Reliability – This project prevents any rail crossing delays which improve the predictability of travel time.

Transportation System Factors

The grade separation project meets all of the Transportation System Factors.

This project increases **safety** for the public, **reduces hours of delays**, **solves a transportation bottleneck**, promotes **multimodal strategies at a port**, and **improves the interregional corridors** that serves statewide trade corridor needs.

Community Impact Factors

Air Quality Impact – This project reduces all of the PM 10 PM 2.5 and other greenhouse gases by eliminating traffic idling delays caused by six units a day entering the port.

Community Impact – This project reduces noise and other negative impacts to the community by increasing the velocity and the reliability of traffic entering the port.

Economic / Jobs Growth - This project stimulates job growth by reducing costs for the shippers and truckers by eliminating the costs of a vehicle having to idle while stuck at the rail crossing.

The shippers can pass these costs savings on to the drivers and buying new equipment.

- vi. *A description of how local residents and community-based organizations were engaged in developing the project.*

COMMUNITY ENGAGEMENT

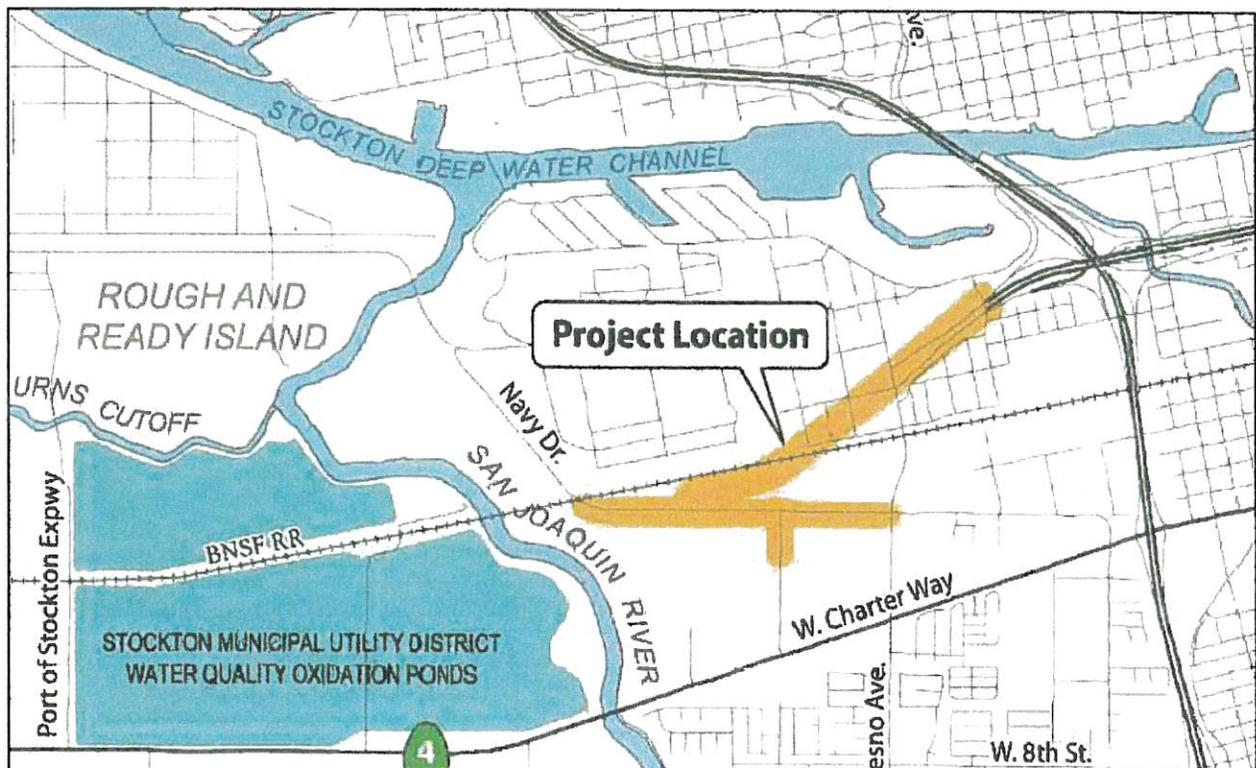
Locally, development at the Port of Stockton is supported by the City of Stockton, the San Joaquin County Board of Supervisors, San Joaquin Council of Governments, the Greater

Stockton Chamber of Commerce, the San Joaquin Partnership (a public private partnership) and other advocacy groups. Regionally and statewide improvements at the Port of Stockton are supported by the state department of transportation (Caltrans) goods movement division and the Caltrans Districts located in the East Bay and Sacramento Counties. Another partner that is working with the Port on improving the air quality in the valley is the San Joaquin County Air Board. They support this project as the grade separation is the final last mile link entering and exiting the Port of Stockton.

During the PA/ED phase, the Port met with the West Complex tenants, carriers and shippers to discuss potential changes to the West Complex ingress/egress point, and construction-related impacts. Follow up meetings were held during PA/ED with the Port tenants, San Joaquin Council of Governments, and CalTrans for additional access and construction-related discussions. A public hearing was held at a regularly scheduled Port Commission meeting, to receive comments during the public review of the draft environmental document. The hearing was properly noticed in accordance with Port and EDA/Caltrans policies and requirements.

Specific Partnerships

Figure 1.1 illustrates the Crosstown Freeway and Underpass linking the National Highway System to the Port of Stockton. The partnerships in these projects were CalTrans, San Joaquin County, California Trade Corridor Improvement Fund, and the Port of Stockton. In addition to the transportation improvements identified in the West Complex Development Plan, the State

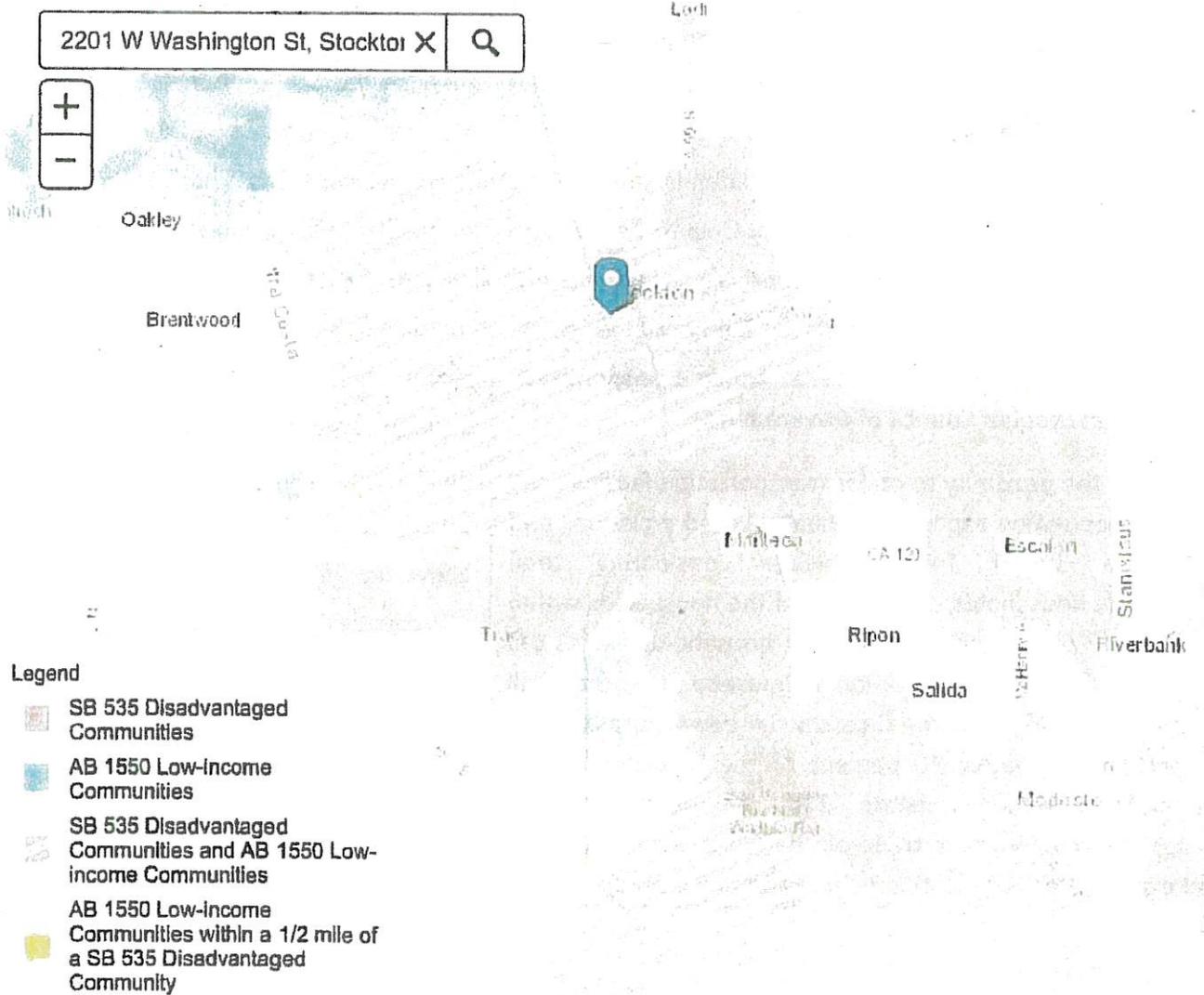


Route 4 (Crosstown Freeway) Extension project, sponsored by the San Joaquin Council of Governments (SJCOG), is 99% completed with final installation of traffic lights and signals remaining. The project extended the Crosstown Freeway approximately 0.7 miles west from its current western terminus at Fresno Avenue. The freeway ends at Navy Drive, and the existing ramps at Fresno Avenue are permanently closed. This project has regional implications to the Port's traffic circulation as, once completed, Navy Drive will become the primary route to the Port's East and West complexes from State Route 4. See Figure 1 for an overview of the SR4 Crosstown Freeway extension project limits.

Map of the Disadvantaged Community

12/28/2017

California Greenhouse Gas Reduction Fund Project Map- BETA



Esri, HERE, Garmin, USGS, NGA, EPA, USDA, NPS

- vii. *A description of how the final project will address community identified needs and benefit disadvantaged communities and low income areas.*

The primary need for this disadvantaged community is for the Port of Stockton to grow and to bring business into the Region. This creates economic growth for our distressed and low income community. The grade separation allows businesses to operate at full capacity and will bring hundreds of family wage jobs to a County that has a significantly high unemployment rate. Stockton and the majority of San Joaquin County are considered SB 535 Disadvantaged Communities and AB 1550 Low-income Communities.

- viii. *A description of how the final project will address community-identified needs along with a description and quantification of the benefits the project*

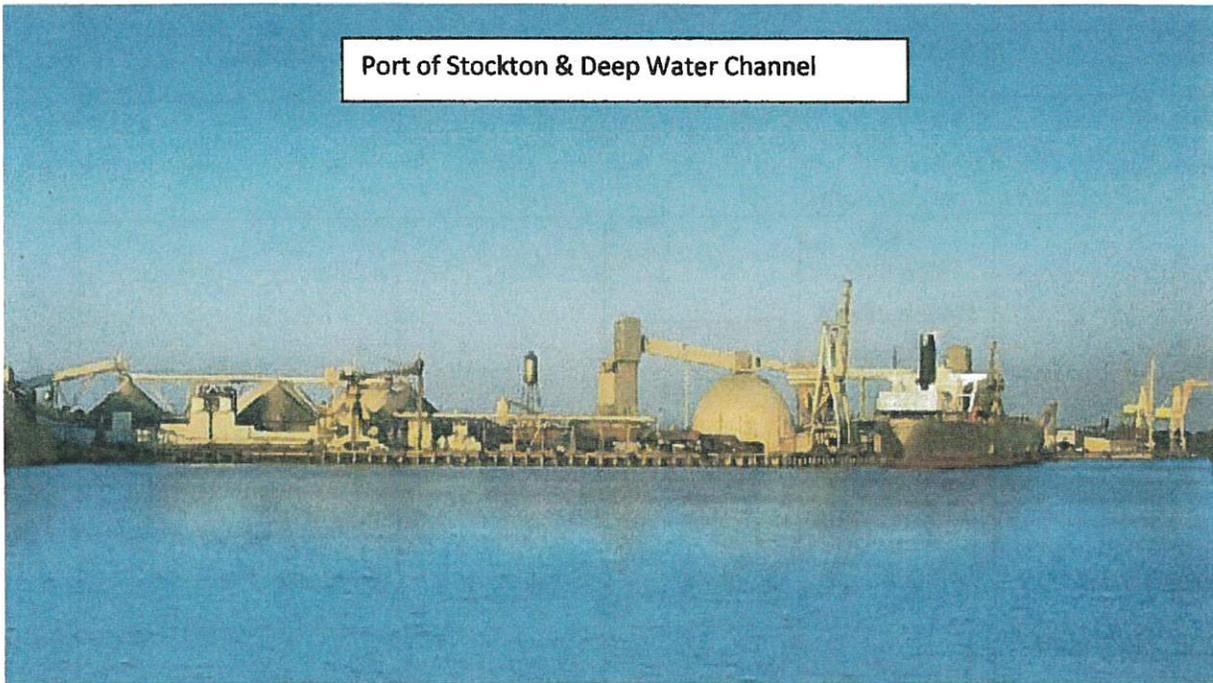
SenateBill 375 – Sustainable Communities and Climate Protection Act of 2008 supports the State's climate action goals to reduce greenhouse gas (GHG) emissions through coordinated transportation and land use planning with the goal of more sustainable communities. One of the objectives and outcomes of the grade separation is to reduce greenhouse gas emissions. The City of Stockton, the largest city in San Joaquin County, has very poor air quality, and the county has been in severe non-attainment of national ambient air quality standards for criteria pollutant imposed by the federal Clean Air Act for the last ten years. Based on data from 2015 (the most

Households within 500 Feet of a major transportation facility – San Joaquin Council of Governments

Given that the proximity to major transportation facilities can increase population exposure to health based emissions and particulate matter from vehicles. Considering total countywide households, 5.6 percent of the households within 500 feet of any major facility are EJ households versus 5.0 percent of the general population. EJ households represent all of the households near the Crosstown Freeway (State Route 4), and approximately 80 percent of the households near Interstate 5 and Interstate 205. Additionally, SICOG recognizes the inherent trade-off between health benefits and exposure risk of locating new residential development in

recent data available), the average ambient levels of diesel particulates and air toxics in our county are above the 95th percentile for all counties in the United States. Given the population growth in Stockton and the Central Valley over the last five years, these ambient levels are expected to have increased.

In addition, The Port of Stockton is located by 2 interstate highways, which experience increasingly heavy traffic congestion daily. There is a large population that uses these highways to commute to the Bay Area and other large cities in the Central Valley, These commuters attract traffic from both the north-south and east-west highways around our Port. Public health authorities have linked diesel exhaust to problems such as asthma, heart disease and lung cancer. Children are particularly affected as their respiratory systems are still developing and they have faster breathing rates than adults. Health statistics confirm that air quality problems have affected our local population of school-aged children. According to the state Department of Human Services, San Joaquin County has the highest rate of children's hospital admissions for asthma in the state. This study will prepare a "sustainable communities strategy" (SCS) as an integral part of San Joaquin's regional transportation plan (RTP). This includes looking at land use, housing, and transportation strategies that, if implemented, would allow our region to meet its GHG emission reduction targets.



- ix. *A project cost estimate which includes the amount and source of all funds committed to the project and the basis for the concluding that the funding is expected to be available.*

	Trade Corridor Enhancement Program Funds (requested)	OTHER FUNDS Port of Stockton	other	Total Funds
Project Approval/ Environmental Document	\$100,000	\$100,000	\$0	\$200,000
Plans, Specifications & Estimate	\$1,000,000	\$400,000	\$0	\$1,400,000
Right of Way (capital and support)	\$1,300,000	\$320,000	\$0	\$1,620,000
Construction (capital and support)	\$6,700,000	\$3,080,000	\$0	\$9,780,000
TOTALS:	\$9,100,000	\$3,900,000	\$0	\$13,000,000

x. *Preconstruction costs only*

	Trade Corridor Enhancement Program Funds (requested)	OTHER FUNDS Port of Stockton	other	Total Funds
Project Approval/ Environmental Document	\$100,000	\$100,000	\$0	\$200,000
Plans, Specifications & Estimate	\$2,000,000	\$300,000	\$0	\$2,300,000
Right of Way (capital and support)	\$300,000	\$100,000	\$0	\$400,000

- xii. *A description that demonstrates the ability to absorb the cost overruns and deliver the project with no additional funding from this program.*

The port has the financial capacity to meet all funding obligations including the \$3, 600,000 cash match.

- xii. *A description of the project delivery plan*

PROJECT READINESS

This project is shovel ready as the Port has already completed the Environmental Impact Report at the project site (*Please see Appendix E – EIR*), and a signed letter of commitment by the Port Director obligating the \$3,900,000 in matching funds. (*Please see Cover Letter – Letter of Commitment*).

If awarded the 2018 Trade Corridor Enhancement Program Grant the Port is ready to start the project as soon as awarded and can have the project completed by 9/30/2020. The Port also has already initiated the preliminary engineering and construction budget (*Please see Appendix C – Engineering*).

Delivery Plan

Milestones	Delivery Date (Month, Year)
Begin Environmental	07/2018
Circulate DED	10/2018
PA & ED	12/2018
Project PS&E	09/2019
Right of Way Certification	02/2019
Ready to List	03/2019
Approve Contract	06/2019
Contract Acceptance	03/2019
End Project	09/2020

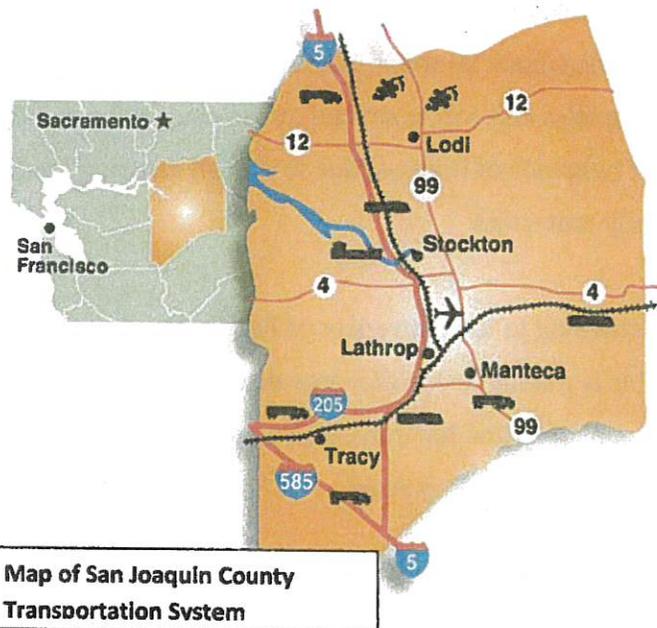
optimal transportation corridors serving existing and future transportation demands into and out of the Port of Stockton as well as identifying future corridors based on the County's growth and traffic volumes. This project promotes regional accessibility, multimodal performance measures, community design, and smart mobility outcomes.

The grade separation will address the goals and expectations of all community stakeholders and takes a sustainable transportation approach that is consistent with the California Freight Mobility Plan. The grade separation completes a last-mile transportation link that preserves the environment and promotes employment opportunities in our disadvantaged community in San Joaquin County. The stakeholders include: San Joaquin County, Port of Stockton, City of Stockton, UP Railway, BNSF Railway, local residents, local trucking companies, and business owners.

The San Joaquin County map shows on the illustration there are multiple layers of transportation networks integrating into and out of San Joaquin County. The Port of Stockton Fyffe Grade Separation Project takes a strategic, sustainable approach that integrates a multimodal grade separation supporting our regional transportation systems.

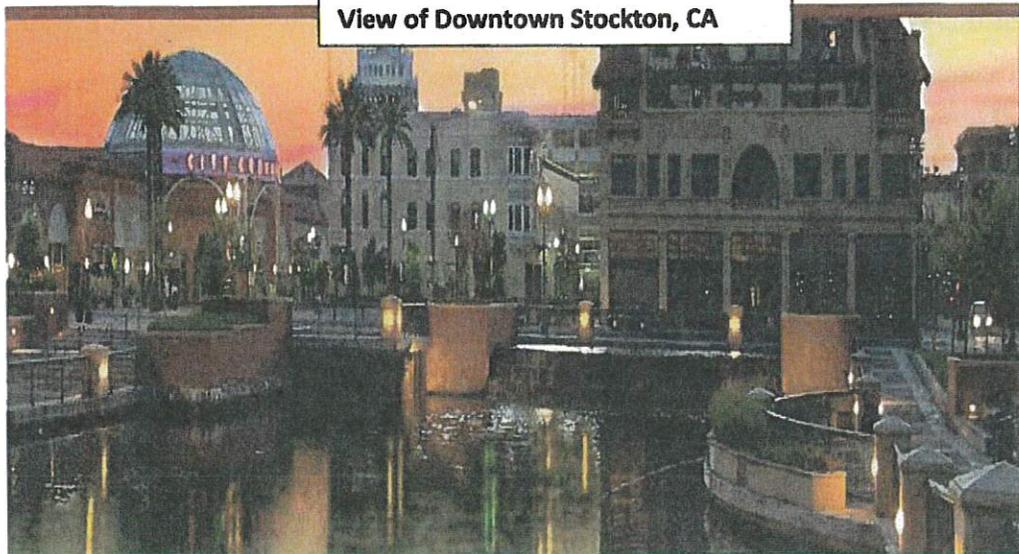
This project supports our state and nation's economy; helps preserve the environment and enhance our community right here in the Central Valley by providing solutions to transportation challenges, and reducing Greenhouse gas emissions. Any increase in efficient transportation systems will cause a domino effect benefiting everyone in our community. Funding these innovative, prioritized, and value-added transportation

systems is exactly what California, the Port, our region, and our community needs to stimulate and sustain economic growth.



The grade separation resolves specific problems such as: high accident locations, congested routes, and an aging transportation corridor that needs to plan for future growth at the Port of Stockton and

the Central Valley. This is especially important with two major highways (I-5 & 99), and two cross town connectors (Hwy 4 &



View of Downtown Stockton, CA

Arch Road) that transport hundreds of thousands a cars and trucks a day. The high levels of existing or future congestion and significant land-use changes in San Joaquin County often involve more than one mode of transportation. This project takes into consideration the corridors and the connector roads that facilitate the movement of goods into a port. The grade separation completes and solves several traffic congestion challenges such as: Currently traffic is stopped for hundreds of hours of due to the rail crossing leading into the port for an average of six (6) daily unit trains.

According to the University of Pacific Center for Business - 2014 Sate of San Joaquin edition:

This is mainly due to the large distances between destinations and the interconnectivity between San Joaquin County and the Bay Area.

“Residents of San Joaquin County drive more miles per person per year than the rest of California”. The research goes on to state that in “2013 residents of San Joaquin County drove approximately 400 miles, or 3.8% per year MORE than the rest of the residents in California, and San Joaquin County residents average 8,712 driving miles

xiv. *A description of the projected quantification and qualitative measures of the proposed improvements.*

The projected qualitative measures of the **Port of Stockton Fyffe Grade Separation Project** have quantifiable statistics supported by actual tonnage and the number of trucks using the Port of Stockton and the existing highways. The Benefit Cost Analysis (*Please see Appendix B – BCA*) provides clear and detailed benefits this project brings to our community and the State by: Reducing public costs for accessing the port, reduce emissions, reduce highway congestion, improve highway safety, and sustains long term “family wage” jobs.

xv. *A description and quantification of the local and corridor effects of the project on GHG's.*

The challenges faced by the San Joaquin County with respect to air quality are unmatched by any other region in the nation. The San Joaquin County does not currently meet Federal health-based ambient air quality standards for ozone and PM2.5 and has been classified as Extreme Non-attainment area for the 1-hour ozone and the 8-hour ozone standards. Topography, climate, geography, and the presence of two major transportation corridors connecting Northern and Southern California all contribute to the region's air pollution problem. FIGURE 1.5 highlights the rail infrastructure at the Port and how the lack of grade crossing causes delays and GHG emissions. Public health authorities have linked diesel exhaust to problems such as asthma, heart disease and lung cancer. Children are particularly affected as their respiratory systems are still developing and they have faster breathing rates than adults. Health statistics confirm that air quality problems have affected our local population of school-aged children. According to the state Department of Human Services, San Joaquin County has the highest rate of children's hospital admissions for asthma in the state.

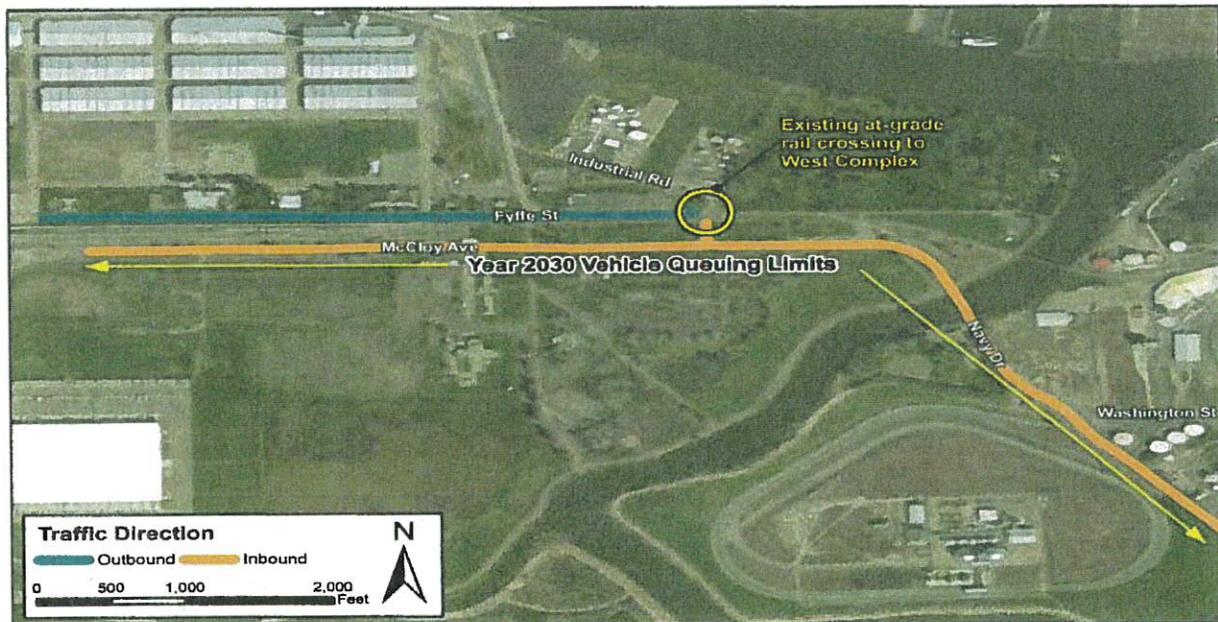
The same characteristics that make the San Joaquin Valley the world's most fertile agricultural region and a beautiful place to live, unfortunately, also create optimal conditions for creating and trapping air pollution. Surrounding mountains, stagnant weather patterns, hot summers, and foggy winters make the formation of air pollution in the San Joaquin Valley inevitable and prevent air pollutants from dispersing. The San Joaquin Valley air basin has a natural propensity to form and retain Ozone. Additionally, the San Joaquin Valley is home to two major transportation corridors that connect Northern and Southern California: Interstate 5 and Highway

99. There are a number of communities located along these two transportation corridors. Many of these residents are low-income and minorities living within 5 miles of either Interstate 5 or Highway 99 and are disproportionately impacted by the pollution generated along these transportation corridors. Over 80% of the NOx inventory in the San Joaquin County is attributed to mobile sources including Heavy-Duty trucks. Furthermore, approximately 45% of all of the truck traffic within the four target corridors in the State occurs within the San Joaquin Valley.

Air Quality Benefits of the Grade Separation Include:

- Completes an environmentally sustainable transportation system that uses less energy such as gasoline and diesel and reduces greenhouse gas (GHC) emissions.
- Improve public safety and security by providing a route that crosses over a rail crossing for the safe movement of hazardous materials, and by enabling more effective transportation responses to natural and manmade disasters.
- Reduced port road congestion by having a free flow of traffic
- Reduced fuel consumption by not having to idle your truck for up to 20 minutes six times a day.
- Reduced harmful emissions (Particulate, NOX, SOX, Ground level Ozone)

With the tremendous growth in population in California’s Central Valley, the Port of Stockton has become a popular location for warehousing, distribution and other logistics businesses



established due to the availability of relatively low land value, the available work force in the

area, and excellent transportation connections. Both Union Pacific Railroad and BNSF Railway intermodal terminals are located near Stockton, and two interstate highways run both north-south and east-west through the area. Stockton is located very near the geographic center of the state of California, and the agricultural products of the Central Valley, much of what is exported to international markets via the Port. The booming population in the area has increased demand for consumer goods, and the logistics businesses are capable of efficiently moving goods into and out of the Port without having constant rail crossing delays. Figure 1.4 highlights how the current traffic has to use the at-grade crossing that causes significant delays.

Specific Air Quality and Safety Benefits include

- This project improves travel times and reduces delay for vehicles entering the West Complex. The grade separation project will provide a direct connection to the West Complex entrance, which will reduce vehicle delay and improve travel times for both inbound and outbound West Complex traffic.
- The project will improve safety by removing the at-grade intersection, thereby eliminating the potential for vehicle/rail conflicts at the West Complex entrance. The grade separation will also provide a critical, reliable emergency evacuation route for West Complex employees, tenants, visitors and emergency response vehicles.
- The project improves air quality by reducing projected congestion and related emissions caused by extensive queuing and vehicle delay. This reduced delay supports the stated purpose(s) of the SR4 Crosstown Freeway Extension project to remove industrial truck traffic from the residential Boggs Tract neighborhood and improve local air quality. The project also supports Marine Highway Corridor 580 by improving intra-Port circulation. This will reduce congestion and improve air quality by removing more than a million truck trips from California's congested freeways.

xvi. A description of how the project furthers the goals, performance measures, and targets of the Regions' Regional Transportation Plan.

The performance measures of this project furthers the goals and targets the Regional Transportation Plan by having a grade separation that integrates traffic at the Port of Stockton via established State Trade Corridors and regional traffic routes. This project creates an efficient method of traffic for an improved transportation system, healthier living, and a reduction in

greenhouse emissions for the region. This transportation project leverages ways to enhance our freight system to bring previously under-utilized cargo handling capabilities into our region's transportation operational matrix. The by-product of this grade separation is that it will provide a prioritized method in which our transportation system can grow and to provides a strategic route into the port that will assist in reducing our greenhouse gas house emissions and reduce fossil fuel consumption. Other very positive outcomes of this project will also be: increased safety, increased trade, improved rail and truck access, and improvement of our port transportation productivity.

GOALS

- 1) The primary goal of this project is to construct a grade separation over Fyffe Ave in order to create a seamless method of handling multi modal transportation traffic into and out of the Port of Stockton.
- 2) Continue to work with the community and the San Joaquin Council of Governments on getting this final stage of linking the Port of Stockton to the States Regional Transportation Plan and the National Highway System funded and completed. The grade separation project is identified by the San Joaquin Council of Governments as a "High" priority project, and is listed in the State of California Freight Plan. This project recognizes and utilizes our completed transportation investments that provide a critical link to California Trade Corridors.
- 3) To reduce delay and congestion by accommodating projected traffic levels on our streets and highways by improving traffic flow and decreasing idle times. This objective will be met by conducting a walking audit. The walking audit will identify gaps in pedestrian, bicycle, transit and motorist facilities. We will collect information on the presence of marked and unmarked crosswalks, bike lanes, curb ramps, signage, sidewalk or pathway width, striping conditions, rolled vs. non-rolled curbs, and overall roadway condition. This objective will be brought up in the community stakeholder meetings.
- 4) To continue meeting with the local and regional planners that accommodates this planned project into the local, regional, and interregional growth strategic plans. This grade separation will be used as a regional tool with the City and County as we implement transportation projects that benefit our region and state.

- 5) This grade separation will provide a efficient method for traffic entering and leaving the port, and for future transportation projects that will improve safety and provide more efficient goods movement between the Port's East and West complexes to two rail yards and two major highways. The grade separation will include alternatives that include methods to create a more livable environment and enhance the California Trade Corridors throughout the State.

XVII. A description of the corridor plan or other coordinated management strategy being implemented by the nominator and within the corridor to preserve corridor mobility.

A primary goal for the Port of Stockton, The City of Stockton, and the Central Valley is to bring business into the region and create economic growth for our distressed community. Investing in a grade separation will enhance a federally designated Trade Corridor (I-5), and will improve infrastructure on a Primary Freight Network that is identified in the California Freight Mobility Plan. This project promotes a corridor-based approach while promoting a public benefit.

The Port of Stockton staff work hand in hand with the City and Regional Planners by serving on Transportation Planning Committees, Regional Transportation Planning Boards, and working with San Joaquin Council of Governments. Any increase in Port activity means an increase in trade, income, revenues, and jobs. While some investments create just one or two benefits, investing in a transportation project that utilizes a grade separation will have a ripple effect of benefits, including a focus for prioritization of limited funding resources.

XVIII. A description of how the project uses advanced, clean, or innovated technologies to support the freight transportation system. Also, include any associated supporting infrastructure.

The primary purpose of the Fyffe Avenue Grade Separation Project is to improve local, regional and interregional access to the Port of Stockton. With the construction of the Crosstown Freeway Extension, Navy Drive becomes the primary link between the Port and the regional transportation corridors. Because the Port and the West Complex are a goods movement terminal handling facilities, a wide variety of freight and raw materials, and a high number of heavy trucks must travel to and from the Port to transport these goods to their end destinations. The proposed project would facilitate this movement of goods, and improve access between the Port's West Complex and the regional transportation network.

Innovative Technologies and Project Benefits

Importer

- Reduced gasoline costs by not having to sit at the rail crossings up to 20 minutes.
- Reduction in trucking costs includes gasoline savings and truck driver costs.
- Expense reductions (Shared cost with exporter)
- Higher yields (e.g. quicker and more efficient round trips to the Port of Stockton)
- Reduced container liability/exposure to rail crossings and vehicle traffic.

Exporter

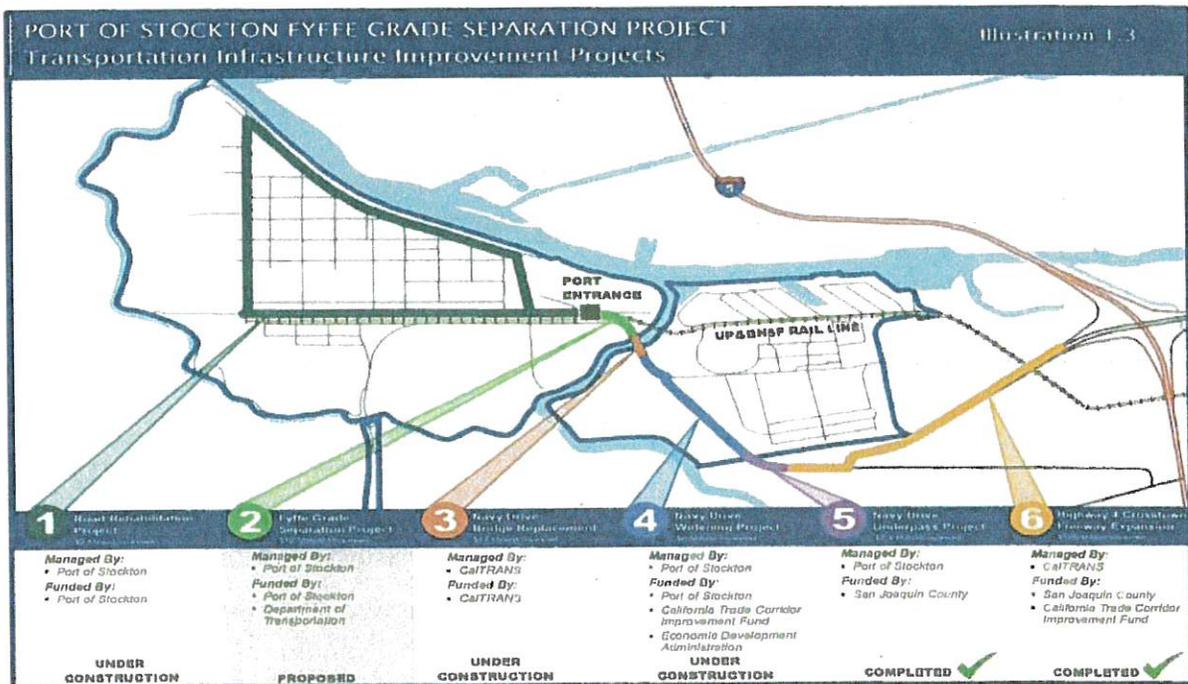
- Creates more efficiencies by reducing gasoline costs and idle time
- Improves rail efficiency and transit reliability
- Local access is more efficient and safer.
- Reduction of trucking expenditures/costs
- Higher yields (e.g. round trips to the Port of Stockton)

Trucker Value:

- Reduced empty miles and/or reduce transit line times as the trucker enters and exits the Port of Stockton
- Increased utilization of power/less idle time.
- Better fuel efficiency.
- Potential for extended free time as a result of the free flow of traffic

Associated Supporting Infrastructure

This project leverages five (5) transportation projects that are designed to move freight and people more efficiently into and out of the Port. These



transportation projects are working together to promote the efficient movement of goods. This

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2017)

Date: 1/30/18

District	County	Route	EA	Project ID	PPNO	Alt Proj. ID
10	SJ	Fyffe Avenue				
Project Title: Fyffe Avenue Grade Separation						

Existing Total Project Cost (\$1,000s)									Implementing Agency
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	
E&P (PA&ED)									Port of Stockton
PS&E									Port of Stockton
R/W SUP (CT)									Port of Stockton
CON SUP (CT)									Port of Stockton
R/W									Port of Stockton
CON									Port of Stockton
TOTAL									
Proposed Total Project Cost (\$1,000s)									Notes
E&P (PA&ED)		200						200	
PS&E		1,400						1,400	
R/W SUP (CT)									
CON SUP (CT)			1,220					1,220	
R/W		400						400	
CON			9,780					9,780	
TOTAL		2,000	11,000					13,000	

Fund No. 1:	Existing Funding (\$1,000s)									Program Code
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	Funding Agency	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										
Proposed Funding (\$1,000s)									Notes	
E&P (PA&ED)									STATE - SB 1 - TCEP	
PS&E		1,000						1,000		
R/W SUP (CT)										
CON SUP (CT)			1,220					1,220		
R/W										
CON			6,780					6,780		
TOTAL		1,000	8,000					9,000		

Fund No. 2:	Existing Funding (\$1,000s)									Program Code
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	Funding Agency	
E&P (PA&ED)										
PS&E										
R/W SUP (CT)										
CON SUP (CT)										
R/W										
CON										
TOTAL										
Proposed Funding (\$1,000s)									Notes	
E&P (PA&ED)		200						200	PORT OF STOCKTON LOCAL FUNDS	
PS&E		400						400		
R/W SUP (CT)										
CON SUP (CT)										
R/W		400						400		
CON			3,000					3,000		
TOTAL		1,000	3,000					4,000		

project completes the last segment by providing a grade separation over a rail crossing. The grade separation project integrates several projects currently underway or completed such as: The Navy Drive Bridge Replacement Project, the Navy Drive Widening Project, the Navy Drive Underpass, and the Crosstown Highway 4 expansion projects. These regionally planned transportation projects are part of the Ports infrastructure strategic plan. Please see Illustration 1.3 as it highlights the transportation projects funded by state, regional, and local partners including the Port of Stockton

PROJECT PROGRAMMING REQUEST

DTP-0001 (Revised July 2017)

Date: 1/30/18

District	County	Route	EA	Project ID	PPNO	Alt Proj. ID
10	SJ	Fyffe Avenue				
Project Title: Fyffe Avenue Grade Separation						

Fund No. 12:									Program Code
Existing Funding (\$1,000s)									
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 13:									Program Code
Existing Funding (\$1,000s)									
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fund No. 14:									Program Code
Existing Funding (\$1,000s)									
Component	Prior	18/19	19/20	20/21	21/22	22/23	23/24+	Total	Funding Agency
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									
Proposed Funding (\$1,000s)									Notes
E&P (PA&ED)									
PS&E									
R/W SUP (CT)									
CON SUP (CT)									
R/W									
CON									
TOTAL									

Fyffe Grade Separation Project Benefit-Cost Analysis

Prepared for

Port of Stockton

October 2017



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Appendix A Traffic Counts from September 2017

Appendix B INFRA Benefit Cost Analysis for Port of Stockton

Table(s)

Table 1. Estimated Capital Cost

Table 2. Value of Travel Time Savings (VTTs) Benefits

Table 3. Operating Costs Benefits Associated with Reduced Idling

Table 4. NPV for Emission Reduction Benefits for Build Conditions (under Base Scenario and High Scenario)

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Figure(s)

Figure 1. Traffic Count Location from September 2017

Figure 2. Average Daily Traffic counts at Navy Drive and Fyffe Avenue.

Figure 4. Benefit Cost Ratio of Fyffe Grade Separation Project based on 7% discount rate

Figure 5. NPV of Fyffe Avenue Grade Separation Project based on 7% discount rate

Figure 6. NPV of Fyffe Avenue Grade Separation Project based on 3% discount rate

Figure 7. Benefit Cost Ratio of Fyffe Grade Separation Project based on 3% discount rate

Acronyms and Abbreviations

ADT	average daily traffic
ARB	California Air Resources Board
BCA	benefit-cost analysis
Caltrans	California Department of Transportation
CO	carbon monoxide
DOE	U.S. Department of Energy
DOT	U.S. Department of Transportation
GHG	greenhouse gas
mph	miles per hour
NOx	nitrogen oxides
NPV	net present value
PM _{2.5}	particulate matter with aerodynamic diameter equal to or less than 2.5 micrometers
PM ₁₀	particulate matter with aerodynamic diameter equal to or less than 10 micrometers
Port	Port of Stockton
SO ₂	sulfur dioxide
VMT	vehicle miles traveled
VOC	volatile organic compound
VTTS	value of travel time savings

Introduction

This Benefit-Cost Analysis (BCA) Report summarizes data collection, inputs, and assumptions used to prepare the BCA for the Port of Stockton's (Port) Fyffe Avenue grade separation project. The background calculations and analysis are included as Appendix B. The BCA was prepared consistent with the U.S. Department of Transportation (DOT) Benefit-Cost Analysis Guidance for TIGER and INFRA Applications (DOT, 2017), and for the 2018 Trade Corridor Enhancement Program.

This BCA includes a 30-year analysis period (2016 through 2046); the project is assumed to be constructed and open to traffic by 2019. The analysis timeframe includes a minimum of 27 years after construction of the project. The useful life of a project of this type may extend well beyond the 30 years. However, a shorter 30-year analysis period was chosen, because Port growth and correlative traffic assumptions can be more reliably forecasted and supported within this timeframe.

Project Overview

The Port's West Complex entrance has an at-grade rail crossing, where vehicular queues form when freight trains are accessing the Port terminals. The project would alleviate queuing by constructing a grade separation over the rail line and redirecting West Complex traffic directly onto Fyffe Avenue. This grade separation will eliminate queues and thereby reduce the waiting time for cars and trucks entering and exiting the West Complex, along with the associated operating costs and air emissions.

Project Costs

3.1 Capital Expenditures

Table 1 summarizes the estimated capital costs for the Fyffe Avenue grade separation. The estimate is based on current California Department of Transportation (Caltrans) construction cost data, as well as recent construction bids received for similar projects at the Port of Stockton. The estimate includes standard 10 percent mobilization costs, and 15 percent of the overall cost is assumed for construction management. A 25 percent contingency is assumed, given the preliminary information developed for the project at this stage. Project Development Costs (for example, environmental, final design, and right-of-way support) are not included.

Table 1. Estimated Capital Costs
Fyffe Grade Separation Project Benefit-Cost
Analysis

Cost Item	Amount
Roadway	\$4,542,711
Railroad	\$200,000
Right-of-Way and Utilities	\$300,000
Structures	\$2,282,985
Subtotal	\$7,325,696
Mobilization (@10%)	\$813,966

Table 1. Estimated Capital Costs
 Fyffe Grade Separation Project Benefit-Cost
 Analysis

Cost Item	Amount
SUBTOTAL	\$8,139,662
Contingency (25%)	\$2,034,916
Construction Management (15%)	\$1,220,949
Total	\$11,395,527

3.2 Operating and Maintenance Expenditures

The project will construct a new bridge overcrossing of the railroad tracks accessing the West Complex, as well as the roadway approaches needed to conform the project to the Port's existing roadway network. Maintenance and inspection cost assumptions for the bridge and roadway over the 30-year analysis timeframe are summarized below. In general, bridge maintenance and inspections are estimated to occur at regular intervals over the 30-year analysis period. As the project ages, more substantial bridge and roadway rehabilitation is assumed 20 years after construction of the project. References used to develop the bridge and roadway lifecycle costs include the National Cooperative Highway Research Program Report 483, *Bridge Life-Cycle Cost Analysis*, and the Federal Highway Administration *Life-Cycle Cost Analysis in Pavement Design*, September 1998 (Publication No. FDWA-SA-98-079).

3.2.1 Bridge and Roadway Maintenance Assumptions

The following assumptions were made regarding bridge and roadway maintenance:

- Bridge maintenance costs are estimated to be \$1,000 per year starting in 2019.
- Bridge inspection costs are estimated to be \$2,000 every other year starting in 2020.
- Bridge resurfacing cost are estimated to be \$20,000 in 2038, 20 years after completion of the bridge.
- Road resurface costs are estimated to be \$91,000 in 2038, 20 years after completion of the project.
- The existing rail crossing will not be removed, so the costs of maintaining this crossing will not change. However, the volume of traffic using this rail crossing will be substantially reduced.

3.3 Residual Value

Residual value is estimated based on DOT guidance (2017) ([Project Study Period/Project Life] multiplied by Capital Costs). Residual value is the estimated value of the project at the end of the study period and represents a depreciated value of the assets that are expected to continue to provide benefits after the end of the study period. The estimated residual value in 2046 is estimated to be approximately \$6,837,000.

Project Benefits

4.1 Value of Travel Time Savings

To more accurately assess existing and future project benefits, updated traffic counts were conducted at the West Complex entrance in September 2017 for 3 days, using tubes (hoses) placed on the roadway and video recordings. The count location is the gray circle on the map in Figure 1. The tube counts were made on the three legs of the Navy Drive/McCloy Avenue intersection, and the video recording was made at the intersection. The video data included a breakdown of vehicle types (automobile, light truck, and heavy truck). Based on the data collected, 3,066 vehicles access the Port's West Complex daily. Of those daily numbers, approximately 65 percent are cars, and 35 percent include light and heavy trucks. See Appendix A for a detailed summary of the traffic counts based on the video observations, which proved to be more accurate than the tube counts.

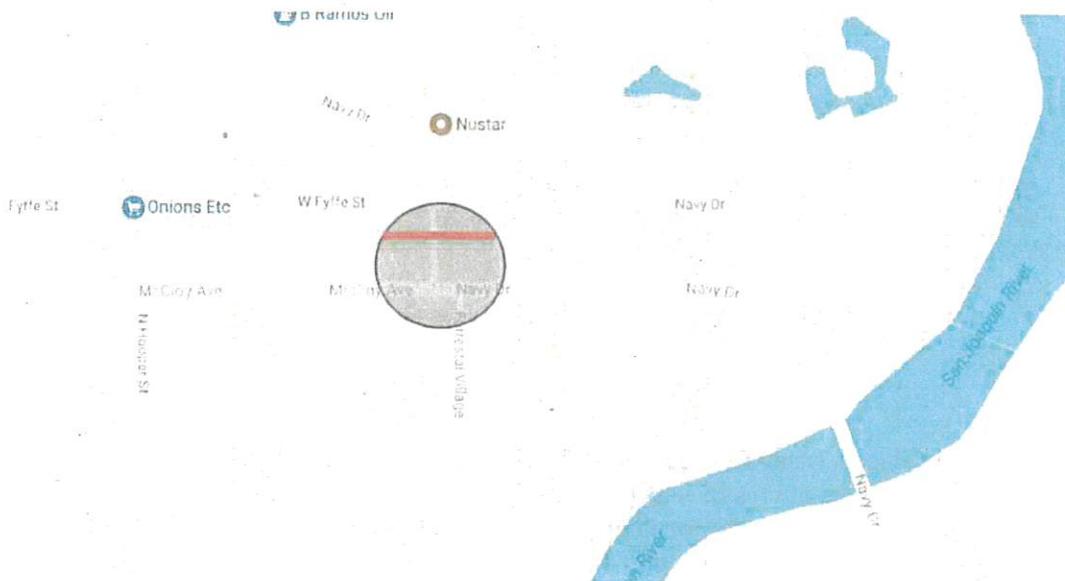


Figure 1. Traffic Count Location from September 2017

Traffic volumes for the proposed Fyffe Avenue grade separation were determined based on September 2017 traffic counts for the north leg of the intersection (shown in red in Figure 1), on northbound/southbound Navy Drive across the tracks.

Figure 2 summarizes projected average daily traffic (ADT) for the proposed Fyffe Avenue grade separation (at the West Complex entrance) for the period 2016 to 2046. Under both the No Build and Build conditions, ADT was projected based on two growth scenarios, a Base scenario and a High scenario. The Base scenario assumes no growth in ADT counts from 2016 through 2046, whereas the High scenario assumes a yearly 3.5 percent growth in ADT during the same timeframe. The 3.5 percent High scenario was used to prepare the BCA, as it represents a reasonable assessment of Port historic and forecasted growth over the analysis period. Figure 2 shows that ADT would increase under the High scenario throughout the 30-year timeframe, resulting in over 8,500 daily vehicles entering/exiting the West Complex by 2046.

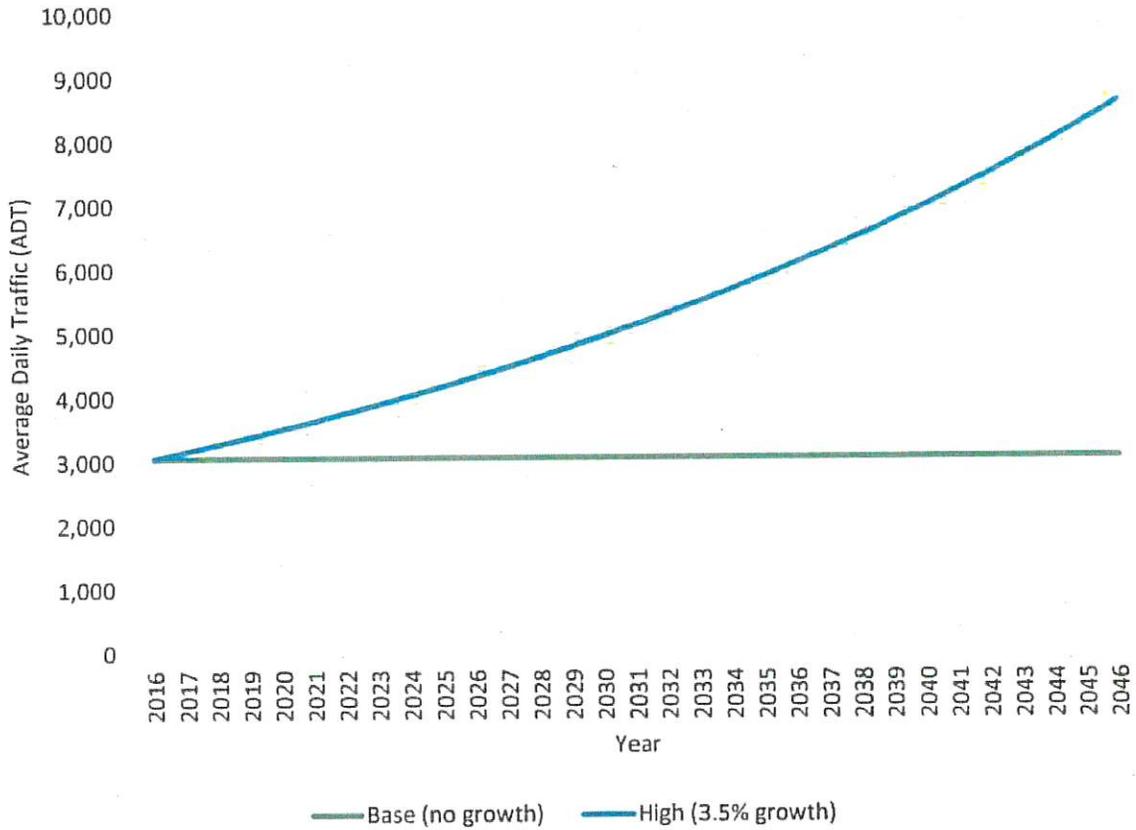


Figure 2. Average Daily Traffic counts at Navy Drive and Fyffe Avenue

Table 2 summarizes the Value of Travel Time Savings (VTTs) benefits under the Base and High scenarios, where travel time for both drivers of private vehicles and commercial vehicles (like trucks) were calculated under the Build condition. Under the Build condition, there would be a benefit in travel time savings of \$3,684,159 under the Base scenario, and a \$5,826,134 benefit value under the High scenario.

Table 2. VTTS Benefits

Fyffe Grade Separation Project Benefit-Cost Analysis

	Base Scenario (no growth)	High Scenario (3.5% growth)
Private Vehicle Travel		
Value of Time (per person-hour) ^a	\$14.10	\$14.10
NPV of Value of Travel Time Savings (VTTS) ^b	\$1,807,101	\$2,857,723
Commercial Vehicle Operators		
Value of Time (per person-hour) ^a	\$27.20	\$27.20
NPV of Value of Travel Time Savings (VTTS) ^b	\$1,877,058	\$2,968,410
Total NPV VTTS (Build condition)	\$3,684,159	\$5,826,134

^a DOT, 2017. Appendix A, Table 9.^b Base year is 2016. VTTS 2019 – 2046. Discount Rate of 7 percent. 30-year study period.
NPV = net present value

4.2 Vehicle Operating Cost Savings

The project will result in savings in vehicle operating costs, as these vehicles will be waiting for trains to cross and will be idling for an average of 8 minutes and at times up to 20 minutes. While idling, the trucks and cars will typically continue to run, burning fuel and resulting in other vehicle operating costs, that would be avoided with the proposed project. As the DOT vehicle unit operating costs are measured in terms of cost per mile traveled, the cost of idling was not readily available.

Table 3 summarizes the NPV of operating costs benefits associated with reduced idling. To estimate the vehicle operating cost for time spent idling at the train crossing, idling fuel usage estimates were obtained from the U.S. Department of Energy (DOE) (2017), and average fuel costs were obtained from AAA. The annual delay time at crossing is the same as the estimates developed for VTTS. The formula for estimating idling costs is Annual Delay at Crossing (hours/year) * Idling Fuel Use (gallons per hour with no load) * Fuel Costs (cost per gallon).

Table 3. Operating Costs Benefits Associated with Reduced Idling

Fyffe Grade Separation Project Benefit-Cost Analysis

	Base Scenario (no growth)	High Scenario (3.5% growth)
Private Vehicle		
NPV of Operating Costs Benefits Associated with Reduced Idling ^a	\$86,558	\$136,887
Commercial Vehicle Operators		
NPV of Operating Costs Benefits Associated with Reduced Idling ^b	\$84,229	\$133,203
Total NPV of Operating Costs Benefits Associated with Reduced Idling^c	\$170,787	\$270,090

Table 3. Operating Costs Benefits Associated with Reduced Idling
Fyffe Grade Separation Project Benefit-Cost Analysis

	Base Scenario (no growth)	High Scenario (3.5% growth)
^a Average compact and large sedan, gas		
^b Medium heavy truck, diesel		
^c Base year is 2016. VTTs 2019 – 2046. Discount Rate of 7 percent. 30-year study period. https://energy.gov/eere/vehicles/fact-861-february-23-2015-idle-fuel-consumption-selected-gasoline-and-diesel-vehicles Argonne National Laboratory, <i>Idling Reduction Savings Calculator</i> , accessed December 2014. Stockton-Lodi Average Gas Price (regular and diesel). Prices updated as of 12/6/16. Source: AAA State Gas Prices. Accessed on December 6, 2016. http://gasprices.aaa.com/?state=CA .		

As shown in Table 3, the NPV of operating costs and benefits associated with reduced idling under the Build condition for private and commercial vehicles would amount to \$170,787 for the Base scenario and \$270,090 for the High scenario.

4.3 Emissions Reduction Benefits

Emission reduction benefits were evaluated following the *Benefit-Cost Analysis Guidance for TIGER and INFRA Applications* (DOT, 2017). Emission factors of criteria pollutants, including volatile organic compounds (VOC), carbon monoxide (CO), nitrogen oxides (NOx), particulate matter with aerodynamic diameter equal to or less than 10 micrometers (PM₁₀) and with aerodynamic diameter equal to or less than 2.5 micrometers (PM_{2.5}) from vehicles travel and idling in the project study area were estimated using Caltrans' CT-EMFAC2014 (version 6) program that were developed based on California Air Resources Board (ARB)'s EMFAC2014 program. CT-EMFAC2014 does not provide emission factors for sulfur dioxide (SO₂), therefore, SO₂ emissions were estimated using the ARB EMFAC2014 program. PM₁₀ and PM_{2.5} emission factors included the tail pipe exhaust, brake wear, and tire wear. Emission factors were derived for each of the years for San Joaquin County where the project would be located between 2019 (open to construction) and 2046.

Vehicle emissions were estimated for the No Build and Build conditions based on the projected traffic information that included the vehicle miles traveled (VMT) and hours of delay at the at-grade rail crossing. The Base and High scenario were applied to both the No Build and Build conditions. Vehicle emissions were estimated for each of the years starting at the project's opening year of 2019 through 2046.

Based on the traffic information, the average speeds of the No Build and Build conditions are anticipated to be approximately 20 miles per hour (mph) and 25 mph, respectively. For trips to and from the west, VMT would increase slightly compared to the No Build condition, when vehicles change their current route to use the proposed grade separation; however, only a very small percent (4 to 9 percent) of the trucks would use this route. For trips to and from the east (the majority of trips), VMT will decrease slightly. Therefore, the overall VMT of the No Build and the Build conditions would be similar.

The project would reduce vehicle emissions by eliminating the vehicle idling emissions at the at-grade rail crossing. Emission reduction benefits of each year after project opening were calculated using the estimated emission changes between the Build and No Build conditions and DOT's monetized values for VOC, NOx, PM, and SO₂ in Table 9 in Appendix A of the *Benefit-Cost Analysis Guidance* (2017); upon this same guidance, emission reduction benefits in future years were discounted by a factor of 7 percent each year. The benefits from 2019 through 2047 were summed to obtain the NPV for emission

reduction benefits. Detailed emission factors, relevant traffic data, emission calculations, and benefits calculations are presented in Appendix B.

Table 4 presents the summary of the emission reduction benefits associated with the project emission changes for both the Base and High scenarios. The Build condition would have VOC, NO_x, SO₂, and PM emission reductions in comparison to the No Build condition. The estimated benefits (NPV) are approximately \$31,149 under the Base scenario, and \$47,679 under the High scenario as a result of the reduction of air emissions.

Table 4. NPV for Emission Reduction Benefits for Build Conditions (under Base Scenario and High Scenario)
Fyffe Grade Separation Project Benefit-Cost Analysis

	VOC	NO _x	SO ₂	PM	Total
Monetized Values, \$2016 dollar (\$/ton) ^a	\$1,872	\$7,377	\$43,600	\$337,459	—
Base Scenario (no growth) NPV ^b	\$496	\$25,103	\$672	\$4,879	\$31,150
High Scenario (3.5% growth) NPV ^b	\$745	\$38,790	\$1,049	\$7,095	\$47,679

^a DOT, 2017. Appendix A, Table 9.

^b Base year is 2016. Emissions Reduction Benefits 2019 – 2046. Discount Rate of 7 percent. 30-year study period.

While the 2017 *Benefit-Cost Analysis Guidance* does not have monetized values for CO and greenhouse gas (GHG), the emission reduction benefits for these two pollutants were not included in the NPV calculation. However, emission calculations showed that there is a reduction in CO and GHG emissions under the Build condition, therefore resulting in a benefit. Under the High and Base scenarios, GHG emissions in the Build condition would be reduced by approximately 31 percent in comparison to the No Build condition. Similarly, CO emissions would be reduced by 89 percent in the Build condition compared to the No Build condition.

Costs and Benefits Not Addressed Quantitatively

5.1 Travel Time Reliability

The proposed overpass is expected to provide a benefit for freight companies and other users of the Port in terms of efficiency in improving the turnaround time it takes trucks and other vehicles to access and leave the Port. Without potential delays as a result of trains blocking the West Complex entrance, it is expected that the variation in the amount of time that trucks and other vehicles are held up either accessing or leaving the Port will be significantly reduced. While the Port believes this is a significant benefit, it is difficult to estimate the value of this benefit and thus it is described qualitatively.

5.2 Safety

There have been few reported accidents on Port property. With traffic redirected away from the at-grade rail crossing, the Port will be eliminating most of the traffic that currently uses this rail crossing, thereby substantially reducing the risk of a crash at this crossing. While there may be significant savings in terms of cost of vehicle crashes, and reduced fatalities and injuries, the value of this benefit of the project has not been estimated for this analysis.

5.3 Benefits to Existing and Future Users

The project will reduce access and exit times for vehicles using the Port and provide more consistency in the amount of time required by trucking companies and others to access the Port facilities. This improvement may attract additional interest by freight companies or others to make use of the Port facilities. The savings and benefits to these new users could be significant, but is not able to be quantified at this time, and is therefore described qualitatively in this section.

5.4 Work Zone Impacts

The proposed grade separation and roadway approaches would be able to be constructed on an entirely new alignment. Work zone impacts would be focused where the project conforms with the existing roadway. As the proposed grade separation would not be constructed where the existing entrance to the Port is located, any delays and other costs associated with construction activities associated with the project are expected to be minimal.

Benefit Cost Analysis Results

The results of the BCA for the proposed project are presented in Table 5, which assumes a 7 percent discount rate and a 30-year study period. Appendix B provides the details of the NPV calculations. The NPV calculation takes the initial cost of the project and the projected benefits over the study period, and discounts these costs and revenues at the 7 percent discount rate, which reduces the value of future costs and benefits by the time value of money (discount rate). Thus the initial capital cost of about 11.4 million is multiplied by the discount factor for Year 2, or 0.873, to derive a discounted value of \$9,953,295. Benefits that begin in year 3 are similarly discounted over the 30-year study period.

Table 5. Summary of Discounted Cash Flows for Fyffe Avenue Grade Separation Project
Fyffe Grade Separation Project Benefit-Cost Analysis

Period	Year	Discount Factor	Base Scenario (No Growth)		High Scenario (3.5% Growth)	
			PV Benefits - Costs	Cum. Cash Flow	PV Benefits - Costs	Cum. Cash Flow
0	2016	1.000	\$0	\$0	\$0	\$0
1	2017	0.935	\$0	\$0	\$0	\$0
2	2018	0.873	(\$9,953,295)	(\$9,953,295)	(\$9,953,295)	(\$9,953,295)
3	2019	0.816	\$299,059	(\$9,654,236)	\$331,650	(\$9,621,645)
4	2020	0.763	\$277,826	(\$9,376,410)	\$319,142	(\$9,302,503)
5	2021	0.713	\$260,989	(\$9,115,421)	\$310,096	(\$8,992,407)
6	2022	0.666	\$242,527	(\$8,872,894)	\$298,578	(\$8,693,829)
7	2023	0.623	\$227,675	(\$8,645,219)	\$289,826	(\$8,404,003)
8	2024	0.582	\$211,607	(\$8,433,612)	\$279,187	(\$8,124,816)
9	2025	0.544	\$198,841	(\$8,234,771)	\$271,195	(\$7,853,621)
10	2026	0.508	\$184,804	(\$8,049,967)	\$261,308	(\$7,592,313)
11	2027	0.475	\$173,649	(\$7,876,318)	\$253,736	(\$7,338,577)

Table 5. Summary of Discounted Cash Flows for Fyffe Avenue Grade Separation Project
Fyffe Grade Separation Project Benefit-Cost Analysis

			Base Scenario (No Growth)		High Scenario (3.5% Growth)	
12	2028	0.444	\$161,384	(\$7,714,934)	\$244,531	(\$7,094,046)
13	2029	0.415	\$151,639	(\$7,563,295)	\$237,387	(\$6,856,659)
14	2030	0.388	\$140,929	(\$7,422,366)	\$228,835	(\$6,627,824)
15	2031	0.362	\$132,420	(\$7,289,946)	\$222,092	(\$6,405,732)
16	2032	0.339	\$123,067	(\$7,166,879)	\$214,140	(\$6,191,592)
17	2033	0.317	\$115,638	(\$7,051,241)	\$207,781	(\$5,983,811)
18	2034	0.296	\$107,471	(\$6,943,770)	\$200,384	(\$5,783,427)
19	2035	0.277	\$100,984	(\$6,842,786)	\$194,391	(\$5,589,036)
20	2036	0.258	\$93,854	(\$6,748,932)	\$187,513	(\$5,401,523)
21	2037	0.242	\$88,190	(\$6,660,742)	\$181,874	(\$5,219,649)
22	2038	0.226	\$86,910	(\$6,603,832)	\$150,417	(\$5,069,232)
23	2039	0.211	\$77,019	(\$6,526,813)	\$170,167	(\$4,899,065)
24	2040	0.197	\$71,583	(\$6,455,230)	\$164,202	(\$4,734,863)
25	2041	0.184	\$67,266	(\$6,387,964)	\$159,211	(\$4,575,652)
26	2042	0.172	\$62,517	(\$6,325,447)	\$153,657	(\$4,421,995)
27	2043	0.161	\$58,748	(\$6,266,699)	\$148,968	(\$4,273,027)
28	2044	0.150	\$54,602	(\$6,212,097)	\$143,794	(\$4,129,233)
29	2045	0.141	\$51,309	(\$6,160,788)	\$139,383	(\$3,989,850)
30	2046	0.131	\$45,888	(\$5,214,900)	\$1,032,759	(\$2,957,091)
Total			(\$5,214,900)		(\$2,957,091)	

The Base scenario and High scenario (3.5 percent growth rate) analyses provide an upper and lower bound to these calculations. The NPV analysis shows the NPV of the results as ranging from a low of approximately -\$5.2 million under the Base scenario, and a high value of approximately -\$2.9 million under the High scenario (3.5% growth rate analysis).

Figure 4 summarizes the benefit-cost ratio of the project. The benefit cost ratio is calculated by dividing the present value of the projected benefits by the present value of the costs. The benefit cost ratio ranges from 0.48 under the Base scenario, and 0.71 under the 3.5% growth rate analysis (High scenario).

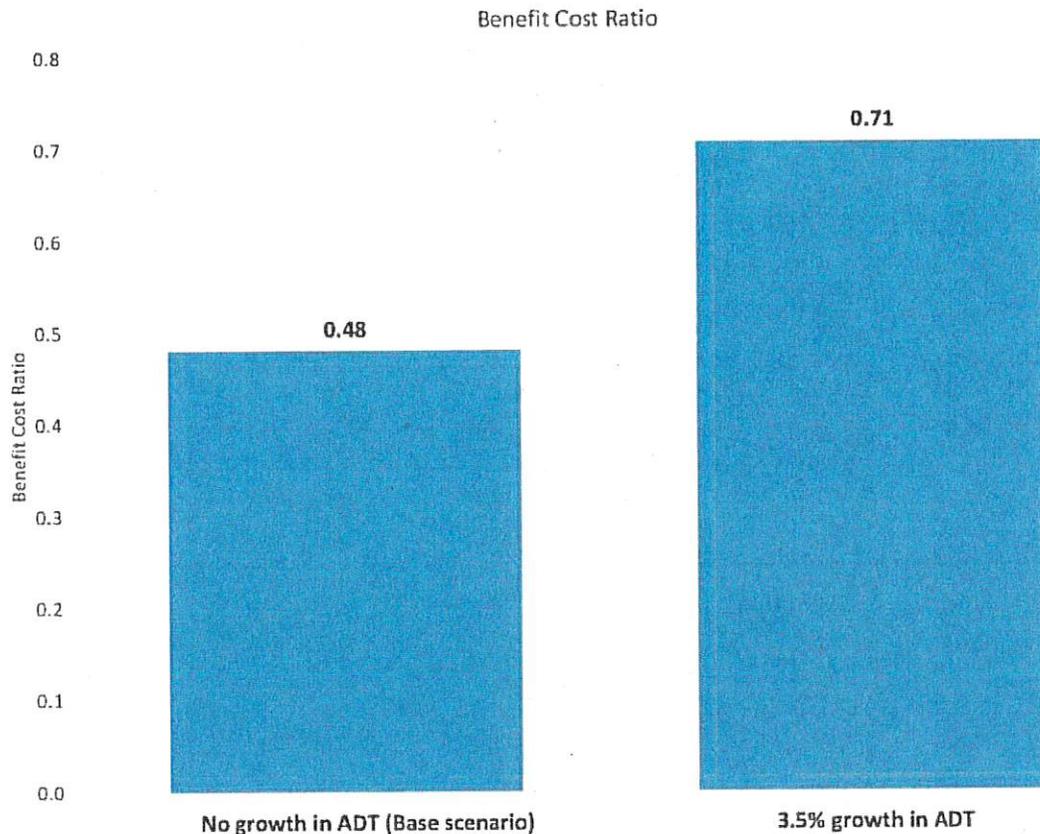


Figure 4. Benefit Cost Ratio of Fyffe Grade Separation Project Based on 7 Percent Discount Rate

Conclusion

While the NPV is negative and benefit-cost ratio less than 1 (under both the Base and High scenarios), which indicates that the discounted value of the monetized benefits do not exceed the discounted value of the costs, there are benefits that could not be quantified and could provide additional benefits. These include:

- CO₂ and GHG emissions
- Travel and time reliability
- Safety
- Benefits to future users

While these benefits are difficult to reliably quantify or monetize, we do not believe these benefits are insignificant and, if monetized, could significantly change the results of this analysis.

7.1 Sensitivity Analysis

As part of the sensitivity analysis, the discount rate was adjusted to 3 percent; the results of that analysis are provided below. Table 5 summarizes the discounted cash flow for two scenarios, no growth (Base) and 3.5 percent growth (High) in ADT. Figure 4 compares the total Benefit-Cost Ratio for the Base (no growth) and High (3.5 percent growth) scenarios, while Figure 5 compares the total NPV of the Base (no growth) and High (3.5 percent growth) scenarios. The results presented in Figures 4 and 5 are based

on a 7 percent discount rate. However, based on a sensitivity of adjusting the discount rate to 3 percent, Figure 6 (NPV) and Figure 7 (benefit cost ratio) show improved financial conditions, with a positive NPV and benefit cost ratio greater than 1 for the 3.5% growth (High) scenario.

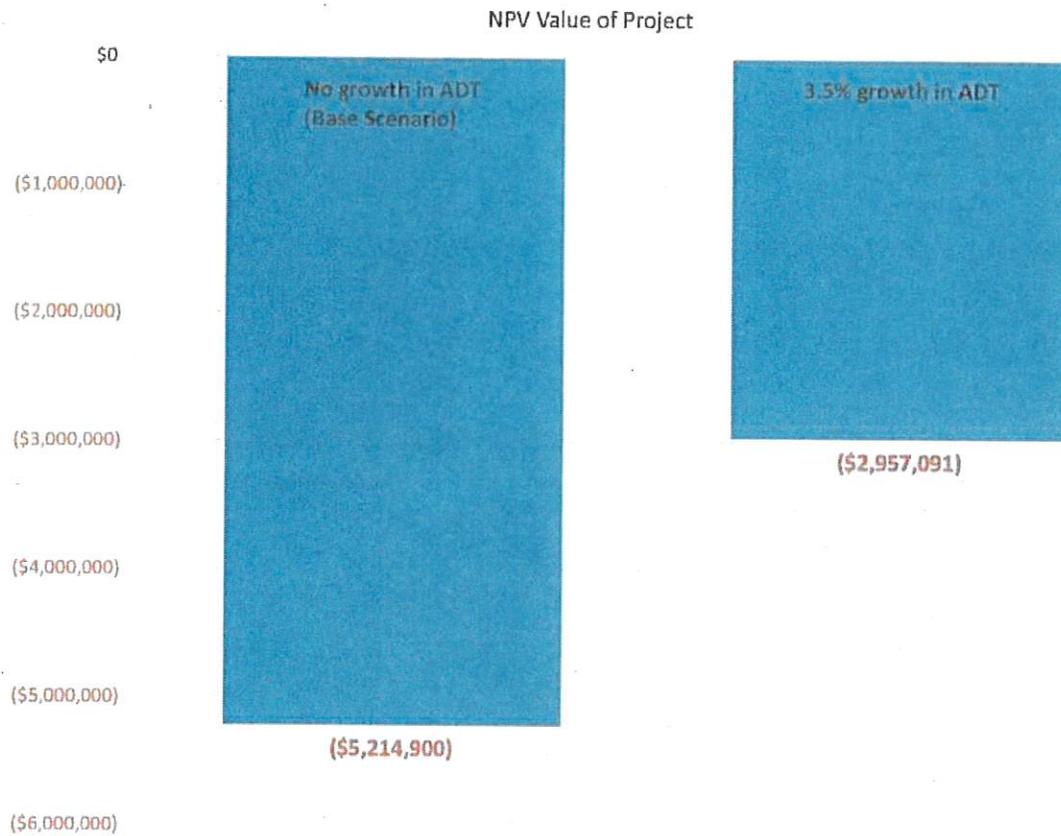


Figure 5. NPV of Fyffe Avenue Grade Separation Project based on 7 Percent Discount Rate

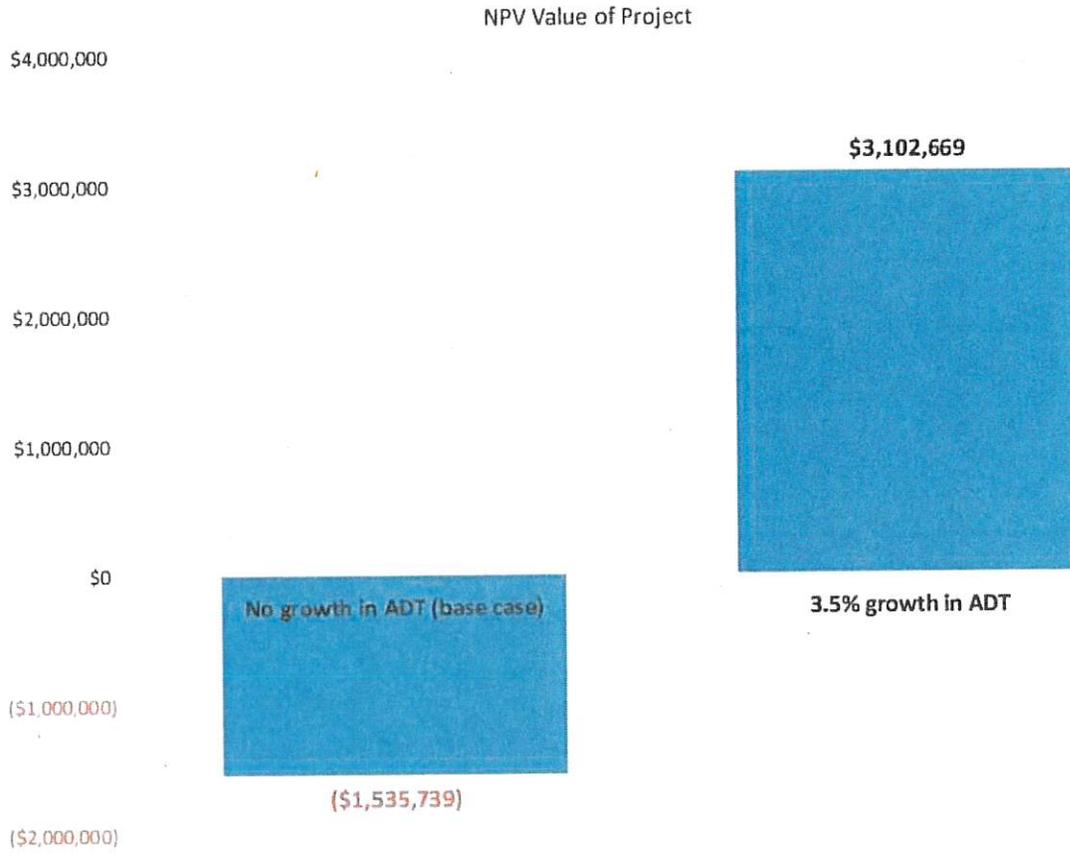


Figure 6. NPV of Fyffe Avenue Grade Separation Project based on 3 Percent Discount Rate

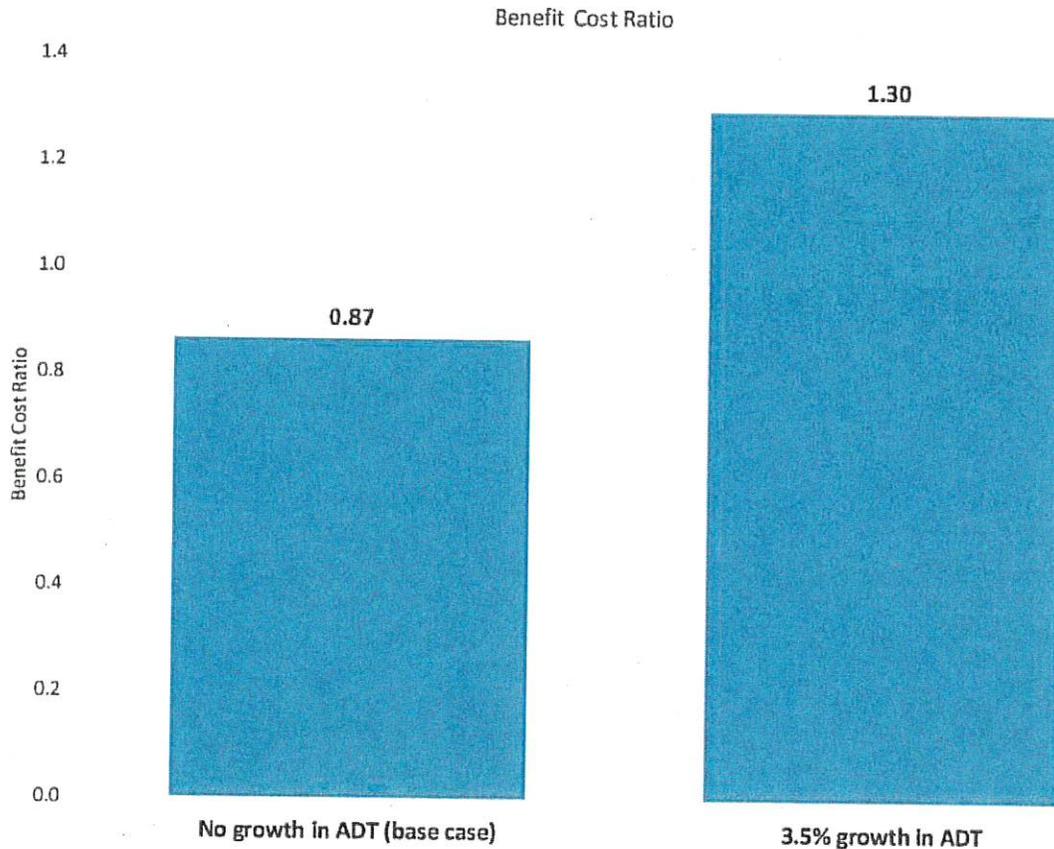


Figure 7. Benefit Cost Ratio of Fyffe Grade Separation Project based on 3 Percent Discount Rate

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