Nexus Study
Central County
Area of Benefit

Prepared By:

DKS

in association with Urban Economics

Prepared For:
Contra Costa County
Public Works Department

March 2021

Nexus Study
Central County Area of Benefit Program

(this page has been left blank intentionally)

Table of Contents

Appendices

Appendix B - Cost Estimates for Selected Projects in Central County AOB

List of Tables

List of Figures

1. Introduction

1.1 Background and Purpose

The purpose of the Central County Area of Benefit (AOB) Program is to help fund improvements to the County's roadway, bicycle and pedestrian facilities needed to accommodate travel demand generated by new land development within the unincorporated portion of this AOB.

Contra Costa County has various methods for financing transportation improvements. One of the methods is the AOB Program. The AOB Program collects funds from new development in the unincorporated portion of the AOB to finance a portion of the transportation improvements associated with travel demand generated by that development. Fees are differentiated by type of development in relationship to their relative impacts on the transportation system. The intent of the AOB program is to provide an equitable means of ensuring that future development contributes its proportional share of the cost of transportation improvements, so that the County's General Plan Circulation policies and quality of life can be maintained.

One of the objectives of the County General Plan is to relate new development directly to the provision of community facilities necessary to serve that new development. Accordingly, there is a mechanism in place to provide the funding for the infrastructure necessary to serve that development. The Central County AOB Program is a fee mechanism providing funds to construct transportation improvements to serve new residential, commercial and industrial development within the AOB. Requiring that all new development pay a transportation improvement fee ensures that it participates fairly in the cost of improving the transportation system. This Program applies only to new development within the unincorporated portions of Central County.

Each new development project or expansion of an existing development will generate new travel demand for all travel modes. Where the existing transportation system is inadequate to meet future needs based on new development, improvements are required to meet the new demand. The purpose of this development program is to determine improvements that will ultimately be needed to serve estimated future development and to require the developers to pay a fee to fund its proportional share of the cost of these improvements. Because the fee is based on the relative impact of new development on the transportation system and the costs of the necessary improvements to mitigate this impact, the fee amount is roughly proportional to the development impact. This Nexus Study establishes this impact and mitigation relationship to new development and the basis for the fee amount.

1.2 Central County AOB

The Central County AOB covered by this Nexus Study represents a consolidation of two AOBs: Central County and South Walnut Creek. An initial countywide Area of Benefit for the unincorporated portions of Contra Costa County was adopted by the Board of Supervisors on March 15, 1988. The original countywide Area of Benefit consisted of seven regions: West County, Central County, Lamorinda, Alamo, South County, East County and Bethel Island. The Central County region was divided into four subareas: Briones, Martinez, Central County and South Walnut Creek. Over the next ten years, Areas of Benefit were developed for each of the subregions. On December 6, 1994 the Board of Supervisors passed a resolution forming the South Walnut Creek Area of Benefit and on June 13, 1995 passed a resolution forming the Central County Area of Benefit. At the time the Central and South Walnut Creek AOBs were adopted, there were many vacant parcels in the area with potential for residential and commercial development, and the existing transportation system was inadequate to handle the additional traffic generated from the projected development.

Over the past 27 years, Area of Benefit fees have helped pay for improvements in the Central County and South Walnut areas. Today, most of the development potential in these two AOBs would be from in-fill development representing less than ten percent increase in residential units and less than twenty percent increase in commercial floor space. To maintain flexibility on how to respond to the transportation mitigation needs for new development, the County staff recommends combining the Central County and South Walnut Creek AOBs into a single AOB referred to as Central County.

The Central County area has, in recent years, experienced changes in the area's circulation needs and development potential. Most of the residential development potential has been fulfilled, and some of the original Area of Benefit projects have been constructed. These changes have prompted another revision to the Area of Benefit program, resulting in a new project list and fee schedule.

The purpose of this Nexus Study is to provide the technical basis for a comprehensive update of the Central County AOB Program. The focus of the updated program is to support a multi-modal transportation system in the Central County AOB that serves the expected future demand based on changes in regional and local land use projections, planned and approved development projects, and associated changes to capital improvements and updated cost estimates.

This report documents the analytical approach for determining the nexus between the fees, the local impact created by new development in the Central County AOB, and the transportation improvements to be funded with fee revenues to mitigate transportation impacts. A traffic and fair-share cost analysis was conducted to equitably distribute the costs of the necessary improvements to developments that cause the impacts, in accordance with the provisions of the Mitigation Fee Act.[1] The most up-to-date versions of the analytical tools and techniques available at the time this study commenced were used to ensure the highest level of consistency with current standards.

The Central County AOB boundary is shown in **Figure 1.** The area within the boundary includes a portion of the cities of Pleasant Hill, Walnut Creek, Concord, Clayton Lafayette, Moraga, and Orinda. However, fees will only be collected within the unincorporated portions of the AOB and will only fund projects within the unincorporated portions of the AOB.

2. Evaluation of Current AOB Program

The current South Walnut Creek AOB and Central County AOB Programs were last updated in 1994 and 1995, respectively. The current project list for these two AOBs, shown in **Table 1**, has eight projects, which were estimated in 1995 to cost about $9.5 million, of which $7.7 million was to be funded by the AOB Program. Most of these have been completed or have had funds dedicated to completing them. The others are no longer being considered for implementation. The safety improvements on Rudgear Road, San Miguel Drive, Walnut Boulevard, and Mountain View Boulevard will be funded from the existing account balance. A more detailed listing of these projects and the estimated cost of each is provided in **Table 2**. The locations of the projects are shown in **Figure 2**. More detail on the nature and expected cost of these projects is provided in **Appendix A**. The 2017 update of the Central County AOB Program has included a new needs analysis as the basis of an updated project list of new projects and cost estimates, which are described in **Sections 3, 4 and 5** of this Nexus Study.

[1] California Government Code, Sections 66000 through 66026.

Table 1: 1994/1995 Project List for Central County and South Walnut Creek AOB Programs

Project/Roadway	Location	Recommended Project	Estimated Project Cost (1995 Dollars)	Project Cost to be Funded by AOB (1995 Dollars)
Taylor Blvd	Pleasant Hill Rd to Boyd Rd	Safety and capacity improvements	$670,000	$670,000
Pleasant Hill Rd/Taylor Blvd	Intersection	Safety and capacity improvements	$2,000,000	$2,000,000
Bailey Rd	Bridge	Remove and replace existing bridge. New bridge adequate for standard two-lane arterial	$200,000	$200,000
Rudgear Rd, San Miguel Dr, Walnut Blvd, Mountain View Blvd		Safety improvements	$350,000	$350,000
San Pablo Dam Rd/Bear Creek Rd	Intersection	Construct Signal	$60,000	$60,000
Paso Nogal/Golf Club Rd	Intersection	Improve intersection	$70,000	$70,000
Evora Rd Extension	Willow Pass Rd to Port Chicago Hwy	Construct new road	$3,350,000	$3,350,000
Olympic Blvd	Tice Valley Blvd to I-680	Widen Roadway	$2,800,000	$1,000,000
		Total	**$9,500,000**	**$7,700,000**

Source: Contra Costa County, 1994 and 1995

Table 2: Specific Projects to be Completed from the 1994/1995 AOB Project List

Roadway	Project	Location	Recommended Project	Estimated Project Cost
Rudgear Rd	SM1	Intersection at San Miguel Dr	Intersection safety improvements	$3,588,000
Walnut Blvd	SM2	View lane to 250' northwest of Walnut Ct	Pedestrian improvements	$4,001,000
Mountain View Blvd	SM3	Blackwood Dr to Walnut Blvd	Pedestrian improvements	$3,470,000
San Miguel Dr	SM4	Rudgear Rd to Blackwood Dr	Pedestrian and bicycle improvements	$9,079,000
			Total	**$20,138,000**

Source: DKS Associates, 2021

Figure 1: Central County AOB Boundary

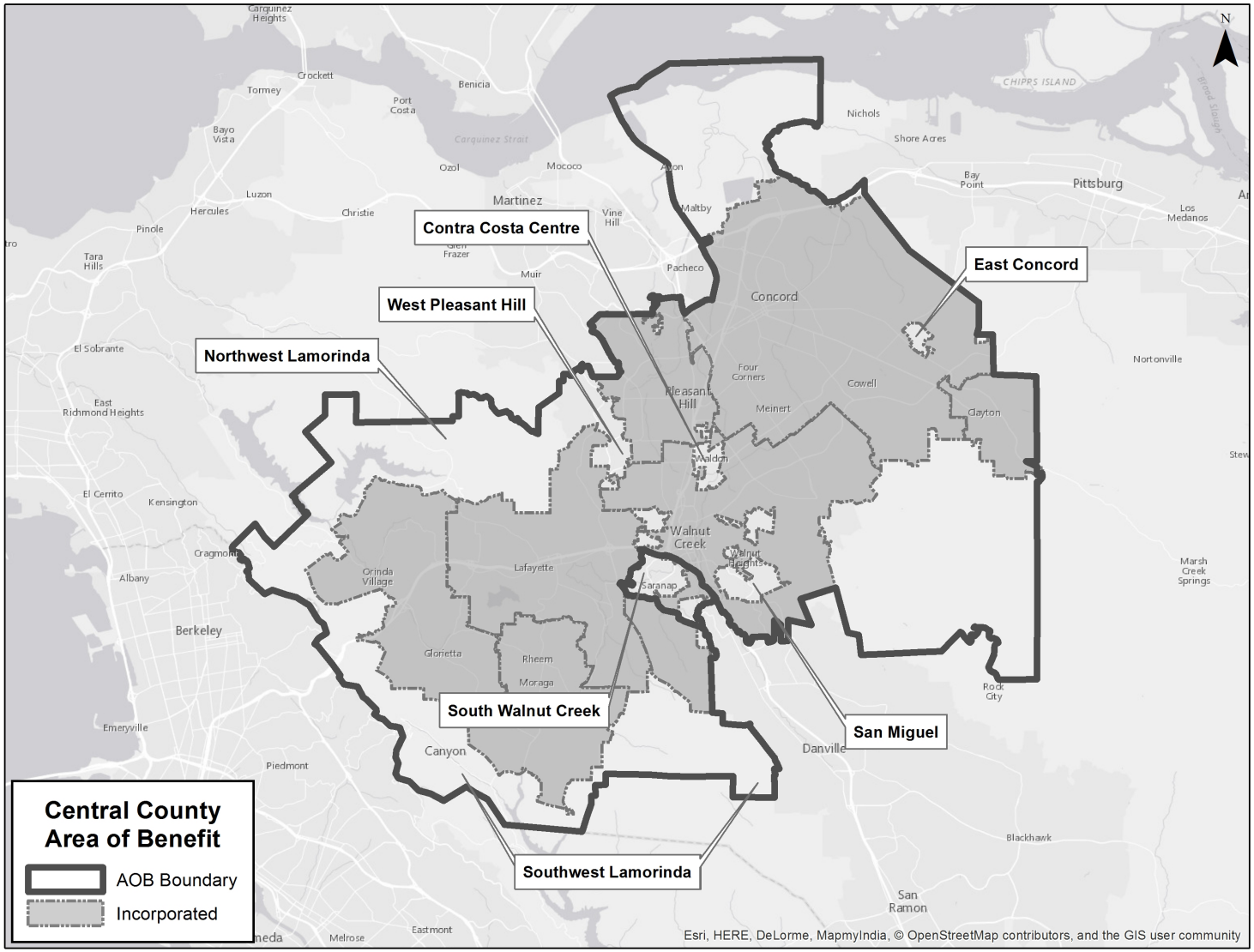
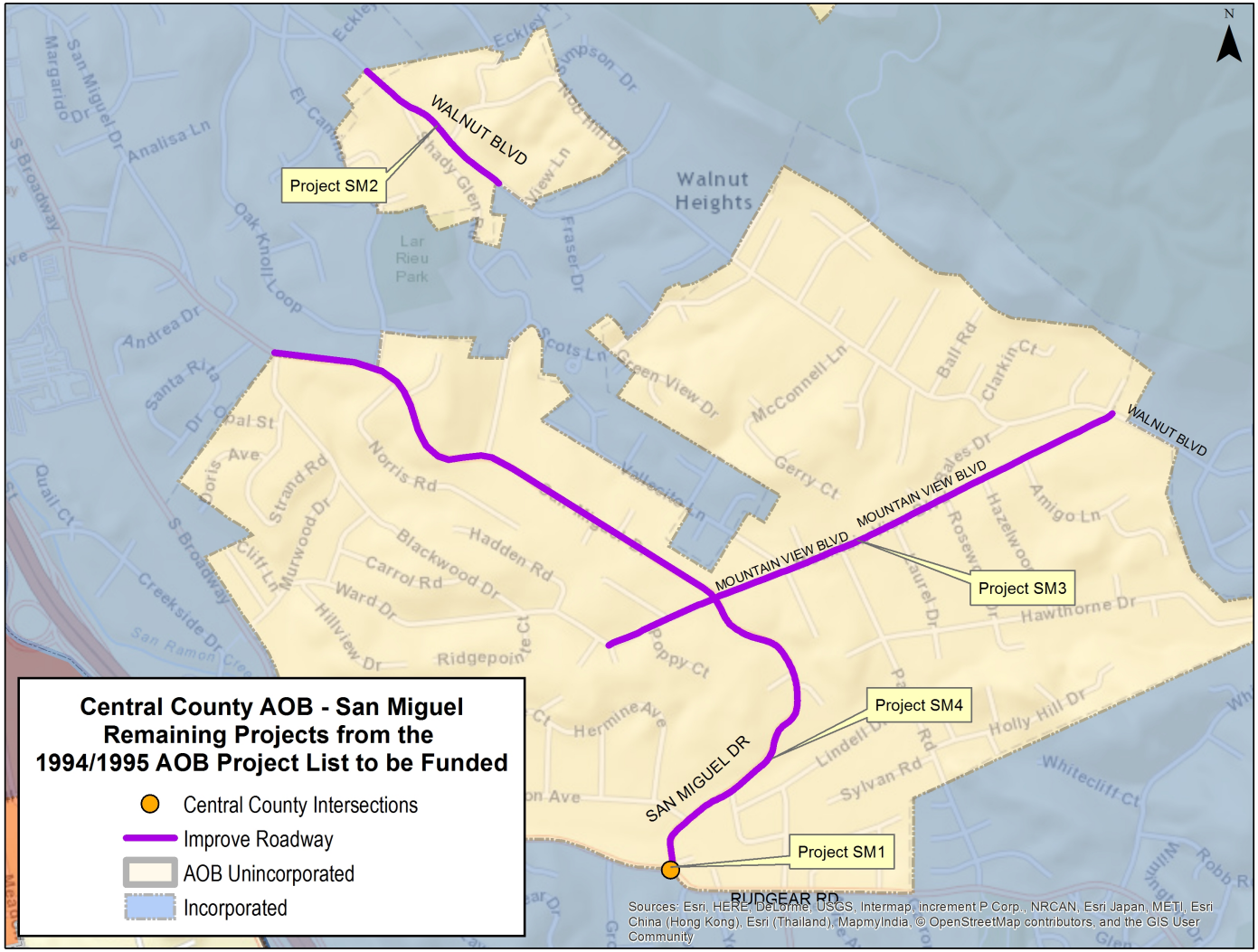


Figure 2: Remaining Projects from the 1994/1995 AOB Project List to be Funded



The current AOB Program uses "peak hour factors" to allocate trips by land use types based on Institute of Transportation Engineers (ITE) trip generation rate estimates for the evening (PM) peak hour based on the amount of traffic coming in and out of development's entrances. This Nexus Study refines this approach to reflect current best practices for impact fee programs when estimating the impact of new development on the transportation system.

The use of simple trip generation rates tends to over-estimate the traffic impact of retail development on the overall roadway system. The average length of trips coming in and out of a new residential development is longer than trips coming in and out of a retail development. Furthermore, studies show that about 25 to 50 percent of the trips that will go in and out of a new retail development will already be traveling on roadways near that development, and thus are "pass-by" or "diverted" trips, not "new trips" to the surrounding roadway system. All of the trips going to and from a new residential unit are "new trips".

To integrate best practices for the current fees, the updated Central County AOB Program will instead use estimates of vehicle-miles of travel (VMT) added by new development. The VMT rates multiply the trip rate for a land use type by its average trip length and also use percentages to reflect "pass-by trips" versus "new trips." The calculation of fee rates based on this methodology is discussed in **Section 4** of this study.

3. Determination of AOB Development Potential

The transportation needs analysis and allocation of improvement costs for the Central County AOB is based on the countywide travel demand model developed by the Contra Costa Transportation Agency (CCTA) using a 2040 horizon year. The calculation of fees is based on the following general land use categories and associated measurement units that are used as a basis for the land use inputs in CCTA's travel demand model:

Land Use Type	Units
Single-Family	Dwelling units (DU)
Multi-Family	Dwelling units (DU)
Commercial/Retail	Jobs
Office	Jobs
Industrial	Jobs

CCTA's latest land use estimates of existing conditions and 2040 forecasts of new development by Traffic Analysis Zones (TAZs) in the AOB were summarized and reviewed with County Planning staff. Based on that review, adjustments were made and the resulting growth estimate for the AOB is summarized in **Table 3**. The table converts the estimates of jobs for nonresidential land uses used by the CCTA's model to estimates of building square feet used in the AOB fee program.

Table 3: Estimated Development Potential for Central County/South Walnut Creek

Land Use Category	Units	Due per Unit	Units			DUEs		
			2010	2040	Growth	2010	2040	Growth
Single-Family	DU	1.00	7,429	7,733	304	7,429	7,733	304
Multi-family	DU	0.61	3,639	4,180	541	2,234	2,566	332
Total	**DU**		**11,068**	**11,913**	**845**	**9,663**	**10,299**	**636**
Retail	Jobs		578	746	168			
Office	Jobs		3,103	3,773	670			
Industrial	Jobs		2,139	2,383	244			
Total	**Jobs**		**5,820**	**6,902**	**1,082**			
Retail	1,000 sq. ft.	0.00142	289	373	84	410	529	119
Office	1,000 sq. ft.	0.00115	853	1038	184	979	1,191	211
Industrial	1,000 sq. ft.	0.00091	1283	1430	146	1,168	1,302	133
Total	**1,000 sq. ft.**		**2,426**	**2,840**	**415**	**2,558**	**3,022**	**463**
					Total:	**12,221**	**13,321**	**1,099**
					Proportion of DUE Growth to the Total DUEs in 2040:	**1,099/13,321 = 0.0825**		

Source: DKS Associates, 2016

Notes:

Land Use	Assumed Square Feet per Job
Retail	500
Office	275
Industrial	600

4. Transportation Needs Analysis

Defining the transportation needs and project list for the Central County AOB involved the following steps:

1. Collecting traffic count data (intersections and roadway segments)
2. Identifying existing deficiencies, including level of service (LOS) and roadway standard deficiencies
3. Preparing travel demand forecasts of 2040 conditions
4. Conducting transportation system analysis to identify improvement needs
5. Identifying pedestrian and bicycle facilities/improvements
6. Preparing a draft AOB project list
7. Presenting analysis and findings at a neighborhood outreach meeting to obtain input on the draft project list
8. Finalizing project list

The key technical tasks used to determine the transportation improvements needed to accommodate new development within the AOB and select a project list are described in **Sections 4.1 through 4.6**.

4.1 Traffic Count Data

Traffic count data is required to determine existing deficiencies and to support the future year roadway/intersection needs analysis. Traffic counts were collected on weekdays in May 2013 on major roadway segments and intersections within the AOB (see **Tables 3 and 4**).

4.2 Existing Deficiencies

The technical methods and standards used to identify the impact of new development on roadway and intersection vehicular congestion are described in **Section 4.4** below. The same methods and standards are used to identify existing deficiencies in the roadway network. When an existing deficiency is identified, it affects how the cost of an improvement is allocated to new development. New development can only fund its fair share of the total cost of an improvement not associated with correcting an existing deficiency (see **Section 6**).

4.3 Travel Demand Forecasting

The transportation needs analysis and allocation of improvement costs were based on CCTA's travel demand model using a 2040 horizon year and the development assumptions summarized in **Table 3**. Before its use, the output of the CCTA travel demand model for existing conditions was compared to existing traffic count data in the AOB area and some adjustments were made to the model within and near the AOB to improve its accuracy and detail.

4.4 Roadway/Intersection Analysis

This section describes the analysis used to determine the roadway improvements needed to accommodate new development within the AOB.

Signal Warrants

Traffic signal warrants are a series of standards that provide guidelines for determining if a traffic signal is appropriate. A planning-level signal warrant analysis based on traffic volumes was conducted to determine if the traffic signals would be warranted at study intersections under existing and future (2040) conditions. If one or more of the signal warrants are met, signalization of the intersection may be recommended.

Level of Service

The needs analysis for the Central County AOB Program used the level of service (LOS) standards in the County's General Plan, which has different standards for different areas, based on land use types. In the Central County Area, LOS D or better conditions are considered acceptable while LOS E or F conditions are considered unacceptable, except in central business districts such as the Contra Costa Centre area, where a LOS of E may be acceptable. LOS is calculated separately for intersections and roadway segments. Intersection LOS analysis is based on average vehicle delay and analysis methods recommended by the Highway Capacity Manual (Transportation Research Board, 2010). Roadway segment LOS analysis compares traffic levels with roadway segment capacities determined by the number of travel lanes and the roadway type. The intersection and roadway segment LOS analysis is summarized in **Tables 4 and 5** as well as **Figures 3 through 17.**

Table 4: Intersection Level of Service Analysis

	Intersection	Area	Area Type	Control	LOS Standard	Delay Standard (seconds)	Existing				Cumulative			
							AM		PM		AM		PM	
							Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Reliez Valley Rd & Grayson Rd (NB)[1]	West Pleasant Hill	Suburban	AWSC	Low D	≤ 30	9.4	A	9.1	A	15.6	C	14.3	B
2	Reliez Valley Rd & Withers Ave (SB)[1]	West Pleasant Hill	Suburban	AWSC	Low D	≤ 30	8.1	A	7.7	A	10.7	B	13.4	B
3	Taylor Blvd & Withers Ave	West Pleasant Hill	Suburban	Signal	Low D	≤ 45	16.5	B	16.6	B	24.2	C	43.9	D
4	Withers Ave & Pleasant Hill Road (SB)[1]	West Pleasant Hill	Suburban	AWSC	Low D	≤ 30	12.6	B	12.6	B	16.7	C	16.8	C
5	Bear Creek Rd & Happy Valley Rd (WB)[1]	Northwest Lamorinda	Semi-Rural	TWSC	High C	≤ 25	8.8	A	8.7	A	**32.1**	**D**	10.3	B
6	Camino Pablo & Bear Creek Rd	Northwest Lamorinda	Semi-Rural	Signal	High C	≤ 35	10.7	B	13.1	B	**79.9**	**E**	16.1	B
7	Concord Blvd & Ayers Rd	East Concord	Suburban	Signal	Low D	≤ 45	30.6	C	22.4	C	**93.4**	**F**	27.4	C
8	Ayers Rd & Laurel Dr (SB)[1]	East Concord	Suburban	AWSC	Low D	≤ 30	8.9	A	7.6	A	**43.1**	**E**	17.8	C
9	Ayers Rd & Myrtle Dr (EB)[1]	East Concord	Suburban	AWSC	Low D	≤ 30	8.8	A	7.4	A	**44.9**	**E**	**39.8**	**E**
10	Myrtle Dr & Bailey Rd (SB)[1]	East Concord	Suburban	TWSC	Low D	≤ 30	29.4	D	12.2	B	**62**	**F**	**>300**	**F**
11	Treat Blvd & Buskirk Ave	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	**121.4**	**F**	**153.4**	**F**	**212.1**	**F**	**158**	**F**
12	Treat Blvd & Oak Rd	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	42.4	D	35.7	D	48.8	D	46	D
13	Treat Blvd & Jones Rd	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	27.5	C	67	E	38.6	D	**91.1**	**F**
14	Oak Rd & Wayne Ct	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	14.3	B	23.8	C	15.4	B	37.9	D
15	Oak Rd & Las Juntas Wy	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	13.9	B	17.5	B	14.6	B	19.7	B
16	Boulevard Wy & Flora Ave (NB)[1]	South Walnut Creek	Suburban	TWSC	Low D	≤ 30	10.5	B	10.3	B	10.5	B	13.5	B
17	Buskirk Ave & Oak Road	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	25.6	C	39.1	D	35.6	D	57.8	E

	Intersection	Area	Area Type	Control	LOS Standard	Delay Standard (seconds)	Existing				Cumulative			
							AM		PM		AM		PM	
							Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
18	Oak Rd & Jones Rd	Contra Costa Centre	CBD	Signal	Low E	≤ 67.5	14.7	B	21.6	C	17.8	B	38.8	D
19	Olympic Blvd & Paulson Ln/SB Off-ramp	South Walnut Creek	Suburban	Signal	Low D	≤ 45	29.4	C	24.5	C	**81.3**	**F**	**72.3**	**E**
20	Mayhew Way & Bancroft Rd (EB)[1]	Contra Costa Centre	Suburban	TWSC	Low D	≤ 30	31	D	**54.8**	**F**	**>300**	**F**	**173.2**	**F**
21	Las Juntas Way & Coggins Dr (WB)[1]	Contra Costa Centre	CBD	AWSC	Low E	≤ 42.5	17.6	C	15.8	C	**53.9**	**F**	38.8	E
22	Treat Blvd & Cherry Ln	Contra Costa Centre	Urban	Signal	High D	≤ 55	18.6	B	11.9	B	47.2	D	18.8	B
23	Oak Rd/N Civic Dr & Walden Rd (WB)[1]	Contra Costa Centre	Suburban	Signal	Low D	≤ 45	8	A	5.1	A	15.9	B	7.5	A
24	Boulevard Wy & Garden Ct/Kinney Dr	South Walnut Creek	Suburban	TWSC	Low D	≤ 30	Synchro Does Not Support Analysis				Synchro Does Not Support Analysis			
25	Olympic Blvd & Boulevard Wy/Tice Valley Blvd	South Walnut Creek	Suburban	Signal	Low D	≤ 45	33.6	C	**60.5**	**E**	**64.6**	**E**	**99.1**	**F**
26	Olympic Blvd & Newell Ave	South Walnut Creek	Suburban	Signal	Low D	≤ 45	0.8	A	0.8	A	0.8	A	0.8	A
27	Boulevard Wy & Warren Rd (WB)[1]	South Walnut Creek	Suburban	TWSC	Low D	≤ 30	10.1	B	11	B	0.4	A	11.2	B
28	Boulevard Wy & Saranap Ave (SB)[1]	South Walnut Creek	Suburban	TWSC	Low D	≤ 30	1.1	A	13.6	B	11.8	B	20.2	C
29	San Miguel Dr & Rudgear Rd (SB)[1]	San Miguel	Suburban	TWSC	Low D	≤ 30	15.3	C	12.7	B	**38.6**	**E**	**37.1**	**E**
30	Mountain View Blvd & Palmer Rd (NB)[1]	San Miguel	Suburban	TWSC	Low D	≤ 30	11.2	B	11.2	B	13.2	B	9.1	A
31	Mountain View Blvd & Bales Dr (NB)[1]	San Miguel	Suburban	TWSC	Low D	≤ 30	5.7	A	11	B	20.3	C	10.3	B
32	Mountain View Blvd & Walnut Blvd (WB)[1]	San Miguel	Suburban	AWSC	Low D	≤ 30	7.3	A	7.1	A	6.7	A	7.1	A

[1] Minor stop-controlled LOS based on worst approach
LOS highlighted in gray does not meet County's standard
Source: DKS Associates, 2016

Table 5: Roadway Segment Level of Service Analysis

Roadway	Location	Area	Area Type[1]	LOS Standard[1]	V/C Ratio Standard[1]	2013				2040			
						AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
						V/C	LOS Range	V/C	LOS Range	V/C	LOS Range	V/C	LOS Range
Reliez Valley Rd	North of Grayson Rd	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.21	A-C	0.20	A-C	0.53	A-C	0.49	A-C
	Between Grayson Rd & Withers Ave	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.11	A-C	0.08	A-C	0.30	A-C	0.35	A-C
Withers Ave	Between Reliez Valley Rd & Taylor Blvd	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.13	A-C	0.25	A-C	0.24	A-C	0.40	A-C
	Between Taylor Blvd & Pleasant Hill Rd	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.18	A-C	0.15	A-C	0.29	A-C	0.36	A-C
Taylor Blvd	North of Withers Ave	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.54	A-C	0.46	A-C	0.71	A-C	0.59	A-C
	South of Withers Ave	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.52	A-C	0.49	A-C	0.69	A-C	0.59	A-C
Pleasant Hill Rd	Between Taylor Blvd & Geary Rd	West Pleasant Hill	Suburban	Low D	≤ 0.85	0.18	A-C	0.23	A-C	0.22	A-C	0.29	A-C
Bear Creek Rd	North of Happy Valley Rd	Northwest Lamorinda	Rural	Low C	≤ 0.75	0.07	A-C	0.06	A-C	0.24	A-C	0.24	A-C
	South of Happy Valley Rd	Northwest Lamorinda	Rural	Low C	≤ 0.75	0.09	A-C	0.07	A-C	0.34	A-C	0.14	A-C
	East of Camino Pablo	Northwest Lamorinda	Rural	Low C	≤ 0.75	0.08	A-C	0.08	A-C	0.32	A-C	0.13	A-C
San Pablo Dam Rd	West of Camino Pablo	Northwest Lamorinda	Rural	Low C	≤ 0.75	0.76	A-C	0.79	A-C	**1.05**	**F**	**0.99**	**F**
Fish Ranch Rd	West of CA-24	Northwest Lamorinda	Rural	Low C	≤ 0.75	0.58	A-C	**0.88**	**D-E**	0.61	A-C	0.74	A-C[2]
Pinehurst Rd	West of Canyon Rd	Southwest Lamorinda	Rural	Low C	≤ 0.75	0.07	A-C	0.08	A-C	0.15	A-C	0.08	A-C
Concord Blvd	West of Ayers Rd	East Concord	CBD	Low E	≤ 0.95	0.39	A-C	0.38	A-C	0.51	A-C	0.36	A-C
	East of Ayers Rd	East Concord	CBD	Low E	≤ 0.95	0.66	A-C	0.60	A-C	0.86	D-E	0.65	A-C
Ayers Rd	North of Concord Blvd	East Concord	Suburban	Low D	≤ 0.85	0.32	A-C	0.22	A-C	0.77	A-C	0.61	A-C

Roadway	Location	Area	Area Type[1]	LOS Standard[1]	V/C Ratio Standard[1]	2013				2040			
						AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
						V/C	LOS Range	V/C	LOS Range	V/C	LOS Range	V/C	LOS Range
	South of Concord Blvd	East Concord	Suburban	Low D	≤ 0.85	0.45	A-C	0.36	A-C	0.70	A-C	0.50	A-C
	Between Laurel Dr & Myrtle Dr	East Concord	Suburban	Low D	≤ 0.85	0.25	A-C	0.15	A-C	0.69	A-C	0.54	A-C
Myrtle Rd	Between Ayers Rd & Bailey Rd	East Concord	Suburban	Low D	≤ 0.85	0.16	A-C	0.10	A-C	0.55	A-C	0.42	A-C
Bailey Rd	North of Myrtle Dr	East Concord	Suburban	Low D	≤ 0.85	0.59	A-C	0.32	A-C	**1.86**	**F**	**1.36**	**F**
	South of Myrtle Dr	East Concord	Suburban	Low D	≤ 0.85	0.58	A-C	0.34	A-C	**1.23**	**F**	0.82	D-E
Geary Rd	West of Buskirk Ave	Contra Costa Centre	Urban	High D	≤ 0.90	0.72	A-C	0.73	A-C	0.87	D-E	0.88	D-E
Treat Blvd	Between Buskirk Ave & Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.77	A-C	0.81	D-E	0.93	D-E	0.91	D-E
	Between Oak Rd & Jones Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.64	A-C	0.62	A-C	0.74	A-C	0.76	A-C
	Between Cherry Ln & Jones Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.77	A-C	0.77	A-C	0.84	D-E	0.90	D-E
	East of Cherry Ln	Contra Costa Centre	CBD	Low E	≤ 0.95	0.79	A-C	0.76	A-C	0.86	D-E	0.91	D-E
Oak Rd	Between Treat Blvd & Wayne Ct	Contra Costa Centre	CBD	Low E	≤ 0.95	0.39	A-C	0.46	A-C	0.42	A-C	0.55	A-C
	Between Treat Blvd & Jones Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.49	A-C	0.42	A-C	0.54	A-C	0.54	A-C
	Between Wayne Ct & Las Juntas Way	Contra Costa Centre	CBD	Low E	≤ 0.95	0.42	A-C	0.42	A-C	0.43	A-C	0.48	A-C
	Between Las Juntas Way & Buskirk Ave	Contra Costa Centre	CBD	Low E	≤ 0.95	0.41	A-C	0.44	A-C	0.50	A-C	0.51	A-C
	Between Oak Park Blvd & Buskirk Ave	Contra Costa Centre	CBD	Low E	≤ 0.95	0.54	A-C	0.49	A-C	0.59	A-C	0.52	A-C
	South of Jones Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.39	A-C	0.44	A-C	0.44	A-C	0.58	A-C
Las Juntas Way	East of Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.35	A-C	0.31	A-C	0.40	A-C	0.43	A-C

Roadway	Location	Area	Area Type[1]	LOS Standard[1]	V/C Ratio Standard[1]	2013				2040			
						AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
						V/C	LOS Range	V/C	LOS Range	V/C	LOS Range	V/C	LOS Range
Buskirk Ave	West of Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.41	A-C	0.57	A-C	0.47	A-C	0.57	A-C
	North of Treat Blvd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.93	D-E	**1.33**	**F**	0.95	D-E	**1.33**	**F**
I-680 NB On-Ramp	West of Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.41	A-C	0.50	A-C	0.44	A-C	0.57	A-C
Jones Rd	West of Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.30	A-C	0.20	A-C	0.38	A-C	0.34	A-C
	East of Oak Rd	Contra Costa Centre	CBD	Low E	≤ 0.95	0.24	A-C	0.37	A-C	0.32	A-C	0.54	A-C
Bancroft Rd	North of Mayhew Way	Contra Costa Centre	Urban	High D	≤ 0.90	0.84	D-E	0.76	A-C	**0.96**	**D-E**	**0.94**	**D-E**
	South of Mayhew Way	Contra Costa Centre	Urban	High D	≤ 0.90	0.28	A-C	0.25	A-C	0.50	A-C	0.46	A-C
Mayhew Way	West of Bancroft Rd	Contra Costa Centre	Urban	High D	≤ 0.90	0.60	A-C	0.47	A-C	0.74	A-C	0.52	A-C
Coggins Dr	North of Las Juntas Way	Contra Costa Centre	Urban	High D	≤ 0.90	0.42	A-C	0.40	A-C	0.52	A-C	0.55	A-C
	South of Las Juntas Way	Contra Costa Centre	Urban	High D	≤ 0.90	0.65	A-C	0.57	A-C	0.83	D-E	0.77	A-C
N Civic Dr	South of Walden Rd	Contra Costa Centre	Urban	High D	≤ 0.90	0.39	A-C	0.41	A-C	0.41	A-C	0.49	A-C
Olympic Blvd	West of Tice Valley Blvd	South Walnut Creek	Suburban	Low D	≤ 0.85	0.30	A-C	0.33	A-C	0.50	A-C	0.49	A-C
	East of Tice Valley Blvd	South Walnut Creek	Suburban	Low D	≤ 0.85	0.46	A-C	0.52	A-C	0.70	A-C	0.69	A-C
	East of Newell Ave	South Walnut Creek	Suburban	Low D	≤ 0.85	0.47	A-C	0.52	A-C	0.71	A-C	0.68	A-C
Tice Valley Blvd	South of Olympic Blvd	South Walnut Creek	Suburban	Low D	≤ 0.85	0.58	A-C	0.63	A-C	0.63	A-C	0.71	A-C
Boulevard Wy	Between Olympic Blvd and Warren Rd	South Walnut Creek	Suburban	Low D	≤ 0.85	0.25	A-C	0.31	A-C	0.31	A-C	0.31	A-C

Roadway	Location	Area	Area Type[1]	LOS Standard[1]	V/C Ratio Standard[1]	2013				2040			
						AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
						V/C	LOS Range	V/C	LOS Range	V/C	LOS Range	V/C	LOS Range
	Between Garden Ct & Saranap Ave	South Walnut Creek	Suburban	Low D	≤ 0.85	0.13	A-C	0.17	A-C	0.14	A-C	0.19	A-C
	Between Saranap Ave & Flora Ave	South Walnut Creek	Suburban	Low D	≤ 0.85	0.17	A-C	0.24	A-C	0.18	A-C	0.31	A-C
	East of Flora Ave	South Walnut Creek	Suburban	Low D	≤ 0.85	0.19	A-C	0.24	A-C	0.19	A-C	0.27	A-C
	Between Warren Rd & Kinney Dr	South Walnut Creek	Suburban	Low D	≤ 0.85	0.20	A-C	0.25	A-C	0.25	A-C	0.27	A-C
Newell Ave	South of Olympic Blvd	South Walnut Creek	Suburban	Low D	≤ 0.85	0.34	A-C	0.35	A-C	0.49	A-C	0.41	A-C
Springbrook Rd	Between Regency Ct & Sherwood Wy	South Walnut Creek	Suburban	Low D	≤ 0.85	0.08	A-C	0.08	A-C	0.17	A-C	0.15	A-C
Mountain View Blvd	West of Palmer Rd	San Miguel	Suburban	Low D	≤ 0.85	0.26	A-C	0.25	A-C	0.27	A-C	0.26	A-C
	Between Palmer Rd & Bales Dr	San Miguel	Suburban	Low D	≤ 0.85	0.29	A-C	0.23	A-C	0.46	A-C	0.14	A-C
	Between Bales Dr & Walnut Blvd	San Miguel	Suburban	Low D	≤ 0.85	0.08	A-C	0.09	A-C	0.08	A-C	0.09	A-C
Walnut Blvd	South of Mountain View Blvd	San Miguel	Suburban	Low D	≤ 0.85	0.09	A-C	0.09	A-C	0.09	A-C	0.09	A-C
	North of Mountain View Blvd	San Miguel	Suburban	Low D	≤ 0.85	0.07	A-C	0.06	A-C	0.07	A-C	0.06	A-C
Rudgear Rd	West of San Miguel Dr	San Miguel	Suburban	Low D	≤ 0.85	0.50	A-C	0.47	A-C	0.58	A-C	0.58	A-C
	East of San Miguel Dr	San Miguel	Suburban	Low D	≤ 0.85	0.35	A-C	0.32	A-C	0.55	A-C	0.51	A-C
San Miguel Dr	North of Rudgear Rd	San Miguel	Suburban	Low D	≤ 0.85	0.19	A-C	0.18	A-C	0.29	A-C	0.26	A-C

[1]Contra Costa County General Plan, 2005
[2]Improvement in LOS in 2040 forecasted due to tunnel improvements
LOS highlighted in gray does not meet County's standard
Source: DKS Associates, 2016

Figure 3: Existing Levels of Service in Central County AOB – West Pleasant Hill

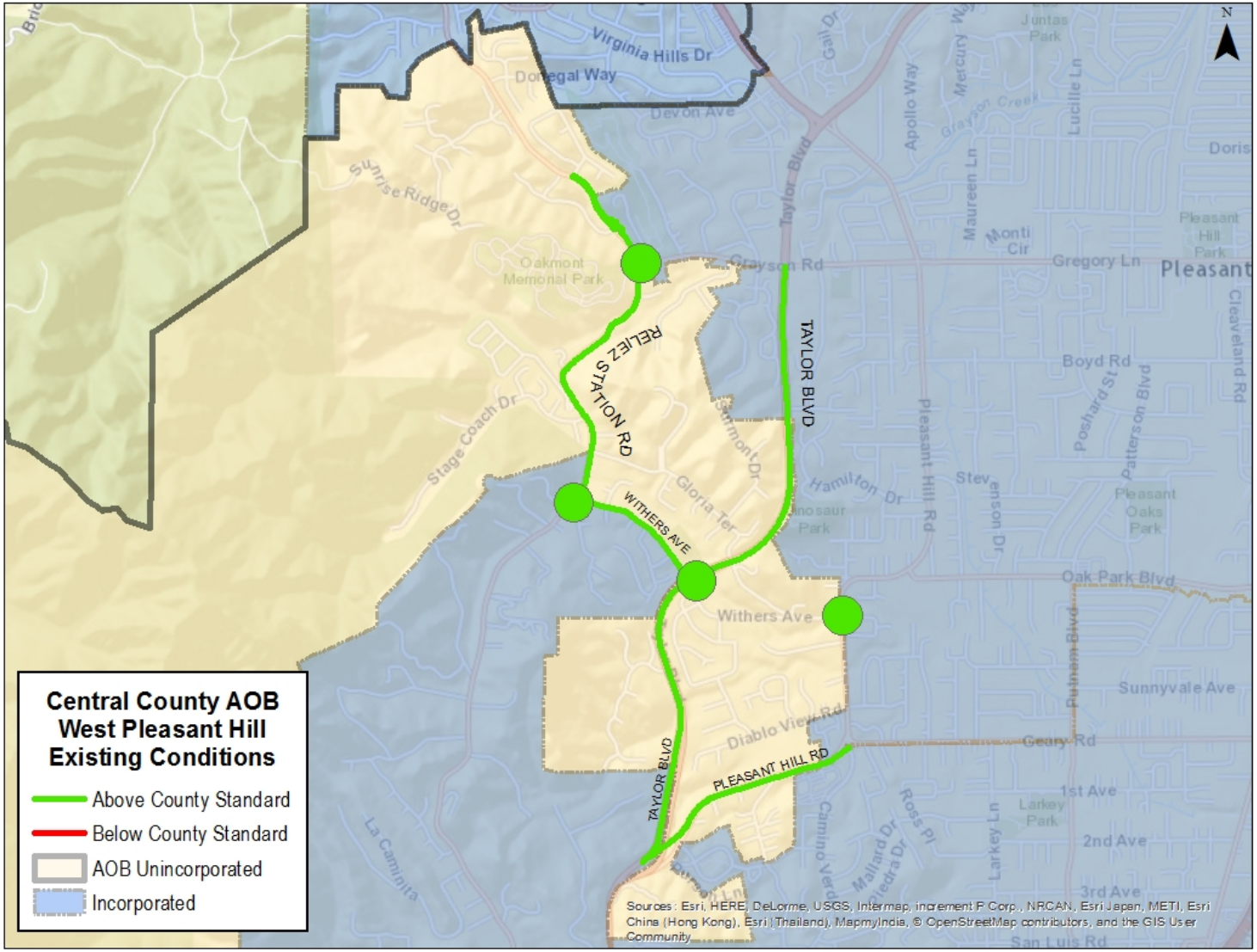


Figure 4: 2040 Levels of Service in Central County AOB – West Pleasant Hill

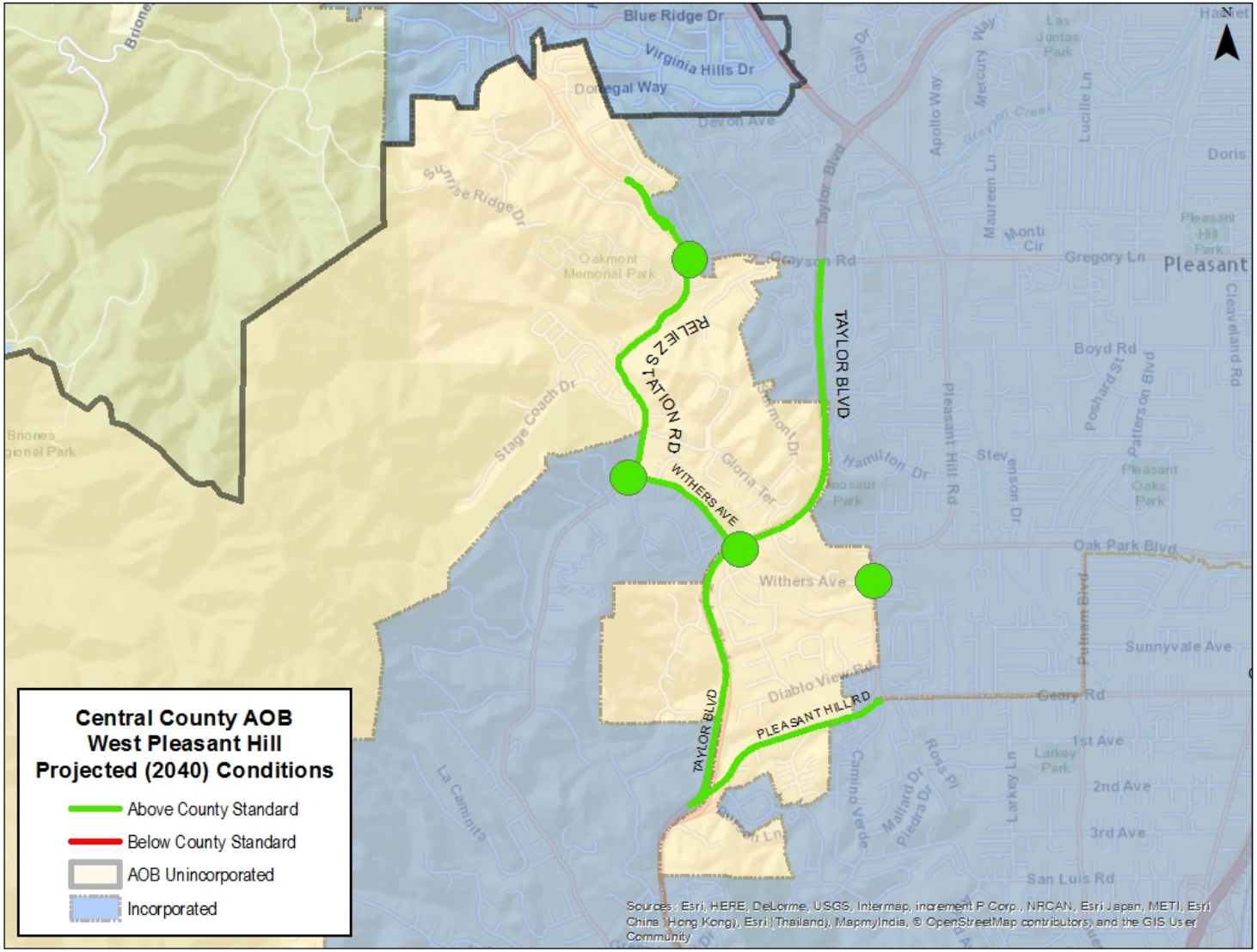


Figure 5: Existing Levels of Service in Central County AOB – Northwest Lamorinda

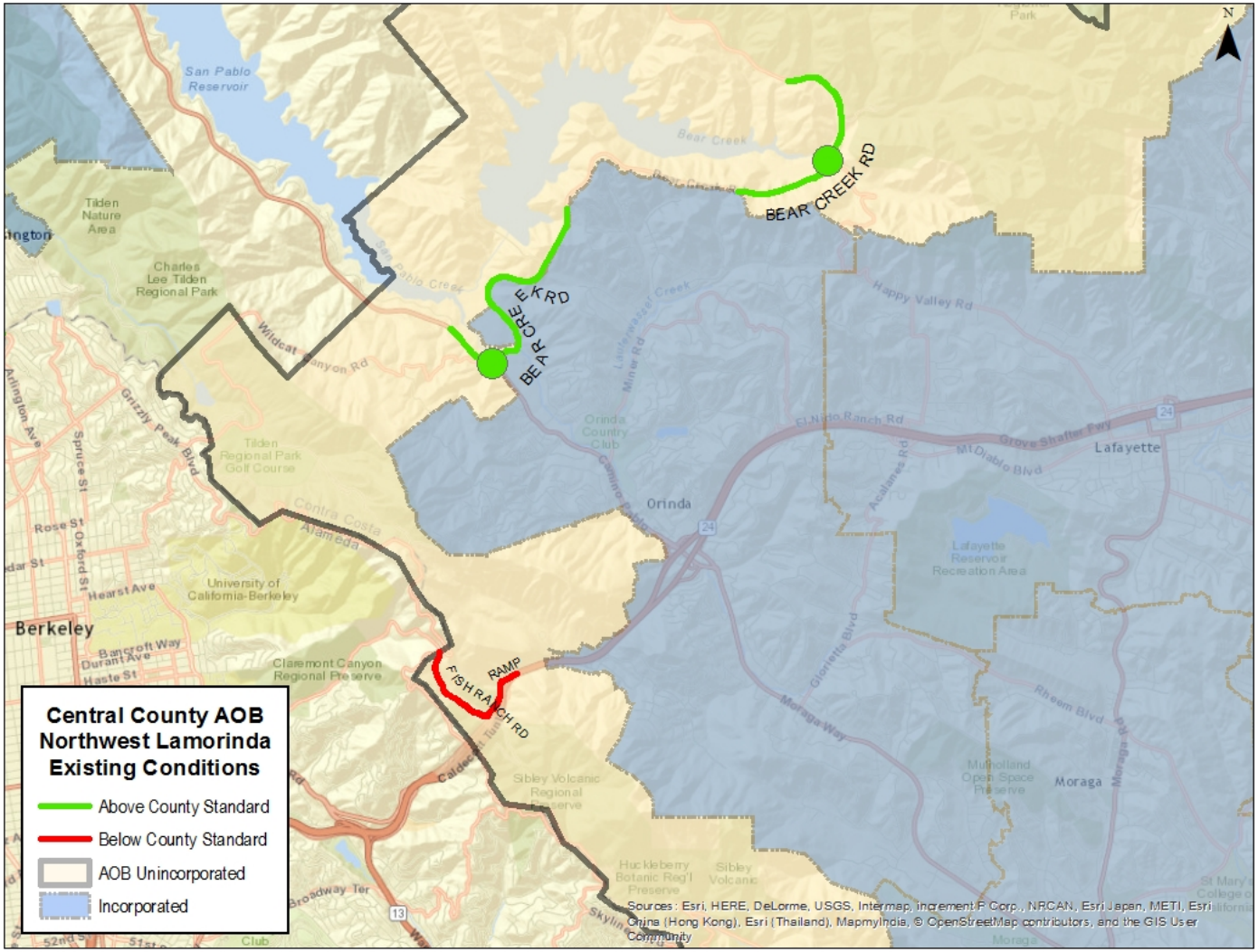


Figure 6: 2040 Levels of Service in Central County AOB – Northwest Lamorinda

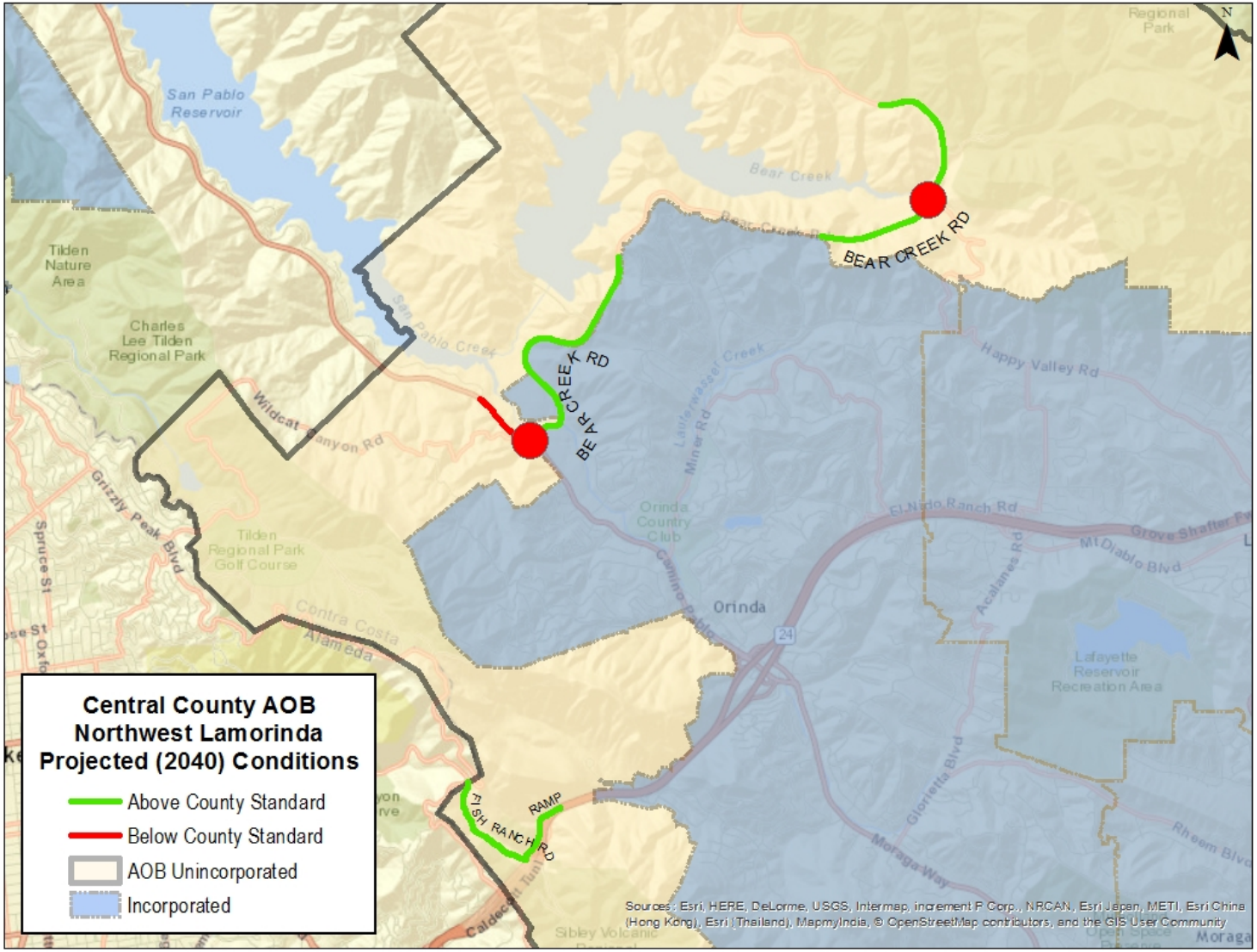


Figure 7: Existing Levels of Service in Central County AOB – Southwest Lamorinda

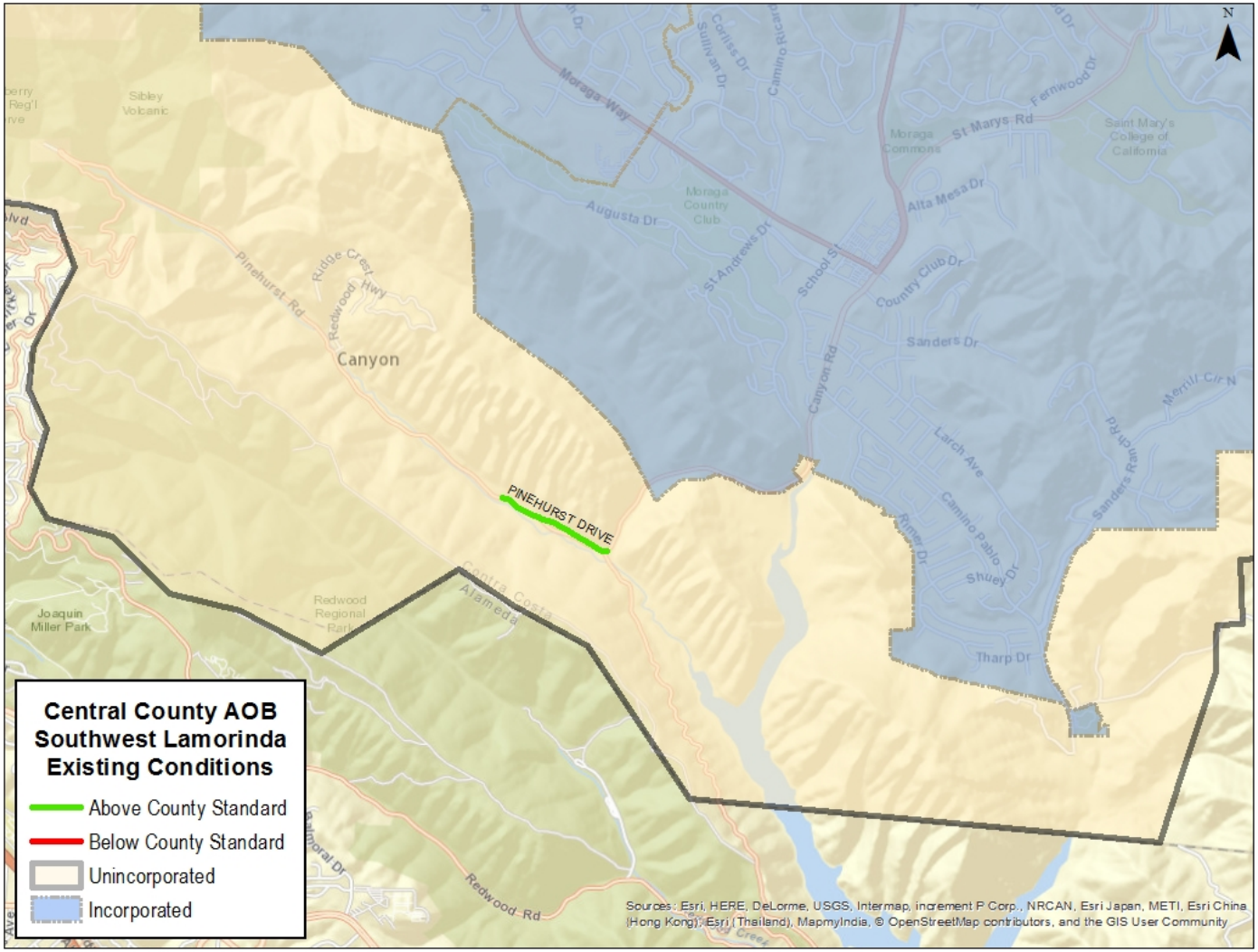


Figure 8: 2040 Levels of Service in Central County AOB – Southwest Lamorinda

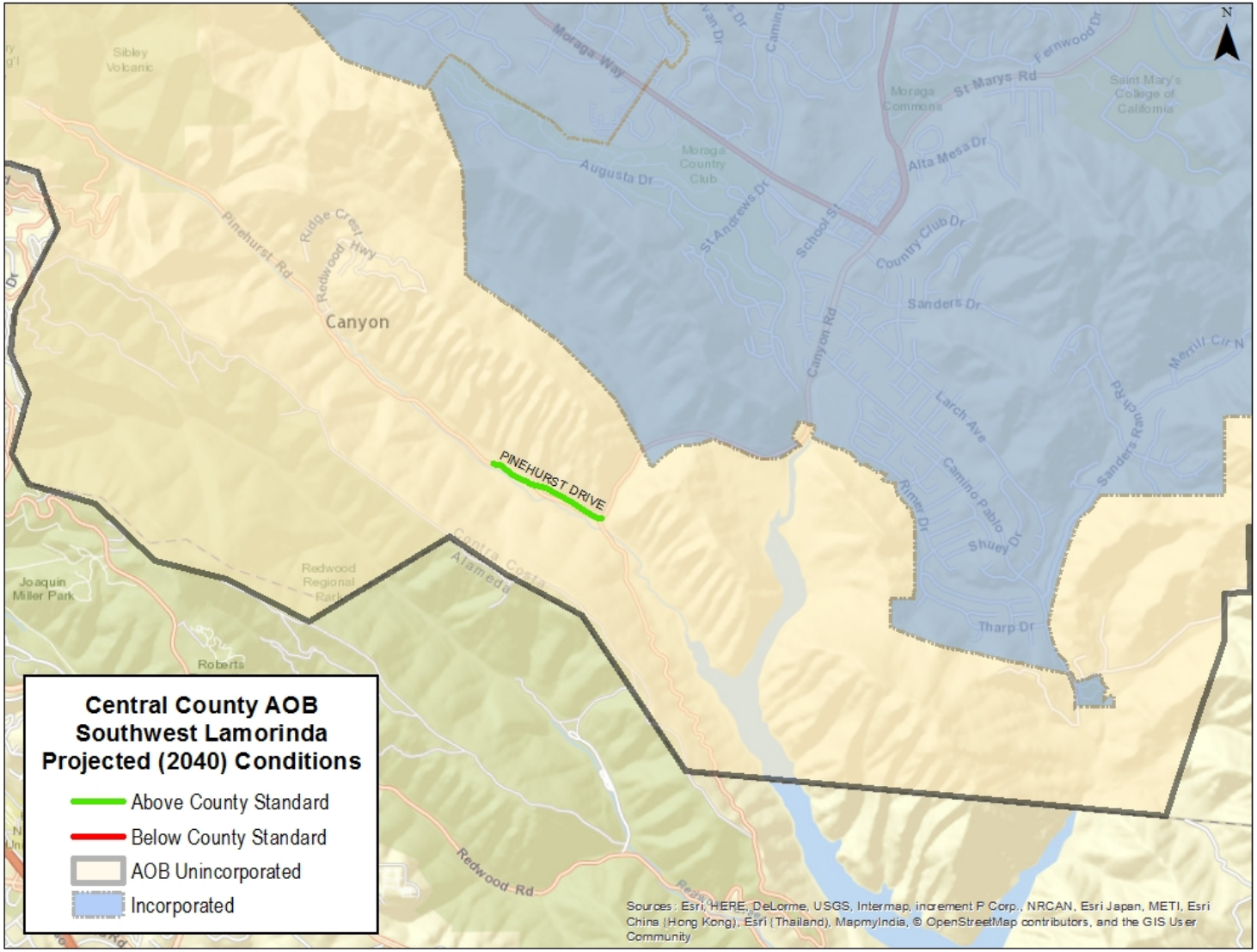


Figure 9: Existing Levels of Service in Central County AOB – East Concord

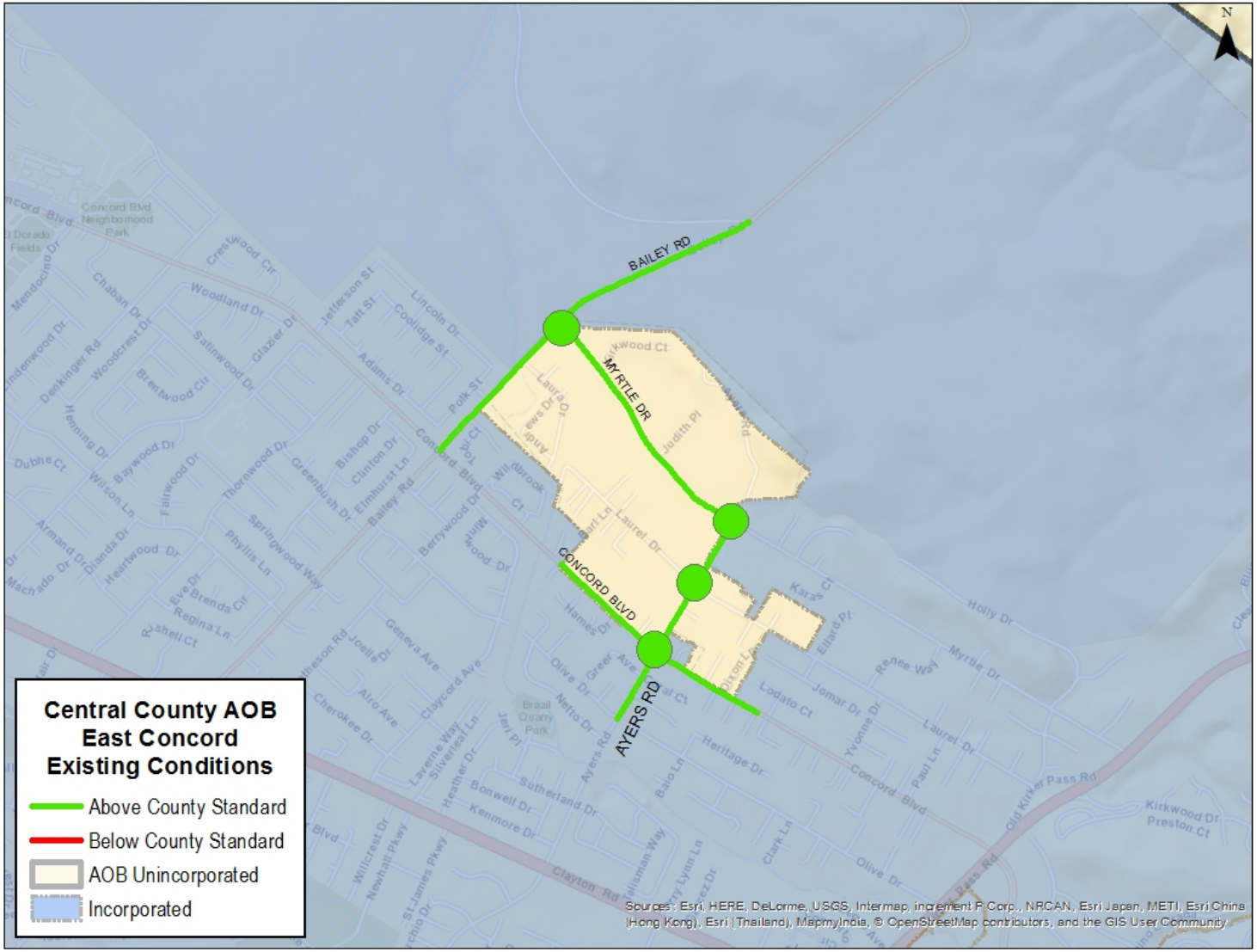


Figure 10: 2040 Levels of Service in Central County AOB – East Concord

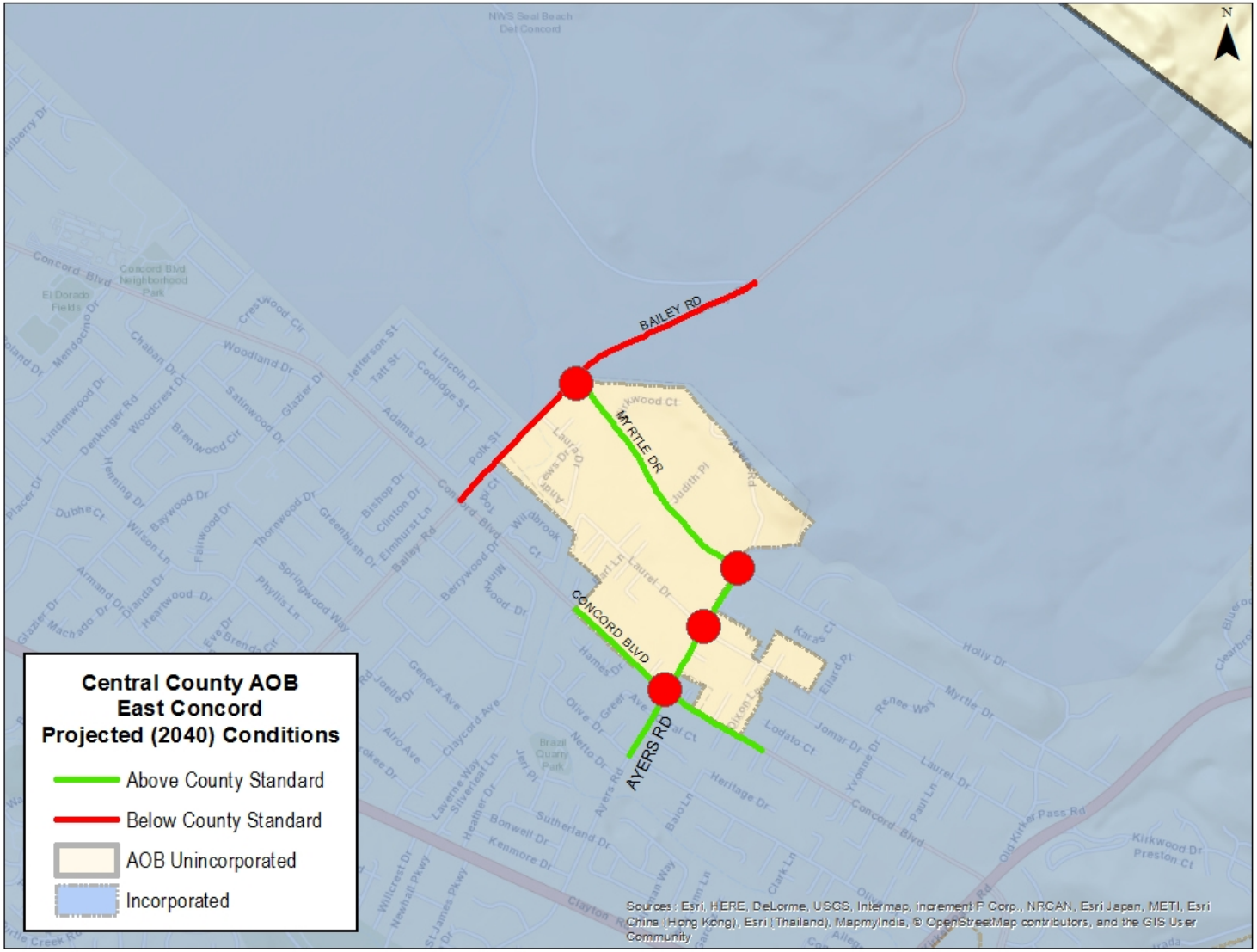


Figure 11: Existing Levels of Service in Central County AOB – Contra Costa Centre

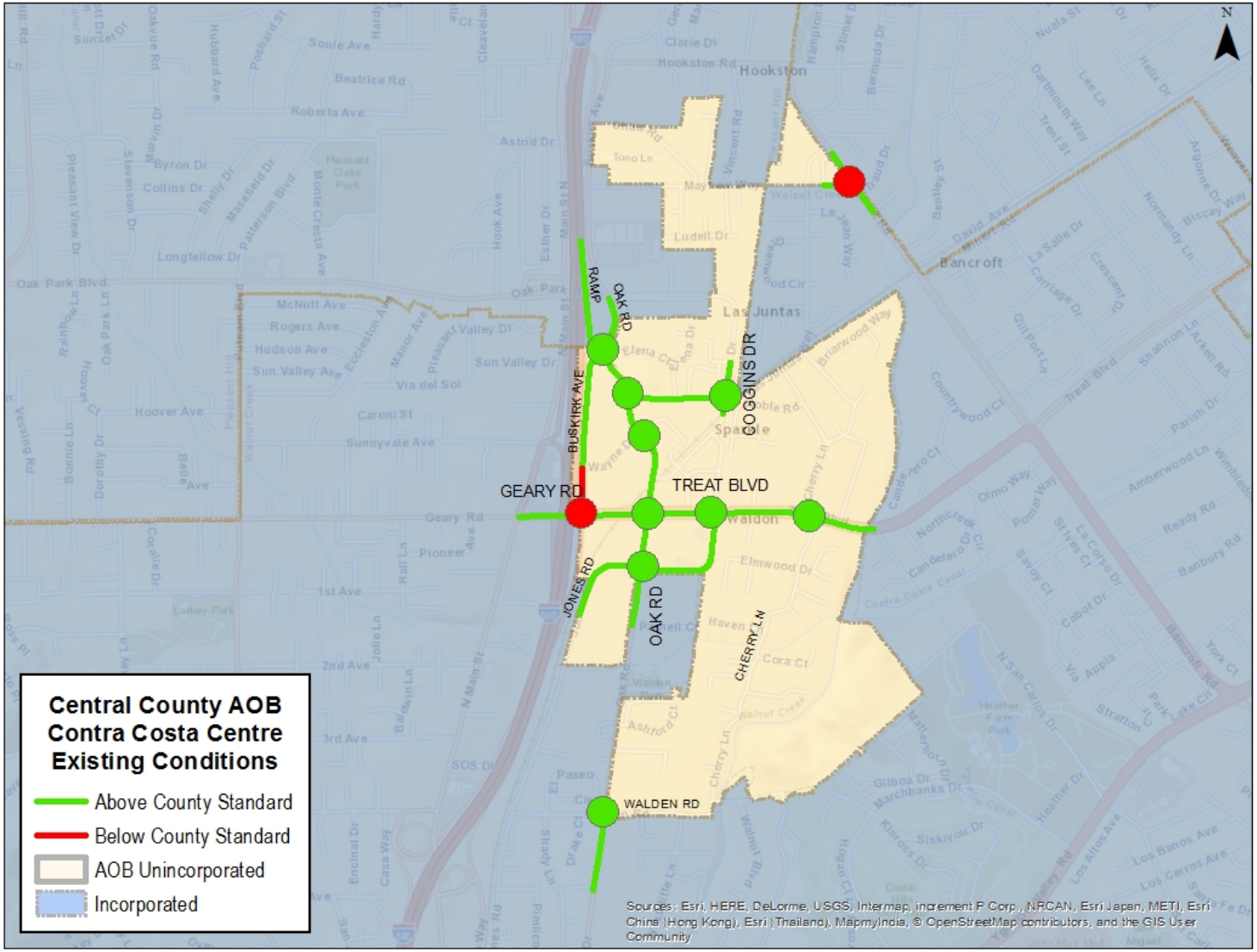


Figure 12: 2040 Levels of Service in Central County AOB – Contra Costa Centre

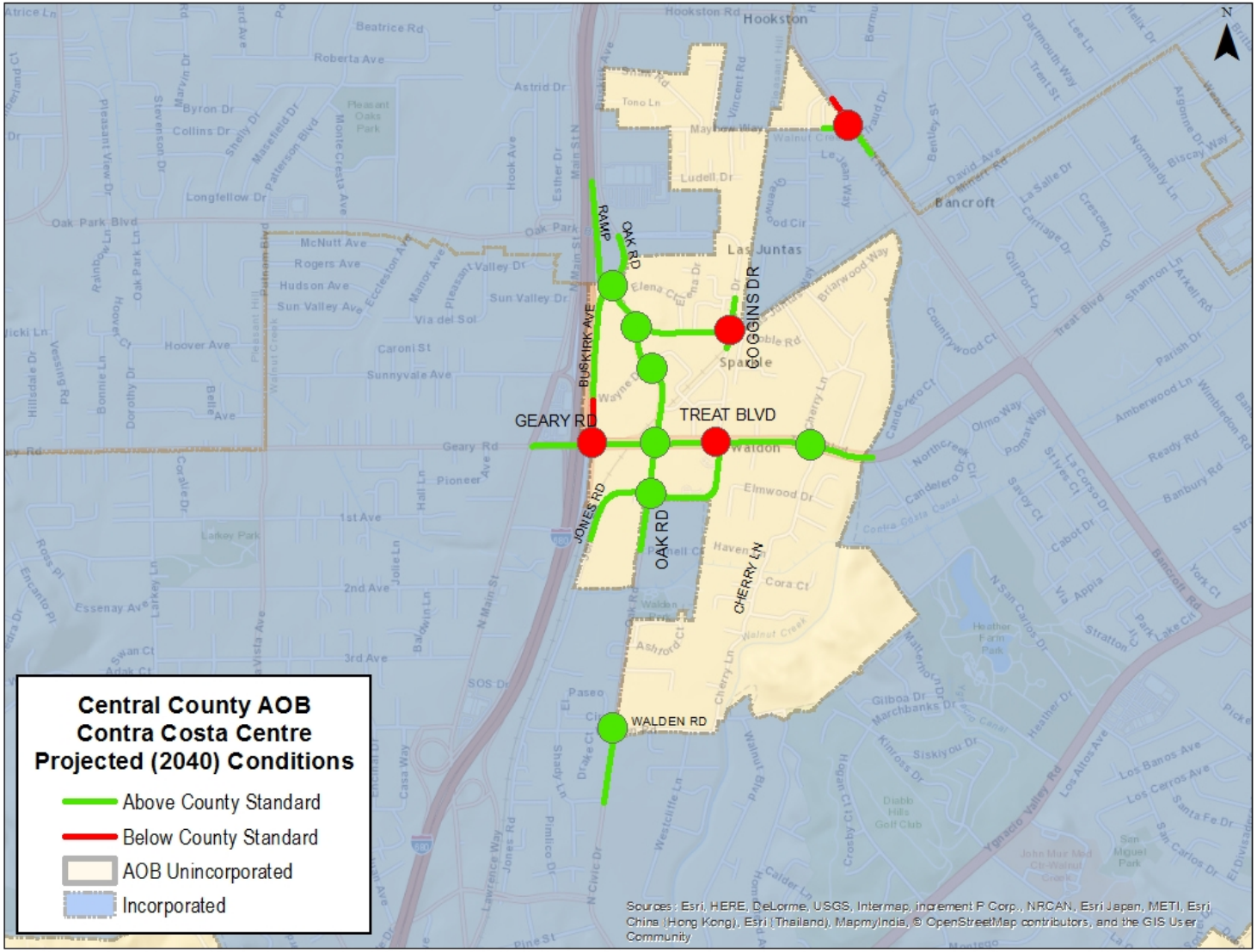


Figure 13: Existing Levels of Service in Central County AOB – South Walnut Creek

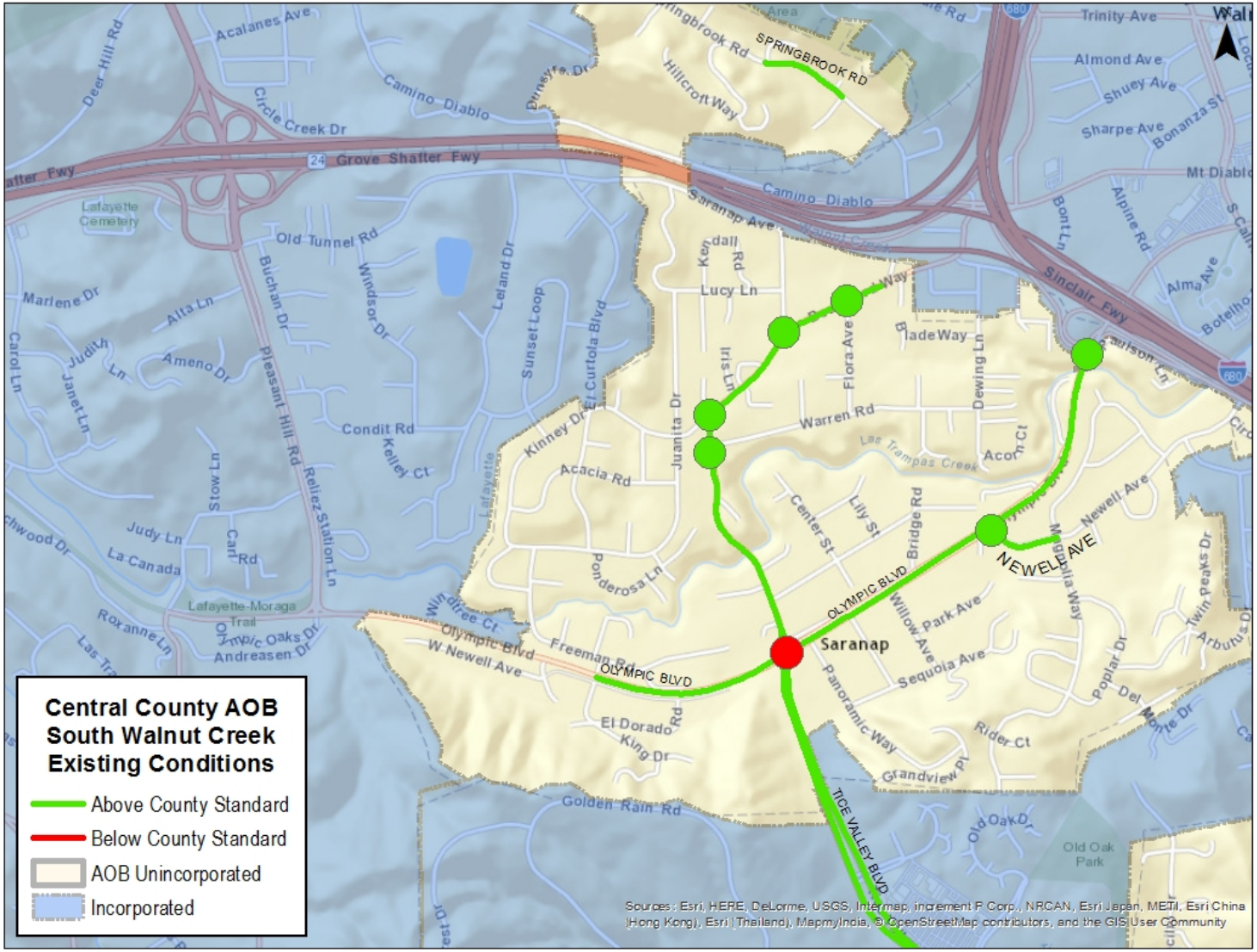


Figure 14: 2040 Levels of Service in Central County AOB – South Walnut Creek

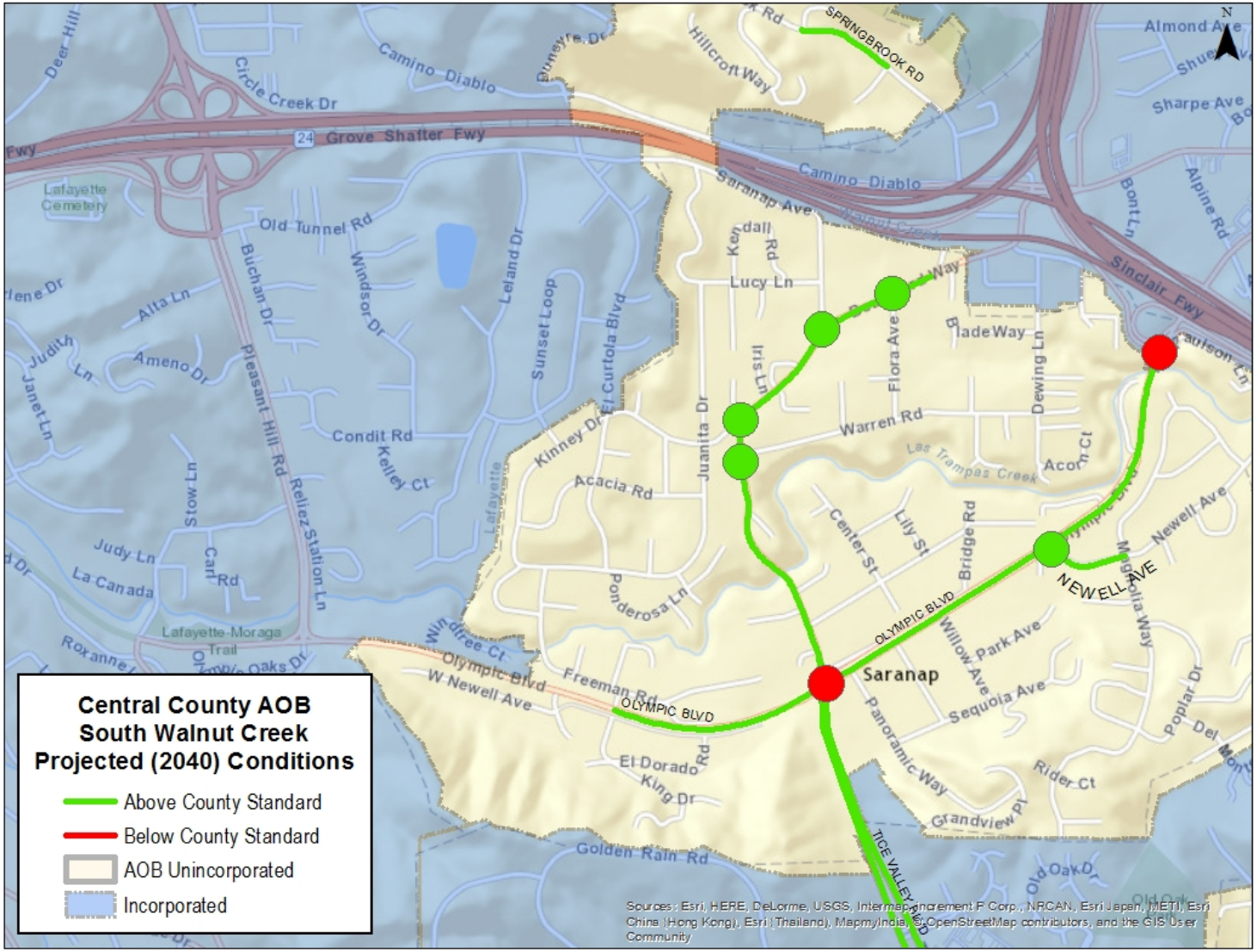


Figure 15: Existing Levels of Service in Central County AOB – San Miguel

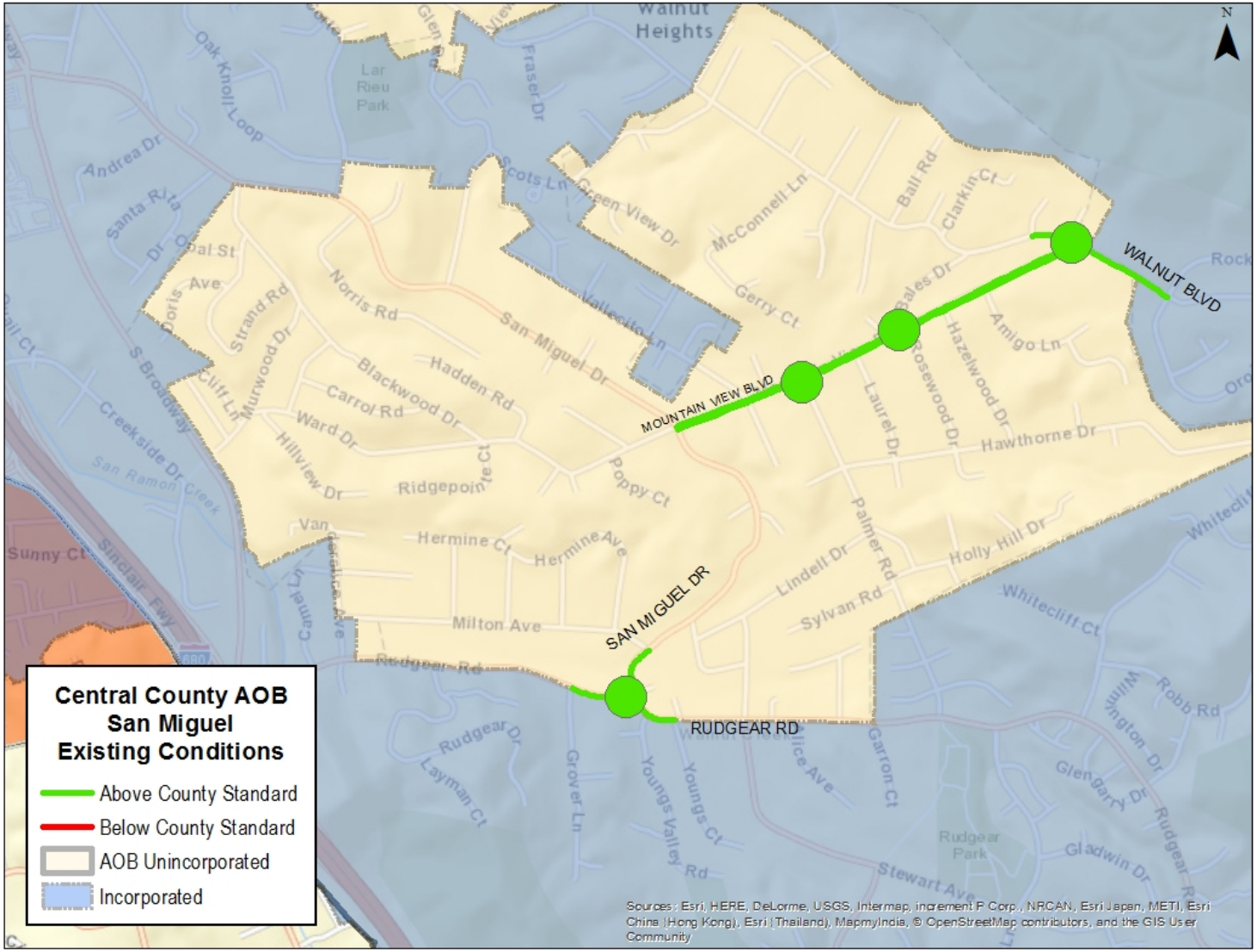
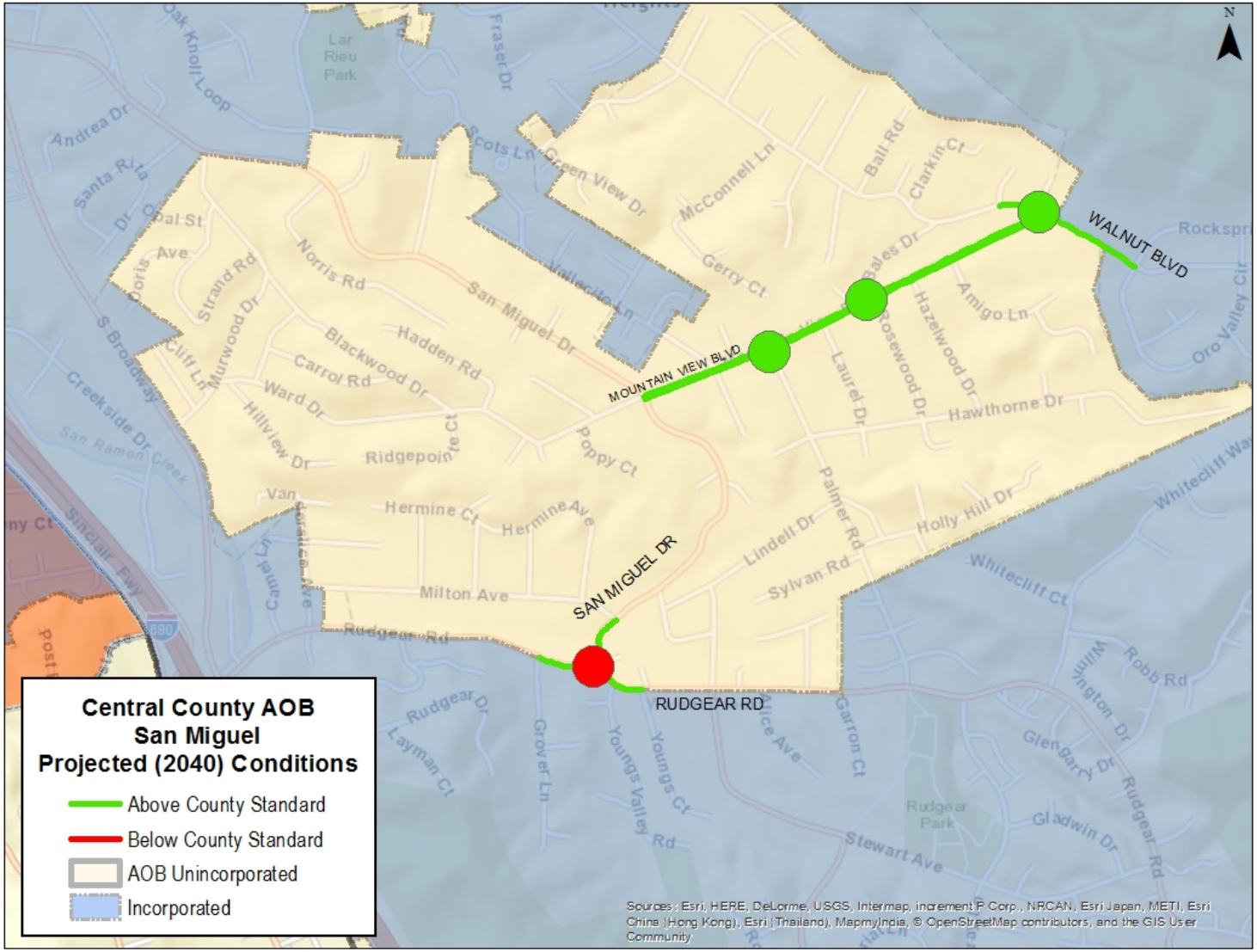


Figure 16: 2040 Levels of Service in Central County AOB – San Miguel



Roadway Pavement Width Standards

Many of the County's two-lane roads within the Central County AOB will not have LOS problems but volume increases on narrow roads within the AOB is a safety issue that should be addressed in the AOB Program. Providing adequate roadway width including adding shoulders to two-lane roadways would increase safety as traffic increases and shoulders would provide a bicycle lane/walkway. FHWA recommends that rural roadways that carry more than 2,000 average daily vehicles (ADT) should have 5 to 6-foot wide shoulders. Contra Costa County's standards for two-lane roadways, shown in **Table 6**, call for shoulders on roadways with more than 1,000 ADT.

Table 6: Two Lane Rural/Lane Widths Contra Costa Public Works Department Standard Plans

Average Daily Traffic	Shoulder Backing (ft.)	Shoulder (ft.)	Lane (ft.)
< 250	0	1	11
< 400	2	1	11
< 1,000	2	4	12
< 3,000	2	5	12
< 6,000	2	6	12
> 6,000	0	8	12
Source: Contra Costa County Public Works Department Standard Plans, 2008			

4.5 Pedestrian and Bicycle Needs Analysis

New development also necessitates changes to roadway design that are not geared toward increases in vehicle capacity or improvements to vehicle safety. New development generates non-vehicular trips (pedestrian and bicycle) that will need to be accommodated by improving roadway shoulders to provide bicycle lanes and pedestrian walkways. On roadways that require improvements based on the roadway/intersection analysis, described above, pedestrian and bicycle facilities would be implemented to the extent that they are represented in the County's current standard roadway designs.

Pedestrian and bicycle infrastructure improvements may also reduce vehicular congestion by shifting trips from autos to these alternative modes. The County's General Plan has goals to encourage the use of transit (Goal 5-I) and to reduce single-occupant auto commuting and encourage walking and bicycling (Goal 5-J). The General Plan also has policies to encourage all efforts to develop alternative transportation systems to reduce peak period traffic congestion (Policy 5-23) and to encourage the use of alternative forms of transportation, such as pedestrian, bicycle and transit modes in order to provide basic accessibility to those without access to a personal automobile and to help minimize automobile congestion and air pollution.

4.6 Selected Project List

A draft list of capital improvements to the transportation system in the AOB Programs was prepared. The project list is focused on the major transportation system in the County's General Plan (see Sections 5.6 and 5.8 of the General Plan, which describe the major roadway, transit, bikeway and pedestrian facilities). This list generally consists of the following types of projects:

1. Installing traffic signals at intersections that meet warrants for their installation
2. Adding turn lanes at intersections to meet LOS standards
3. Adding lanes on roadway segments to meet LOS standards
4. Upgrading roadways to be consistent with County design standards
5. Making improvements to improve safety for all modes of transportation

6. Providing appropriate pedestrian and bicyclist facility improvements

The draft project list was prepared to meet the needs defined above and then was presented at a public meeting for neighborhood residents. Based on comments from the residents, the drafted list was revised. The revised list is shown in **Table 7** and **Figures 17 through 23.**

5. Improvement Cost Estimates

Planning-level cost estimates were prepared based on conceptual designs for each project (**Table 7**) and the design could change in the future based on the circulation needs as growth occurs. The estimates for roadway segment improvements are based on implementing the County's design standards (for roadway cross-sections) by facility type and number of lanes. The cost estimates reflect the known issues, such as creek crossings, relocation of major known utilities, etc. Typical excavation quantities were used except in areas where significant excavation was identified. The cost estimating does not have geotechnical or survey support information. Thus the cost of unknown constraints (such as rock excavation, removal of unsuitable material, relocation of unseen utilities, etc.) were assumed in a project contingency percentage.

The cost estimates include the following appropriate percentages that are key elements in the implementation of each project:

- Project contingencies,
- Survey, design and construction management,
- Environmental mitigation,
- Right-of-way acquisition

The cost estimates for each of the selected projects for funding by the Central County AOB, shown in **Table 7** are provided in **Appendix B**.

Table 7: Selected Central County/South Walnut Creek AOB Project List

Roadway	Project	Location	Recommended Project	Basis for Recommendation
Pleasant Hill Road	WPH2	Geary Road to Taylor Boulevard	Bicycle improvements	Countywide Bicycle and Pedestrian Plan
Reliez Valley Road	WPH3	North of Grayson Road to Withers Avenue	Bicycle improvements	Countywide Bicycle and Pedestrian Plan
Taylor Boulevard	WPH4	Intersection at Gloria Terrace	Safety improvements	Community Input
Fish Ranch Road	NL1	SR-24 to Grizzly Peak Road	Safety improvements	Contra Costa County Standard Plans
San Pablo Dam Road	NL2/3	West of Camino Pablo	Roadway safety improvements	Contra Costa County Standard Plans; CCTA's Comprehensive Transportation Project List
Bear Creek Road	NL5	Intersection at Happy Valley Road	Intersection improvements	Contra Costa County General Plan LOS Standards
Pinehurst Road	SL1	West of Canyon Road	Bicycle improvements	Countywide Bicycle and Pedestrian Plan

Roadway	Project	Location	Recommended Project	Basis for Recommendation
Ayers Road	EC2	Intersection at Concord Avenue	Intersection improvements	Contra Costa County General Plan LOS Standards
	EC3	Intersection at Laurel Avenue	Intersection improvements	
Bailey Road	EC4/6	Intersection and segment at Myrtle Drive	Intersection improvements; Add shoulder	Contra Costa County Standard Plans; Contra Costa County General Plan LOS Standards
Las Juntas Road	CCC1	Intersection at Coggins Drive	Intersection improvements	Contra Costa County General Plan LOS Standards
Buskirk Avenue	CCC2	North of Treat Boulevard	Roadway improvements	Contra Costa County General Plan LOS Standards
Treat Boulevard	CCC3/5	From I-680 Overpass to Jones Road	Complete Street Improvements	Countywide Bicycle and Pedestrian Plan
	CCC4	From Jones Road to Walnut Creek Bridge	Complete Street Improvements	Countywide Bicycle and Pedestrian Plan
	CCC6	Intersection at Jones Road	Intersection improvements	Contra Costa County General Plan LOS Standards
Mayhew Way	CCC8	West of Bancroft Avenue	Pedestrian improvements	Contra Costa County General Plan
Olympic Boulevard	SWC2	Intersection at Boulevard Way/Tice Valley Boulevard	Intersection improvements	Contra Costa County General Plan LOS Standards
	SWC7	Intersection at Bridgefield Road	Intersection improvements	Community Input
	SWC9	Windtree Court to I-680	Bicycle and pedestrian improvements	Olympic Corridor Trail Connector Study
Dewing Lane	SWC3	Between Dewing Lane and So Villa Way	Connection of South Walnut Creek to Iron Horse Trail	Community Input
Tice Valley Boulevard	SWC4	Tice Valley Lane to 200' east of Tice Hollow Court	Complete Street Improvements	Community Input
Springbrook Road	SWC6	170 ft east of Gilmore Street to 460 ft east of Regency Court	Complete Street Improvements	Community Input
Boulevard Way	SWC8	Warren Road to Olympic Boulevard	Sidewalk project	Community Input

Roadway	Project	Location	Recommended Project	Basis for Recommendation
Carry-over Projects from 1994/1995 AOB Project List				
Rudgear Rd	SM1[1]	Intersection at San Miguel Dr	Intersection safety improvements	Carry-over Project
Walnut Blvd	SM2[1]	View Lane to 250' northwest of Walnut Ct	Pedestrian improvements	Carry-over Project
Mountain View Blvd	SM3[1]	Blackwood Dr to Walnut Blvd	Pedestrian improvements	Carry-over Project
San Miguel Dr	SM4[1]	Rudgear Rd to Blackwood Dr	Pedestrian improvements	Carry-over Project

[1]See Figure 2 for map of carry-over projects.

Source: DKS Associates, 2018

Figure 17: Selected Projects for Central County AOB Program – West Pleasant Hill

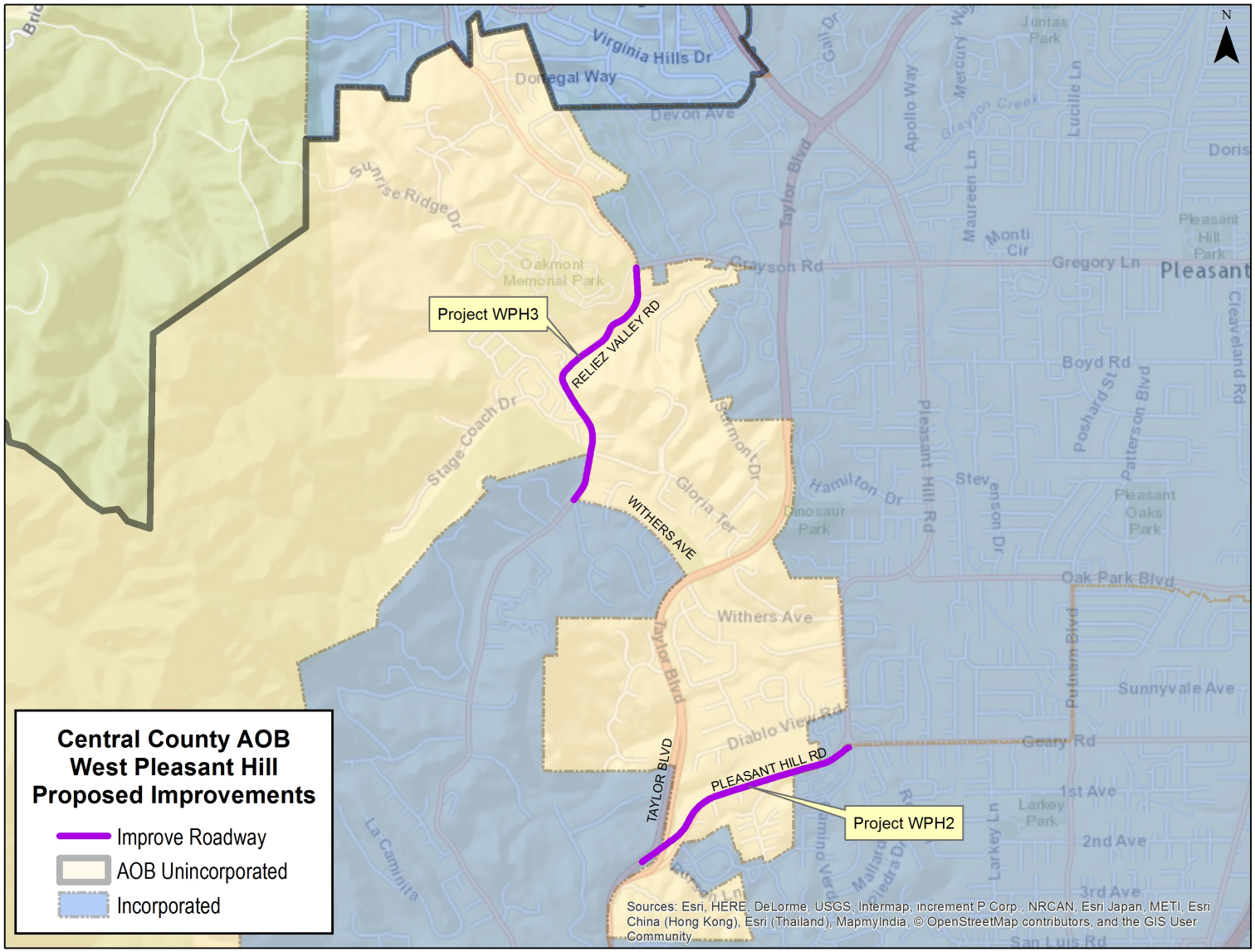


Figure 18: Selected Projects for Central County AOB Program – Northwest Lamorinda

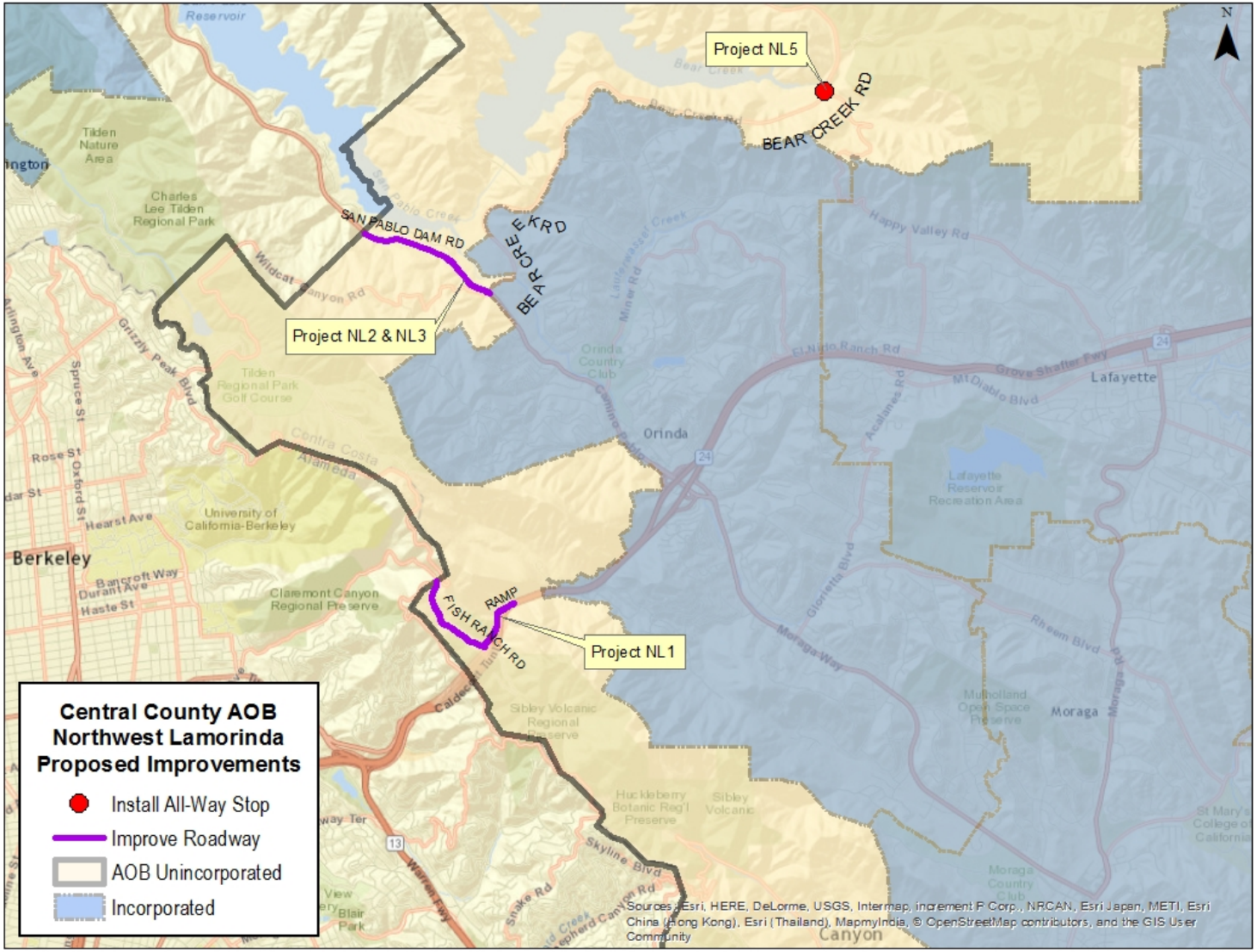


Figure 19: Selected Projects for Central County AOB Program – Southwest Lamorinda

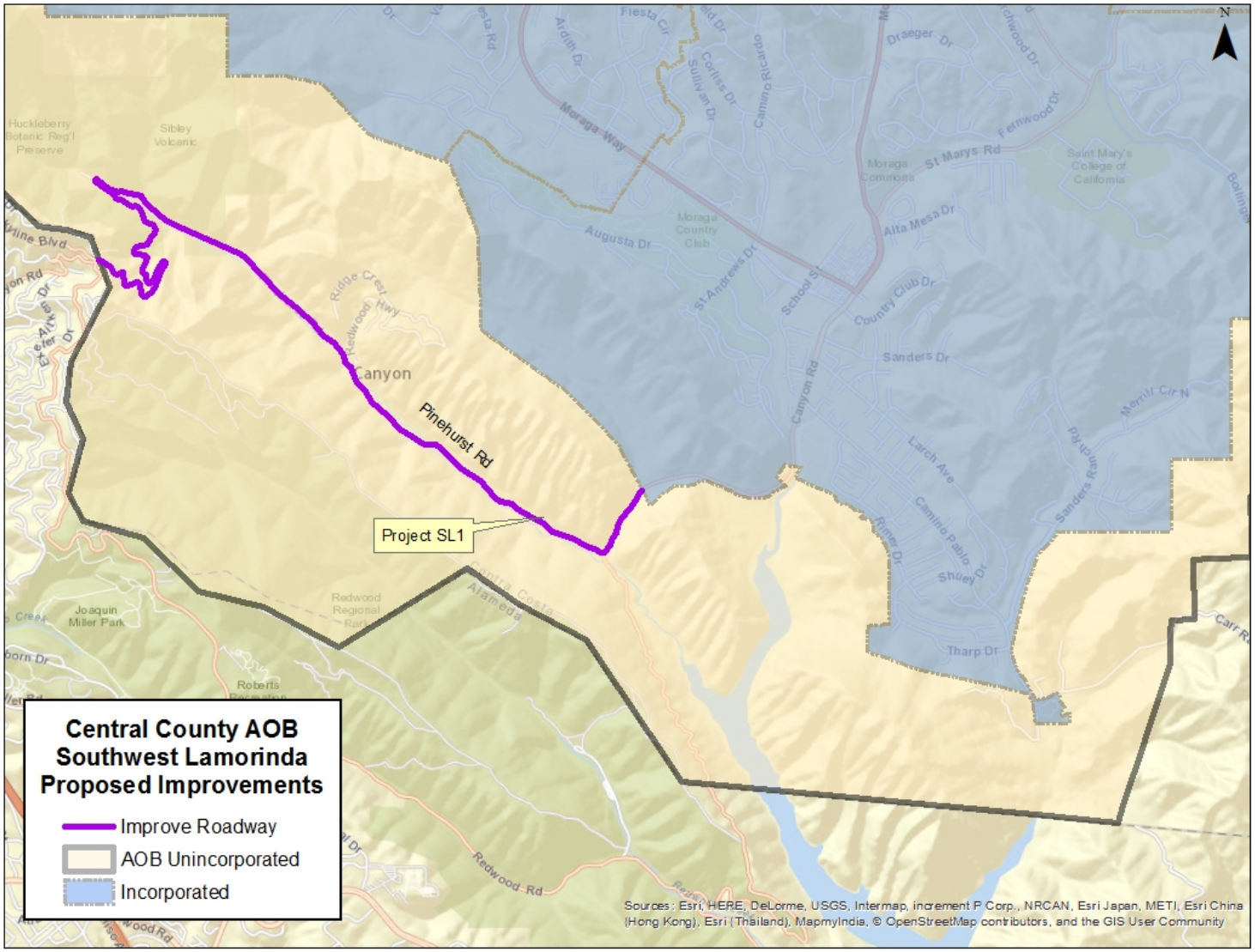


Figure 20: Selected Projects for Central County AOB Program – East Concord

Figure 21: Selected Projects for Central County AOB Program – Contra Costa Centre

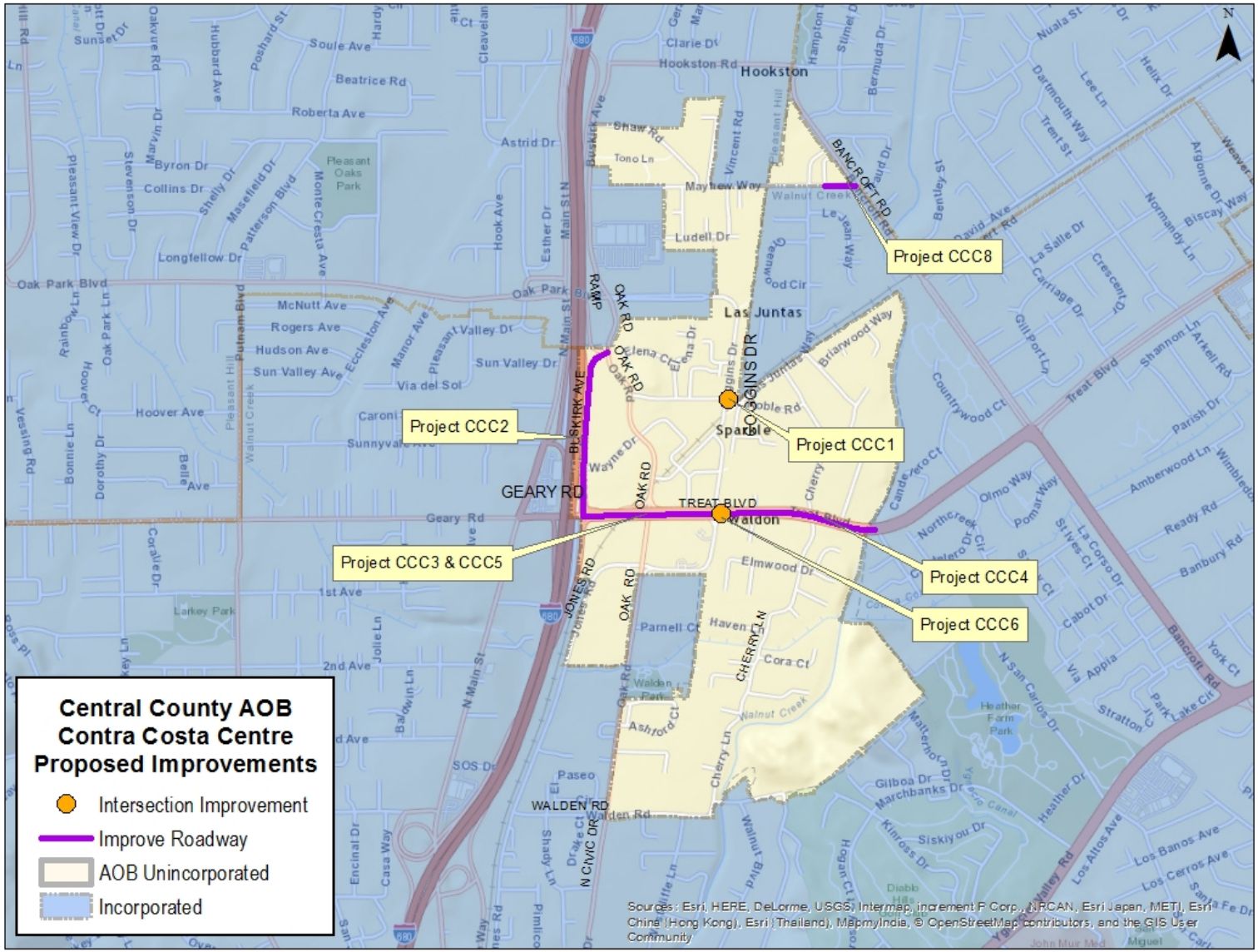
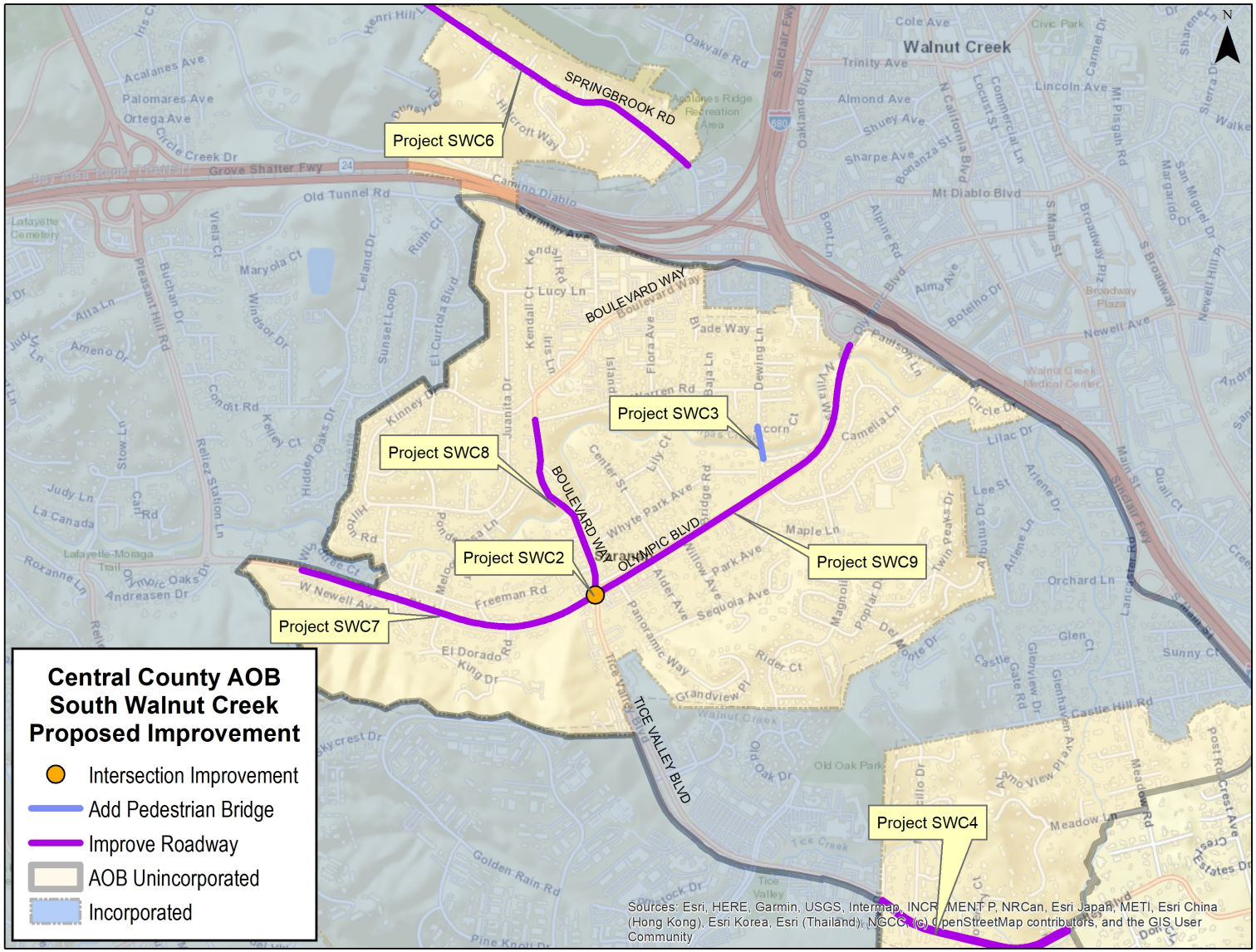


Figure 22: Selected Projects for Central County AOB Program – South Walnut Creek



6. Basis for Allocating Costs to New Development

This section describes the process used to allocate transportation improvement costs to new development in the AOB and the estimated transportation mitigation fees that result from this analysis.

The allocation of costs of roadway and intersection improvements in the AOB is based on answering the following questions:

- Is there an existing deficiency?
- Would the improvement project be required without new development?
- Who uses the roadway/intersection?

The allocation of costs is based on estimates of who will use the roadways or intersections that require improvements based on 2040 traffic forecasts. The allocation of improvement costs is based on the percentage of trips on the roadways and intersections from 1) existing development, 2) new development in the AOB and 3) new development outside the AOB (referred to as through traffic). An increase in through traffic represents an increase in trips that both start and end outside the AOB and pass through the AOB. **Table 8** summarizes the estimated percentages for the selected AOB project list. The methods used to allocate costs are described below.

6.1 Improvements to Meet County LOS Standards

Costs for improvements needed to address LOS impacts (either intersection or roadway LOS) are allocated to new development in the Central County AOB using one of three methods:

1. For a roadway segment or intersection that is currently operating at an acceptable LOS but would operate at an unacceptable LOS in 2040, the entire cost of improving that segment or intersection is allocated to new development if there is no increase in through traffic. This method did not apply to any improvements on the Central County AOB project list.
2. If the current and future LOS conditions are the same as described under #1 but there is an increase in the amount of through traffic then new development within the AOB is not allocated the full cost of the improvement. Instead, new development within the AOB is allocated a percentage of costs based the number of new trips on a roadway segment or intersection that have either their origin or destination within the AOB divided by the total amount of trips from new development. The remaining percent of costs, reflecting new trips that have neither their origin nor destination in the AOB, are not allocated to development in the AOB. This method was used to allocate costs for improvements on San Pablo Dam Road, Bear Creek Road, Ayers Road, Bailey Road, and Las Juntas Road.
3. For a roadway segment or intersection that currently does not meet the County's LOS standards (an existing deficiency), the percent cost share for new development in the AOB is equal to the number of new trips on a roadway segment that have either their origin or destination within the AOB divided by all trips on that roadway, both from existing and new development (including through traffic). This method was used to allocate costs for improvements on Fish Ranch Road, Buskirk Avenue, Treat Boulevard, and Olympic Boulevard.

6.2 Widening to Meet Roadway Pavement Width Standards

4. The allocation of costs to improve roadway to County cross-section standards is similar to the allocation of cost for improvements to address LOS impacts. For a roadway segment that is currently below the traffic volume thresholds shown in **Table 6** but would exceed those thresholds by 2040, the entire cost of improving that segment to the County standard will be allocated to new development. If that roadway has an increase in the amount of through traffic then new development within the AOB is allocated a percentage of costs based on the number of

Table 8: Cost Allocation Analysis for Central County AOB Project List - Level of Service Improvements

Roadway	Project	Location	Recommended Project	Existing Conditions		2040 Conditions		Percent of 2040 Volume				Percent of 2013 to 2040 Growth		Percent Allocated to AOB
				PM Peak Period Volume[4]	LOS	PM Peak Period Volume[4]	LOS[1]	Existing Local	Local Growth	Existing Through	Through Growth	Local	Through	
San Pablo Dam Road	NL3	West of Camino Pablo	Roadway safety improvements	6,000	A-C	6,995	F	3.73	0.34	82.05	13.88	2.36	97.64	2.36
Bear Creek Road	NL5	Intersection at Happy Valley Road	Intersection improvements	1,183	A	1,306	D[5]	2.95	0.27	87.66	9.12	2.83	97.17	2.83
Ayers Road	EC2	Intersection at Concord Avenue[2]	Intersection improvements	6,854	C	9,089	F	16.73	1.50	58.69	23.08	6.12	93.88	6.12
	EC3	Intersection at Laurel Avenue[2]	Intersection improvements	2,573	A	3,936	E	6.84	0.62	58.53	34.01	1.78	98.22	1.78
Bailey Road	EC4	Intersection at Myrtle Drive[2]	Intersection improvements	4,443	D	11,573	F	3.01	0.27	35.38	61.34	0.44	99.56	0.44
Las Juntas Road	CCC1	Intersection at Coggins Drive[2]	Intersection improvements	4,231	C	4,634	F	81.31	7.31	10.00	1.38	84.17	15.83	84.17
Buskirk Avenue	CCC2	North of Treat Boulevard	Roadway improvements	2,295	F	2,641	F	36.57	3.29	50.34	9.80	25.14	74.86	3.29
Treat Boulevard	CCC6	Intersection at Jones Road[3]	Intersection improvements	18,293	E	20,876	F	33.07	2.97	54.56	9.40	24.04	75.96	2.97
Olympic Boulevard	SWC2	Intersection at Boulevard Way/Tice Valley Boulevard[3]	Intersection improvements	13,899	E	15,919	F	18.46	1.66	68.85	11.03	13.08	86.92	1.66
	SWC7	Intersection at Bridgefield Road	Intersection improvements	8,475	E	9,771	F	22.27	2.00	64.46	11.27	15.09	84.91	2.00

Notes: [1]LOS without improvement; [2]Sum of approach volumes, LOS is for PM peak hour; [3]Sum of approach volumes, LOS is for AM peak hour; [4]4-hour peak period from model; [5]AM cumulative peak hour

Values highlighted in gray were used for AOB percent allocation

Source: DKS Associates, 2018

trips associated with new development within the AOB. This method did not apply to any improvements on the Central County AOB project list.

For a roadway segment that currently has a traffic volume above the volume thresholds in **Table 5** and does not meet the County's applicable cross-section standards (an existing deficiency), the percent cost share for new development in the AOB is equal to the number of new trips on a roadway segment that have either their origin or destination within the AOB divided by all trips on that roadway, both from existing and new development.

6.3 Bikeway and Walkway Improvements

Bicycle and pedestrian improvements in the Central County/South Walnut Creek AOB are localized improvements serving trips that have their origin or destination within the AOB rather than through trips. Lack of bicycle and pedestrian facilities is an existing deficiency in the AOB; hence the improvements will benefit both existing and future residents. Since the improvements will serve the existing and future bicycle and pedestrian demand, the cost of those projects allocated to new development will equal the new development's proportional share of the total future development (existing plus new development) in the Central County AOB (measured in Dwelling Unit Equivalents). This method was used to allocate costs for improvements described in **Table 9**.

Table 9: Cost Allocation Analysis for Central County AOB Project List – Safety, Pedestrian, Bicycle and Transit Infrastructure Improvements

Roadway	Project	Location	Recommended Project	Percent Allocated to AOB*
Fish Ranch Road	NL1	SR-24 to Grizzly Peak Road	Safety improvements	8.25
Pleasant Hill Road	WPH2	Geary Road to Taylor Boulevard	Bicycle improvements	8.25
Reliez Valley Road	WPH3	North of Grayson Road to Withers Avenue	Bicycle improvements	8.25
Taylor Blvd	WPH4	Intersection at Gloria Terrace	Intersection Safety improvements	8.25
San Pablo Dam Road	NL2	West of Camino Pablo	Bicycle improvements	8.25
Pinehurst Road	SL1	West of Canyon Road	Bicycle improvements	8.25
Treat Boulevard	CCC3	From I-680 Overpass to Jones Road	Bicycle and pedestrian improvements	8.25
	CCC4	From Jones Road to Walnut Creek Bridge	Bicycle improvements	8.25
Mayhew Way	CCC8	West of Bancroft Avenue	Pedestrian improvements	8.25
Bailey Road	EC6	North and south of Myrtle Drive	Add shoulder	8.25
Dewing Lane	SWC3	Between Dewing Lane and So Villa Way	Pedestrian Bridge over Las Trampas Creek	8.25

Roadway	Project	Location	Recommended Project	Percent Allocated to AOB*
Tice Valley Boulevard	SWC4	Tice Valley Lane to 200' east of Tice Hollow Court	Bicycle and pedestrian improvements	8.25
Olympic Boulevard	SWC9	Windtree Ct to Newell Ct.	Bicycle and pedestrian improvements	8.25
Springbrook Road	SWC6	Henri Hill Lane to Camino Diablo	Bicycle and pedestrian improvements	8.25
Boulevard Way	SWC8	Warren road to Olympic Boulevard	Sidewalk Project	8.25

*Percentage allocation to AOB is the proportion of DUE growth to the total DUEs in 2040 (see Table 2).
Source: DKS Associates, 2018

6.4 Summary of Cost Allocation

Table 10 summarizes the allocation of the cost for each of the selected projects that will have funding from the Central County AOB Program.

The County has various methods for funding transportation improvements within the Central County AOB boundary. While the Central County AOB fee program is one method, additional funding will need to be obtained from Federal, State and local grants (such as ATP, SRTS, BTA, etc.) or other sources to fund the cost of the improvements not allocated to new development in the Central County AOB. On an on-going basis, the County will assess the unconstructed projects on the AOB project list and determine project priorities. As enough funding becomes available from all sources to implement "priority" projects, the County will implement those projects.

Table 10: Allocation of Project Costs to Central County AOB Program

Roadway	Project	Location	Recommended Project	Estimated Total Cost	Percent Allocated to AOB	Cost Allocated to AOB
Pleasant Hill Road	WPH2	Geary Road to Taylor Boulevard	Bicycle improvements	$2,754,000	8.25	$227,297
Reliez Valley Road	WPH3	North of Grayson Road to Withers Avenue	Bicycle improvements	$7,284,000	8.25	$601,173
Taylor Blvd	WPH4	Intersection at Gloria Terrace	Intersection Safety improvements	$2,504,000	8.25	$206,663
Fish Ranch Road	NL1	SR-24 to Grizzly Peak Road	Safety improvements	$5,818,000	8.25	$479,985
San Pablo Dam Road	NL2/3[1]	West of Camino Pablo	Roadway safety improvements	$3,036,500	2.36	$71,744
			Bicycle improvements	$3,036,500	8.25	$250,612
Bear Creek Road	NL5	Intersection at Happy Valley Road	Intersection improvements	$21,000	2.83	$594
Pinehurst Road	SL1	West of Canyon Road	Bicycle improvements	$1,974,000	8.25	$162,921
Ayers Road	EC2	Intersection at Concord Avenue	Intersection improvements	$661,000	6.12	$40,456
	EC3	Intersection at Laurel Avenue	Intersection improvements	$1,471,000	1.78	$26,143
Bailey Road	EC4	Intersection at Myrtle Drive	Intersection improvements	$638,000	0.44	$2,805
	EC6	North and south of Myrtle Drive	Add shoulder	$606,000	8.25	$49,995
Las Juntas Road	CCC1	Intersection at Coggins Drive	Intersection improvements	$858,000	84.17	$722,156
Buskirk Avenue	CCC2	North of Treat Boulevard	Roadway improvements	$2,995,000	3.29	$98,540

Roadway	Project	Location	Recommended Project	Estimated Total Cost	Percent Allocated to AOB	Cost Allocated to AOB
Treat Boulevard	CCC3/5	From I-680 Overpass to Jones Road	Bicycle and pedestrian improvements	$3,045,000	8.25	$251,314
	CCC4	From Jones Road to Walnut Creek Bridge	Bicycle improvements	$3,376,000	8.25	$278,632
	CCC6	Intersection at Jones Road	Intersection improvements	$1,442,000	2.97	$42,895
Mayhew Way	CCC8	West of Bancroft Avenue	Pedestrian improvements	$988,000	8.25	$81,543
Olympic Boulevard	SWC2	Intersection at Boulevard Way/Tice Valley Boulevard	Intersection improvements	$1,048,000	1.66	$17,402
	SWC7	Intersection at Bridgefield Road	Intersection improvements	$845,000	2.00	$16,926
	SWC 9	Windtree Court to Newell Court.	Pedestrian and Bicycle Improvements	$3,984,000	8.25	$328,813
Dewing Lane	SWC3	Between Dewing Lane and So Villa Way	Pedestrian bridge over Las Trampas Creek	$7,502,000	8.25	$619,165
Tice Valley Boulevard	SWC4	Tice Valley Lane to 200' east of Tice Hollow Court	Bicycle and pedestrian improvements	$5,804,000	8.25	$479,023
Springbrook Road	SWC6	Henri Hill Lane to Camino Diablo	Bicycle and pedestrian improvements	$5,976,000	8.25	$493,219
Boulevard Way	SWC8	Warren Road to Olympic Boulevard	Sidewalk project	$3,827,000	8.25	$315,855
			Total:	**$71,494,000**	**8.20**	**$5,865,871**
Rudgear Rd	SM1[2]	Intersection at San Miguel Dr	Intersection safety improvements	$3,588,000	8.25	$296,130

Roadway	Project	Location	Recommended Project	Estimated Total Cost	Percent Allocated to AOB	Cost Allocated to AOB
Walnut Blvd	SM2[2]	View Lane to 250' northwest of Walnut Ct	Pedestrian improvements	$4,001,000	8.25	$330,216
Mountain View Blvd	SM3[2]	Blackwood Dr to Walnut Blvd	Pedestrian improvements	$3,470,000	8.25	$286,391
San Miguel Dr	SM4[2]	Rudgear Rd to Blackwood Dr	Pedestrian and bicycle improvements	$9,079,000	8.25	$749,320
			Total:	**$20,138,000**	**8.25**	**$1,662,056**

Notes:
[1]Cost estimate treats the roadway widening and bicycle improvements as one project, so it was assumed that the cost was split 50%/50% between roadway widening and bicycle improvements, which was based on the relative widths of the improvements.
[2]Carry-over projects to be funded with existing balance.
Source: DKS Associates, 2021

7. Method for Calculating Fees

Land Use Categories

The calculation of fees for the AOB Program Updates will be based on the general land use categories that can be derived for all areas of the county from CCTA's travel demand model. These general categories are the following:

Land Use Type	Units
Single-Family	Dwelling units (DU)
Multi-Family	Dwelling units (DU)
Commercial/Retail	1,000 Sq. Ft.
Office	1,000 Sq. Ft
Industrial	1,000 Sq. Ft

Dwelling Unit Equivalents

In the allocation of costs to various types of development, each development type will be assigned a "dwelling unit equivalent" or "DUE" rate. DUEs are numerical measures of how the trip-making characteristics of a land use compare to a typical single-family residential unit, which is assigned a DUE of 1. Land uses that have greater overall traffic impacts than a typical single-family residential unit are assigned values greater than 1, while land uses with lower overall traffic impacts than a typical single-family residential unit are assigned DUE values less than 1.

DUEs are developed by comparing both the trip generation and trip length characteristics of various land uses to those same rates for a typical single-family residential unit. Since roadway needs are primarily based on traffic flows and conditions during the PM peak hour on an average weekday, the DUEs reflect the relative trip generation for the peak hour. Also considered in the calculation of DUEs are "percent new" trips since some of the vehicles attracted to non-residential uses would have been on the roadway system regardless of the presence of the traffic generated by the new development. Average trip lengths for the remaining "primary" trips generated by a development are then utilized to better reflect overall impact of longer trips on the County's roadway system.

The DUE rates will thus be based on estimates of the average vehicle-miles of travel (VMT) generated during the PM peak hour for each general land use type. The DUE rates that will be used to estimate the Central County AOB fees are shown in **Table 11**.

Table 11: Dwelling Unit Equivalent (DUE) Rates

Land Use Category	PM Peak Hour Trip Rate per Unit[1]	Unit	Trip Length (miles)[2]	Percent New trips[2]	VMT per Unit	DUE per Unit
Singe Family	1.01	Dwelling Unit	5.0	100	5.050	1.00
Multi-Family	0.62		5.0	100	3.100	0.61
Retail	4.10	Square Feet	2.3	76	7.167	0.00142
Office	1.40		4.5	92	5.796	0.00115
Industrial	0.98		5.1	92	4.598	0.00091

[1] ITE Trip Generation 7th Edition
[2] ITE Journal, May 1992
Source: DKS Associates, 2016

Fee Calculation

The cost per DUE (i.e. cost for a typical single-family dwelling unit) is calculated by dividing the total costs allocated to new development in the AOB (methods described above) by the total growth in DUEs in the AOB by 2040 (see **Table 12**). The cost for each land use type is then based on its DUE rate. The nexus-based fee rates are shown in **Table 13**.

Table 12: Growth in DUEs

Land Use Category	Unit	Growth in Units[1]	DUE per Unit	Growth in DUEs
Singe Family	Dwelling Unit	304	1.00	304
Multi-Family		541	0.61	332
Retail	Square Feet	84,000	0.00142	119
Office		184,000	0.00115	211
Industrial		146,000	0.00091	133
			Total	1,099

[1] See Table 2: "Summary of Estimated Development 2010 to 2040 Growth"

Source: DKS Associates, 2016

Table 13: Nexus-Based Fee Rates for Central County AOB

Cost of Improvements Allocated to AOB Growth	$5,865,871
AOB Account Balance (as of August 2016)	$0
Unfunded Allocated Costs	$5,865,871
Growth in Dwelling Unit Equivalents (DUE's)	1099
Cost per DUE	$5,335.39

Land Use	Units	Fee per Unit[1]
Single Family	Dwelling Unit	$5,335
Multi-Family	Dwelling Unit	$3,275
Retail	Square Foot	$7.57
Office	Square Foot	$6.12
Industrial	Square Foot	$4.86

[1]Fee per Unit = (Cost per DUE) x (DUE per Unit)
Source: DKS Associates, 2018

8. Nexus Analysis

A nexus analysis has been prepared on the Central County AOB Program in accordance with the procedural guidelines established in AB1600 which is codified in California Government Section 66000 *et seq*. These code sections set forth the procedural requirements for establishing and collecting development impact fees. These procedures require that "a reasonable relationship or nexus must exist between a governmental exaction and the purpose of the condition." Specifically, each local agency imposing a fee must:

- Identify the purpose of the fee;
- Identify how the fee is to be used;

- Determine how a reasonable relationship exists between the use of the fee use and the type of development project on which the fee is imposed;
- Determine how a reasonable relationship exists between the need for the public facility and the type of development project on which the fee is imposed; and,
- Demonstrate a reasonable relationship between the amount of the fee and the cost of public facility or portion of the public facility attributable to the development on which the fee is imposed.

8.1 Purpose of fee

The purpose of the Central County AOB Program is to fund improvements to the County's major roadway, bicycle and pedestrian facilities needed to accommodate travel demand generated by new land development in the unincorporated portion of Central County AOB over the next 20 years (through 2040).

The Central County AOB Program will help meet the County's General Plan policies including maintenance of adequate levels of service and safety for roadway facilities. New development in the unincorporated portions of the Central County AOB will increase the demand for all modes of travel (including walking, biking, transit, automobile and truck/goods movement) and thus the need for improvements to transportation facilities. The Central County AOB Program will help fund transportation facilities necessary to accommodate new residential and non-residential development in the unincorporated portions of the Central County AOB.

8.2 Use of Fees

The fees from new development in the Central County AOB Program will be used to fund additions and improvements to the transportation system needed to accommodate future travel demand resulting from residential and non-residential development within the Central County AOB. The Central County AOB Program will help fund improvements to roadways (include the widening or extensions of arterial and collector roadways, intersection improvements and provision of shoulders and complete streets) bikeways and walkways plus fee program administration costs. The transportation improvements wholly or partially funded by the program are described in more detail in **Section 4.**

8.3 Relationship between use of Fees and Type of Development

Fee revenues generated by the Central County AOB Program will be used to develop the transportation improvements described in **Section 4**. All of these improvements increase the capacity, improve the safety, or facilitate the use of alternative modes (transit, bicycle, pedestrian) on those segments of the transportation system affected by new development. The results of the transportation modeling analysis summarized in this report demonstrate that these improvements either mitigate impacts from and/or provide benefits to new development.

8.4 Relationship between Need for Facility and Type of Development

The projected residential and non-residential development described in **Section 3** will add to the incremental need for transportation facilities by increasing the amount of demand on the transportation system. The transportation analysis presented in **Section 4** demonstrates that improvements are required to minimize the negative impact on current levels of service caused by new development and/or accommodate the increased need for alternative transportation modes (transit, bicycle, pedestrian).

8.5 Relationship between Amount of Fees and the Cost of Facility Attributed to Development upon which Fee is Imposed

The basis for allocating improvement costs to development is described in **Section 6**. Construction of necessary transportation improvements will directly serve residential and non-residential development within the unincorporated portions of the AOB and will directly benefit development in those areas.

New development within the AOB is allocated a percentage of costs based the number of new trips on a roadway segment or intersection that have either their origin or destination within the AOB divided by the total amount of trips from new development. The remaining percent of costs, reflecting new trips that have neither their origin nor destination in the AOB (through trips), are not allocated to development in the AOB. For facilities that have an "existing deficiency", the cost of the improvement that is allocated to the Central County AOB Program is modified to account for that deficiency.

The fee that a developer pays for a new residential unit or commercial building varies by the type of development based on its impact on the transportation system. Each development type is assigned a "dwelling unit equivalent" or "DUE" rate based on its estimated vehicle-miles of travel (VMT) per unit of development.

DUE's are numerical measures of how the trip-making characteristics of a land use compare to a single-family residential unit. DUE's were developed by comparing both the trip generation and trip length characteristics of various land uses to those of the single-family residential units. Since roadway needs are primarily based on traffic flows and conditions during the peak hour on an average weekday, the DUE's reflect the relative trip generation for the peak hour. Also considered in the calculation of DUE's are "percent new" trips. The DUE rates were thus based on estimates of the average vehicle-miles of travel (VMT) generated during the peak hour for each general land use type.

8.6 Current AOB Fund Balance

The Central County AOB has been earmarked for those carry-over projects from the project list approved in 1995 that have not yet been completed (see **Table 2**). All funds collected under the program for both the Central County AOB and the South Walnut Creek AOB were committed to projects on the original list (see **Table 1**). The projects added in this update will receive funding from new development in the AOB.

DKS

Appendix A

Cost Estimates for Specific Projects to be Completed from the

1994/1995 Central County AOB Project List

DKS Associates

1970 Broadway Ste 740, Oakland CA 94612

Planning Cost Estimate

Project Number **SM1**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Rudgear Road Intersection Improvements

Project Location: Rudgear Road & San Miguel Drive

Description: Project would install a mini-roundabout at the intersection of Rudgear Road and San Miguel Drive

Project Length (: N/A

Date of Estimate: Apr. 30, 2018

Prepared by: E. Vaca/J. Palma

Revision No.
Revision Date
Revised by

No.	Description	Quantity	Units	Unit Cost	Total
1	Traffic Control	1	LS	$180,000.00	$ 180,000
4	Lighting (intersection only)	1	LS	$100,000.00	$ 100,000
5	Landscaping	2,000	SF	$25.00	$ 50,000
6	Drainage Modification - Culvert Extension	1	EA	$100,000.00	$ 100,000
7	Roadway Excavation	1,902	CY	$50.00	$ 96,000
9	Aggregate Base (assumed 1.80ft)	1,268	CY	$200.00	$ 254,000
10	Hot Mix Asphalt	728	TON	$150.00	$ 110,000
11	Thermoplastic Traffic Striping	1	LS	$5,000.00	$ 5,000
12	Relocate Roadside Signs/Add New Signs	3	EA	$250.00	$ 1,000
13	Clearing and Grubbing	12,095	SF	$3.00	$ 37,000
14	Tree Removal	1	EA	$1,000.00	$ 1,000
15	Mobilization (10%)				$ 75,400

Project Number **SM1**

Planning Engineering (TE)	$ 100,000	Contract Items	$ 934,000
Preliminary Engineering (Design/Survey)* 25%	$ 234,000	Other Costs (CON)	$ 161,000
Utility Coordination (Design)	$ 50,000	Contingency*	$ 187,000
Environmental (Environmental, Real Property)	$ 40,000	Subtotal (Contract Items)	$ 1,282,000
R/W Engineering (Survey)	$ 25,000	Subtotal (Plan)	$ 100,000
Real Property Labor	$ 60,000	Subtotal (PE)	$ 324,000
R/W Acquisition	$ 1,500,000	Subtotal (R/W)	$ 1,585,000
Construction Engineering * 15%	$ 141,000		
Environmental Monitoring and Mitigation Fees	$ 20,000		
SUBTOTAL of OTHER COSTS (ALL)	$ 2,170,000		
		Grand Total	$ 3,291,000
		Current Year	2018
		Escalation Year	2021
		Escalation Rate	9.0%
		➢ **TOTAL (in 2021 dollars)**	**$ 3,588,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($10,000 min.)

* CONTINGENCY is 20% of contract items. ($10,000 min.)

Transportation Engineering

Planning Cost Estimate

Contra Costa County Public Works Department

WO xxxx

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Walnut Blvd Sidewalk Project Part 2

Alternative: Sidewalk on Both Sides of Roadway

Project Location: Walnut Blvd between View Lane and 250' NW of Walnut Ct

Assumptions: R, TI, etc.

Project Length (ft): 1,700

Date of Estimate: Oct. 6, 2015

Prepared by: Tianjun Cao

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	6	EA	$ 550.00	$ 3,300
2	Traffic Control System	1	LS	$ 20,000.00	$ 20,000
3	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
4	Remove Thermoplastic Traffic Stripe	3400	LF	$ 2.00	$ 6,800
5	Minor Structure (Sidewalk Cross Drain)	1	EA	$ 600.00	$ 600
6	Clearing and Grubbing	1	LS	$ 30,000.00	$ 30,000
7	Remove Tree	22	EA	$ 2,000.00	$ 44,000
8	Saw Cut Pavement Edges	3400	LF	$ 2.00	$ 6,800
9	Roadway Excavation	1039	CY	$ 45.00	$ 46,755
10	Imported Material (Shoulder Backing)	238	TON	$ 45.00	$ 10,710
11	Class 2 Aggregate Base	1131	TON	$ 45.00	$ 50,895
12	Hot Mix Asphalt (Type A)	1849	TON	$ 110.00	$ 203,390
13	Minor Concrete (Sidewalk)	13650	SF	$ 10.00	$ 136,500
14	ADA Curb Ramp	4	EA	$ 3,500.00	$ 14,000
15	Driveway Conform	14	EA	$ 10,000.00	$ 140,000
16	Curb and Gutter	3400	LF	$ 45.00	$ 153,000
17	Earthwork	890	CY	$ 25.00	$ 22,250
18	Minor Concrete (Retaining Wall)	900	LF	$ 140.00	$ 126,000
19	Minor Structure (Inlet)	2	EA	$ 3,200.00	$ 6,400
20	Metal Beam Guard Railing	300	LF	$ 115.00	$ 34,500
21	C.3 Provisions and Misc. Drainage	1	LS	$ 70,000.00	$ 70,000
22	Sign Relocation	8	EA	$ 500.00	$ 4,000
23	Mailbox Removal and Replacement	6	EA	$ 300.00	$ 1,800
24	Thermoplastic Traffic Stripe - Det. 27B, Right Edge Line	3400	LF	$ 2.00	$ 6,800
25	Mobilization	1	LS	$ 115,000.00	$ 115,000

OTHER COSTS BY PHASE:

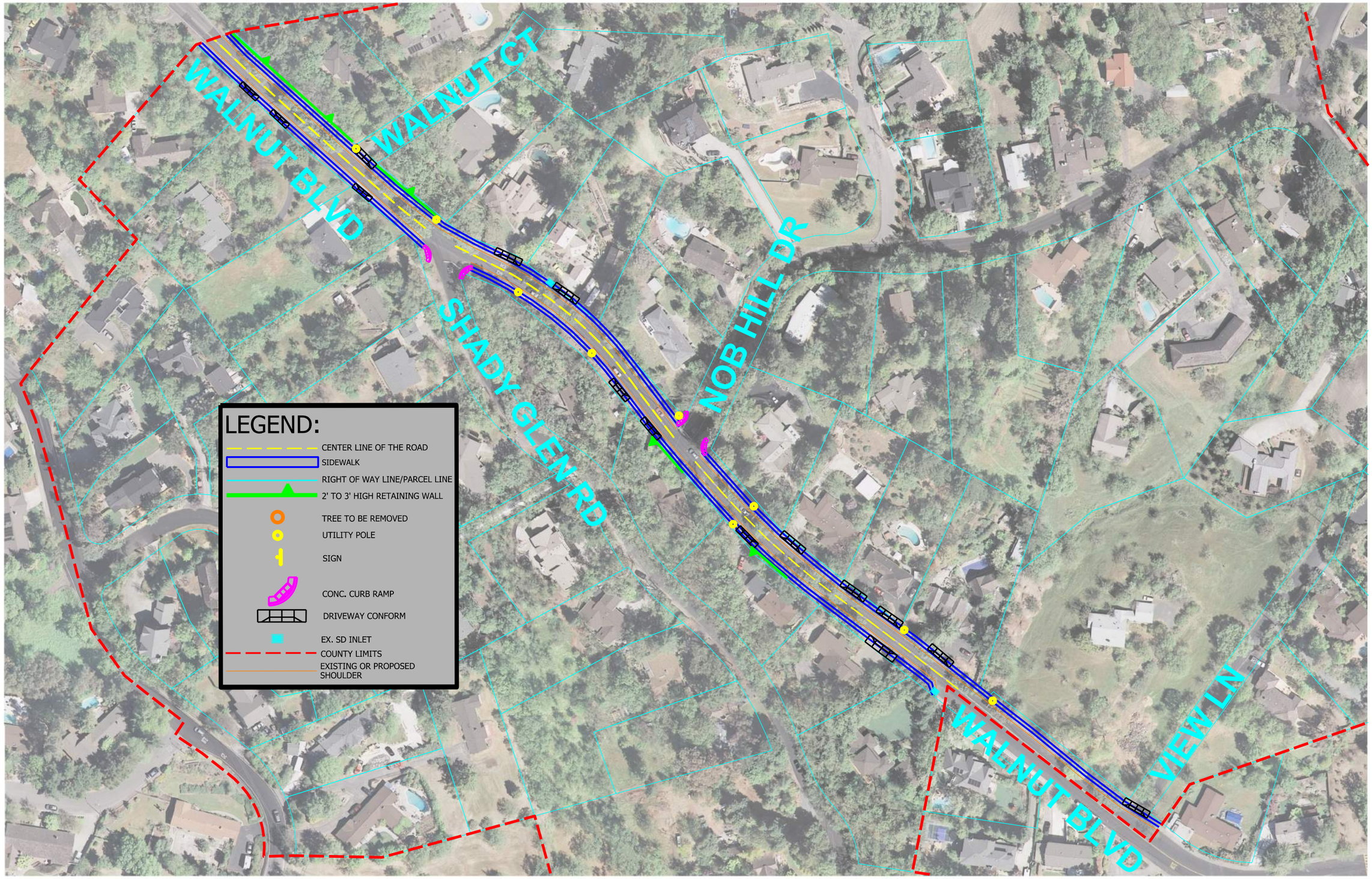
PLAN	Planning Engineering (TE)	$ 200,000
PE	Preliminary Engineering (Design/Survey)*	$ 504,000
	Utility Coordination (Design)	$ 50,000
	Environmental (Environmental, Real Property)	$ 200,000
R/W	R/W Engineering (Survey)	$ 20,000
	Real Property Labor	$ 200,000
	R/W Acquisition	$ 500,000
CON	Construction Engineering *	$ 189,000
	Environmental Monitoring and Mitigation Fees	$ 100,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 1,963,000

CONTRACT ITEMS	$ 1,260,000
OTHER COSTS (CON)	$ 289,000
CONTINGENCY*	$ 189,000
SUBTOTAL (CON)	$ 1,738,000
SUBTOTAL (PLAN)	$ 200,000
SUBTOTAL (PE)	$ 754,000
SUBTOTAL (R/W)	$ 720,000
GRAND TOTAL	$ 3,412,000
CURRENT YEAR	2015
ESCALATION YEAR	2021
ESCALATION RATE	17.3%
➢ **TOTAL (in 2021 dollars)**	**$ 4,001,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)



SCALE: 1" = 130'

Contra Costa County
Public Works
Department
255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

WALNUT BLVD PEDESTRIAN AND BICYCLE PROJECT PART 2

FEDERAL ID NO.:	DB: TC	CB: MH	DATE: OCT 2015	SHEET 1 OF 1

Transportation Engineering

Planning Cost Estimate

Contra Costa County Public Works Department

WO xxxx

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Mt. View Blvd Sidewalk

Alternative: North Side of Roadway

Project Location: From Walnut Blvd to San Miguel Dr

Assumptions: R, TI, etc.

Project Length (ft): 3800

Date of Estimate: Oct. 6, 2015

Prepared by: Joey Herringshaw

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	12	EA	$ 550.00	$ 6,600
2	Traffic Control System	1	LS	$ 100,000.00	$ 100,000
3	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
4	Remove Thermoplastic Traffic Stripe	3800	LF	$ 2.00	$ 7,600
5	Culvert Alteration	1	EA	$ 1,000.00	$ 1,000
6	Minor Concrete (Driveway Conform)	28	EA	$ 4,000.00	$ 112,000
7	Relocate Mailbox	17	EA	$ 350.00	$ 5,950
8	Clearing and Grubbing	1	LS	$ 30,000.00	$ 30,000
9	Remove Tree	5	EA	$ 2,000.00	$ 10,000
10	Saw Cut Pavement Edges	3800	LF	$ 2.00	$ 7,600
11	Roadway Excavation	2322	CY	$ 45.00	$ 104,490
12	Imported Material (Shoulder Backing)	532	TON	$ 45.00	$ 23,940
13	Class 2 Aggregate Base	2527	TON	$ 45.00	$ 113,715
14	Hot Mix Asphalt (Type A)	4133	TON	$ 110.00	$ 454,630
15	Minor Concrete (Curb and Gutter)	3800	LF	$ 25.00	$ 95,000
16	Minor Concrete (Sidewalk)	19000	SF	$ 12.00	$ 228,000
17	ADA Curb Ramp	7	EA	$ 3,500.00	$ 24,500
17	C.3 Provisions and Misc. Drainage	1	LS	$ 70,000.00	$ 70,000
18	Thermoplastic Traffic Stripe - Det. 27B, Right Edge Line	3800	LF	$ 2.00	$ 7,600
19	Mobilization	1	LS	$ 141,000.00	$ 141,000

OTHER COSTS BY PHASE:

OTHER COSTS BY		
PLAN	Planning Engineering (TE)	$ 200,000
	Preliminary Engineering (Design/Survey)*	$ 403,000
PE	Utility Coordination (Design)	$ 40,000
	Environmental (Environmental, Real Property)	$ 80,000
	R/W Engineering (Survey)	$ 40,000
R/W	Real Property Labor	$ 100,000
	R/W Acquisition	$ 60,000
	Construction Engineering *	$ 233,000
CON	Environmental Monitoring and Mitigation Fees	$ 20,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 1,176,000

CONTRACT ITEMS	$ 1,550,000
OTHER COSTS (CON)	$ 253,000
CONTINGENCY*	$ 233,000
SUBTOTAL (CON)	$ 2,036,000
SUBTOTAL (PLAN)	$ 200,000
SUBTOTAL (PE)	$ 523,000
SUBTOTAL (R/W)	$ 200,000
GRAND TOTAL	$ 2,959,000
CURRENT YEAR	2015
ESCALATION YEAR	2021
ESCALATION RATE	17.3%
➢ **TOTAL (in 2021 dollars)**	**$ 3,470,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

SCALE: 1" = 200'

Contra Costa County
Public Works
Department

255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

MOUNTAIN VIEW BLVD PEDESTRIAN PROJECT

FEDERAL ID NO.:

DB: JH CB: MH

DATE: OCT 2015

SHEET 1 OF 1

Transportation Engineering

Planning Cost Estimate

Contra Costa County Public Works Department

WO 4176

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: San Miguel Drive Pedestrian Project

Alternative: East side north of Shady Glen and west side south of Shady Glen

Project Location: Blackwood Dr to Rudgear Rd

Assumptions: R, TI=6

Project Length (ft): 8,000

Date of Estimate: Oct. 6, 2015

Prepared by: Tianjun Cao

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	15	EA	$ 550.00	$ 8,250
2	Traffic Control System	1	LS	$ 50,000.00	$ 50,000
3	Major Earthwork or ped bridge	1	LS	$ 200,000.00	$ 200,000
4	Remove Thermoplastic Traffic Stripe	8000	LF	$ 2.00	$ 16,000
5	Remove Concrete	1	LS	$ 10,000.00	$ 10,000
6	Remove AC	1	LS	$ 15,000.00	$ 15,000
7	Clearing and Grubbing	1	LS	$ 150,000.00	$ 150,000
8	Tree Protection	1	LS	$ 100,000.00	$ 100,000
9	Remove Tree	13	EA	$ 1,200.00	$ 15,600
10	Tree Decking	4	LS	$ 15,000.00	$ 60,000
11	Saw Cut Pavement Edges	8000	LF	$ 2.00	$ 16,000
12	Earthwork for Path	1750	CY	$ 25.00	$ 43,750
13	Graded Ditch/Swale	1000	LF	$ 55.00	$ 55,000
14	Class 2 Aggregate Base	4256	TON	$ 45.00	$ 191,520
15	Hot Mix Asphalt (Type A)	6720	TON	$ 115.00	$ 772,800
16	Hot Mix Asphalt Dike	8000	LF	$ 25.00	$ 200,000
17	ADA Curb Ramp	16	EA	$ 3,500.00	$ 56,000
18	Driveway Conform	20	EA	$ 10,000.00	$ 200,000
19	Driveways	60	EA	$ 5,000.00	$ 300,000
20	Minor Concrete (Retaining Wall)	1000	LF	$ 140.00	$ 140,000
21	Headwall	1	LS	$ 14,000.00	$ 14,000
22	Transition Ramps	4	EA	$ 2,500.00	$ 10,000
23	Guard Rail Replacement	1	LS	$ 18,000.00	$ 18,000
24	C.3 Provisions and Drainage Modifications	1	LS	$ 100,000.00	$ 100,000
25	Sign Relocation	1	LS	$ 3,500.00	$ 3,500
26	No Parking Sign (R-26)	5	EA	$ 350.00	$ 1,750
27	Speed Feeback Sign	2	EA	$ 13,000.00	$ 26,000
28	Thermoplastic Traffic Stripe - Det. 27B, Right Edge Line	8000	LF	$ 4.00	$ 32,000
29	Mobilization	1	LS	$ 281,000.00	$ 281,000

OTHER COSTS BY PHASE:

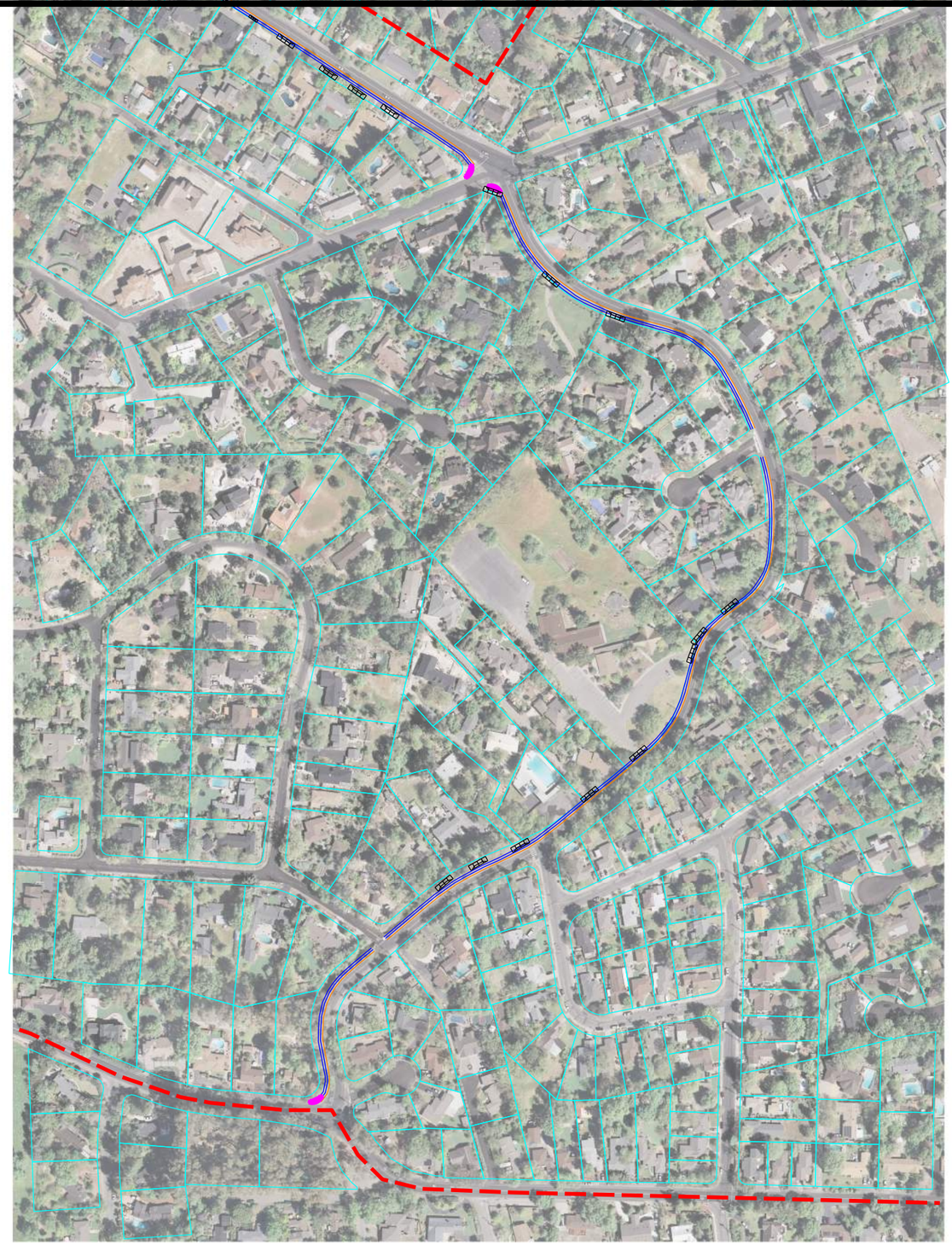
PLAN	Planning Engineering (TE)	$ 150,000
PE	Preliminary Engineering (Design/Survey)*	$ 710,000
	Utility Coordination (Design)	$ 50,000
	Environmental (Environmental, Real Property)	$ 100,000
R/W	R/W Engineering (Survey)	$ 50,000
	Real Property Labor	$ 120,000
	R/W Acquisition	$ 2,500,000
CON	Construction Engineering *	$ 463,000
	Environmental Monitoring and Mitigation Fees	$ 50,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 4,193,000

CONTRACT ITEMS	$ 3,086,000
OTHER COSTS (CON)	$ 513,000
CONTINGENCY*	$ 463,000
SUBTOTAL (CON)	$ 4,062,000
SUBTOTAL (PLAN)	$ 150,000
SUBTOTAL (PE)	$ 860,000
SUBTOTAL (R/W)	$ 2,670,000
GRAND TOTAL	$ 7,742,000
CURRENT YEAR	2015
ESCALATION YEAR	2021
ESCALATION RATE	17.3%
➢ **TOTAL (in 2021 dollars)**	**$ 9,079,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)



LEGEND:

- PEDESTRIAN PATH
- CONC. CURB RAMP
- DRIVEWAY CONFORM
- RIGHT OF WAY LINE/PARCEL LINE
- COUNTY LIMITS
- EXISTING OR PROPOSED SHOULDER

N

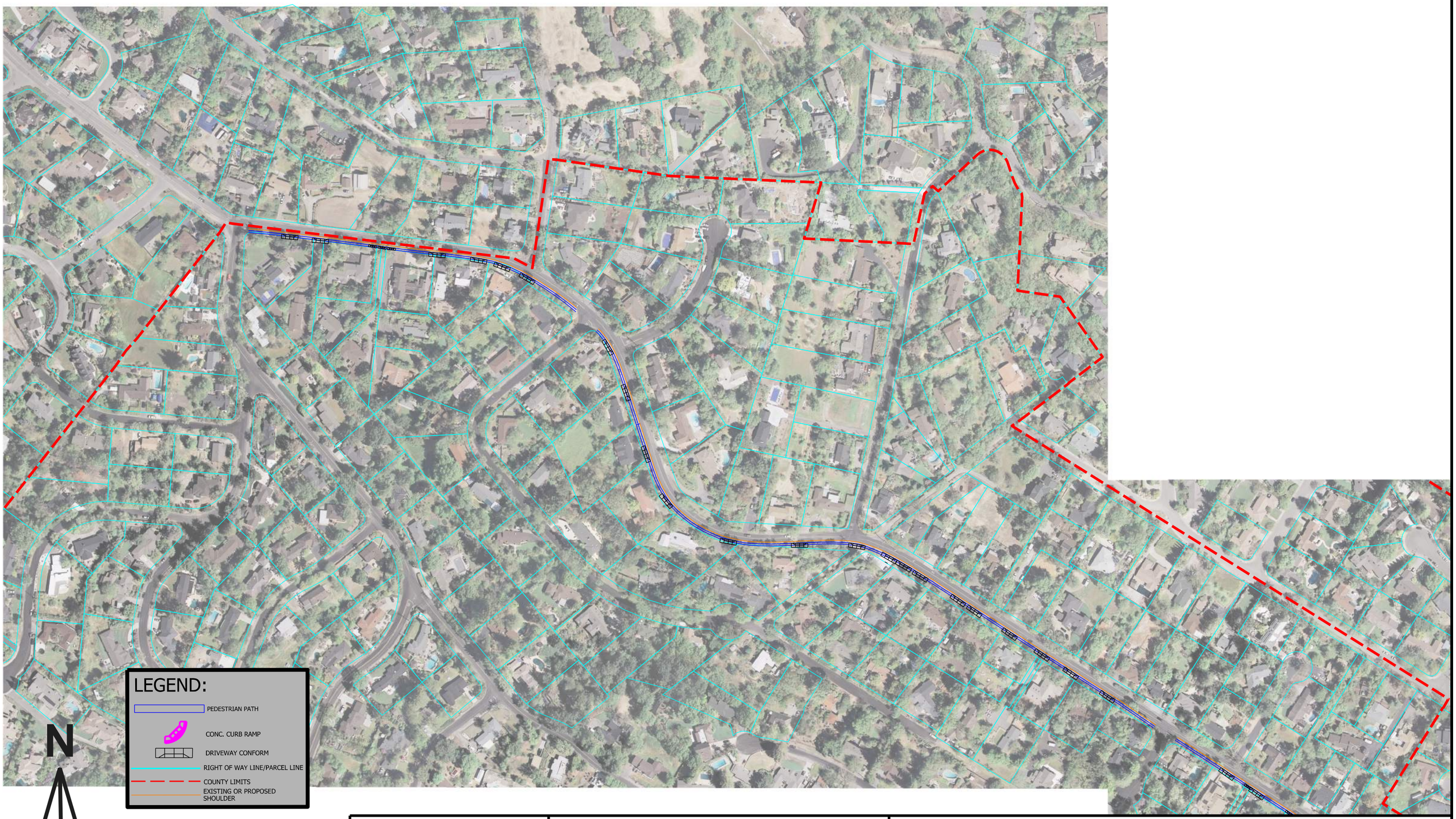
SCALE: 1" = 200'

Contra Costa County
Public Works Department
255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

SAN MIGUEL DR PEDESTRIAN PROJECT

FEDERAL ID NO.: | DB: TC CB: MH | DATE: OCT 2015 | SHEET 1 OF 2



SCALE: 1" = 160'

Contra Costa County
Public Works Department
255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

SAN MIGUEL DR PEDESTRIAN PROJECT

FEDERAL ID NO.:

DB: TC CB: MH

DATE: OCT 2015

Appendix B

Cost Estimates for Selected Projects in Central County AOB

DKS Associates | **Planning Cost Estimate**

1970 Broadway Ste 740, Oakland CA 94612 **Project Number** **WPH2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Pleasant Hill Road Pedestrian and Bicycle Improvements
Project Location: Pleasant Hill Road from Geary Road to Taylor Boulevard

Description Project would install curb/gutter and prohibit curbside parking to install buffered bicycle lanes using the existing and new pavement on both sides of the roadway. New 5' sidewalks would be constructed along both sides of the roadway. Several feet of right of way would need to be acquired from four properties on the north side: 169-070-054, 169-070-055, 169-070-049, 169-070-009.

Project Length (ft): Approximately 1760' of bike lane with 2 foot buffer, sidewalk, curb, and gutter and 600' of curb/gutter only on the north side
Approximately 2190' of bike lane with 2 foot buffer, sidewalk, curb, and gutter on the south side

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	27650	SF	$2.00	$ 55,300
2	Class 2 Aggregate Base	2048	CY	$65.00	$ 133,130
3	Sidewalk	27650	SF	$8.00	$ 221,200
4	Striping	9100	LF	$3.00	$ 27,300
5	Install curb & gutter	9100	LF	$35.00	$ 318,500
6	Signage	1	LS	$1,000.00	$ 1,000
7	ADA curb ramp (w/ detectable warning surface)	10	EA	$4,200.00	$ 42,000
8	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
9	Temporary traffic control	1	LS	$79,800.00	$ 79,800
10	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
11	Mobilization	1	LS	$ 91,400.00	$ 91,400

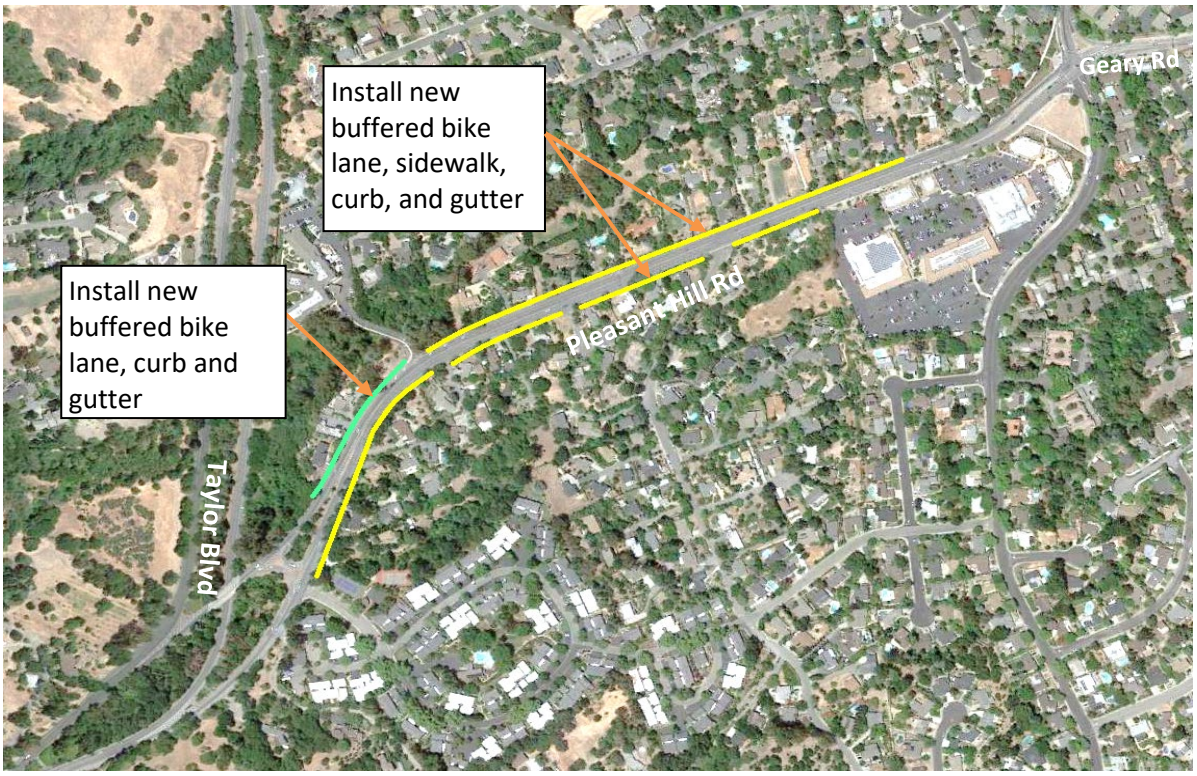
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 914,000

Project Number **WPH2**

Planning Engineering (TE)	$ 138,000	Contract Items	$ 1,005,400
Preliminary Engineering (Design/Survey)*	$ 403,000	Other Costs (CON)	$ 151,000
Utility Coordination (Design)	$ 80,000	Contingency*	$ 151,000
Environmental (Environmental, Real Property)	$ 100,000	Subtotal (Contract Items)	$ 1,307,400
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 138,000
Real Property Labor	$ 120,000	Subtotal (PE)	$ 583,000
R/W Acquisition	$ 150,000	Subtotal (R/W)	$ 320,000
Construction Engineering *	$ 151,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 1,192,000		
		Grand Total	$ 2,348,400
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 2,754,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project WPH2: Pleasant Hill Road Pedestrian and Bicycle Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **WPH3**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Reliez Valley Road Bicycle Improvements
Project Location: Reliez Valley Road from Withers Avenue to Grayson Road

Description

Project would construct two 5-foot bike lanes to enhance vehicle and bicyclist safety. From Withers Avenue to Gloria Terrace, the 25-foot cross section would be widened to 35-feet on the east side of the roadway (requiring major drainage modifications). From Gloria Terrace to 350-feet north of Stagecoach Drive, the 40-foot cross section would generally be restriped to provide bike lanes. In proximity to Stagecoach Drive, however, the presence of left turn pockets would force the elimination of on-street parking on the east side of the roadway to fit in the bike lanes. From north of Stagecoach Drive to Grayson Road, the 25-foot cross section would be widened to 35-feet on the east side of the roadway (requiring major drainage modifications and earthwork/retaining wall).

Project Length (ft): 4500

Date of Estimate: Aug. 28, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B . Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1. Withers Avenue to Gloria Terrace (L=775')					
1	Clearing and grubbing	7750	SF	$2.00	$ 15,500
2	Earthwork	7750	SF	$4.00	$ 31,000
3	Class 2 Aggregate Base	574	CY	$65.00	$ 37,315
4	Hot Mix Asphalt (Type A)	256	Ton	$125.00	$ 31,969
5	Curb & gutter	775	LF	$35.00	$ 27,125
6	Restripe roadway	775	LF	$10.00	$ 7,750
7	Misc. drainage modifications	1	LS	$45,200.00	$ 45,200
				1. Subtotal:	$ 195,859
2. Gloria Terrace to 350' north of Stagecoach Drive (L=950')					
8	Restripe roadway	950	LF	$10.00	$ 9,500
				2. Subtotal:	$ 258,309
3. 350' north of Stagecoach Drive to (L=2775')					
9	Clearing and grubbing	27750	SF	$2.00	$ 55,500
10	Earthwork	27750	SF	$6.00	$ 166,500
11	Class 2 Aggregate Base	2056	CY	$65.00	$ 133,611
12	Hot Mix Asphalt (Type A)	916	Ton	$125.00	$ 114,469
13	Sidewalk	12500	SF	$8.00	$ 100,000
14	Curb & gutter	2775	LF	$35.00	$ 97,125
15	Restripe roadway	2775	LF	$10.00	$ 27,750
16	Retaining wall	3920	SF	$85.00	$ 333,200
17	Misc. drainage modifications	1	LS	$208,500.00	$ 208,500
				3. Subtotal:	$ 1,504,463
18	Signage	1	LS	$2,500.00	$ 2,500
19	Temporary traffic control	1	LS	$195,900.00	$ 195,900
20	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
21	Mobilization	1	LS	$ 216,300.00	$ 216,300

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,163,000

Project Number **WPH3**

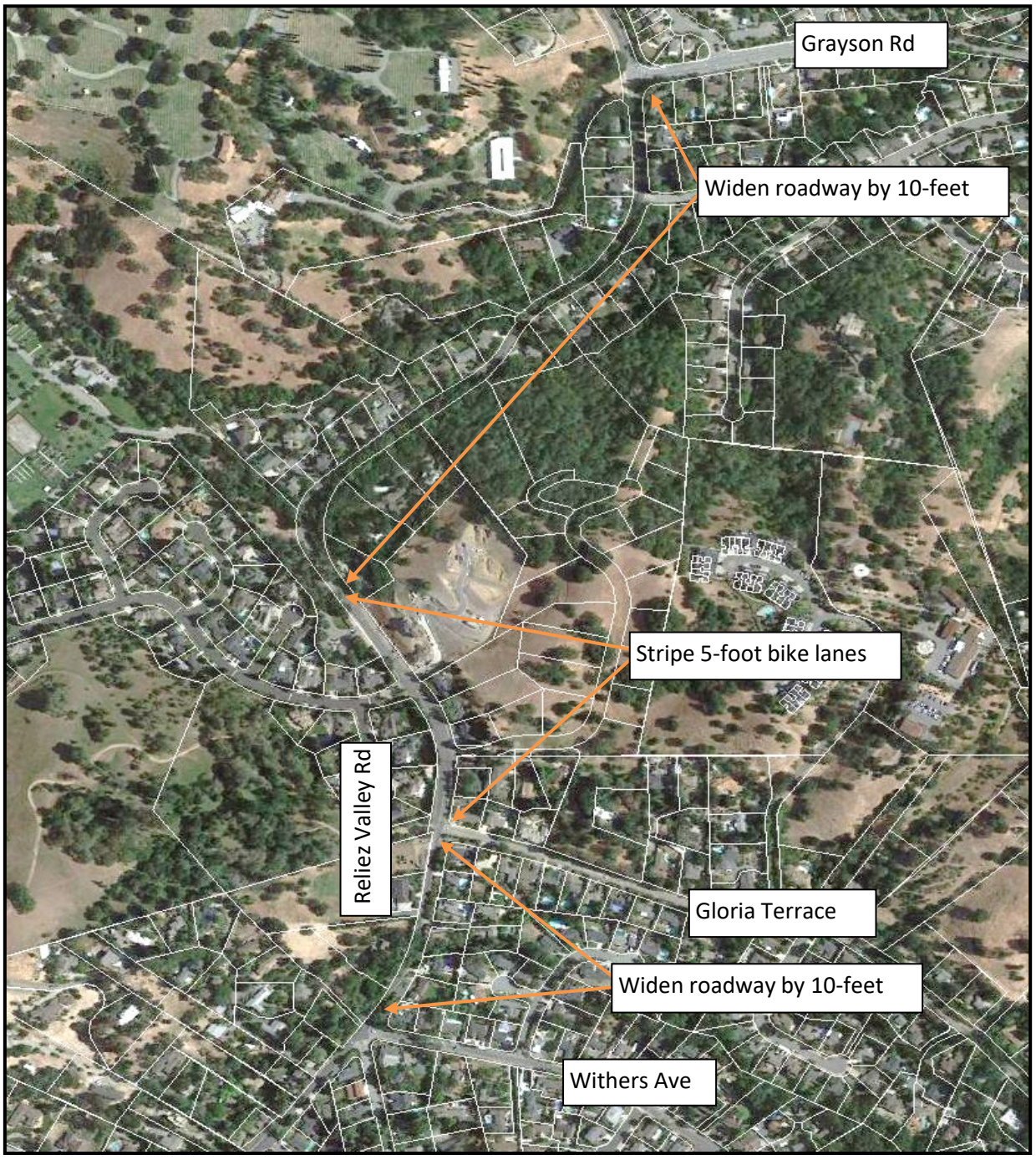
Planning Engineering (TE)	$	368,000	Contract Items	$	2,379,300
Preliminary Engineering (Design/Survey)*	$	952,000	Other Costs (CON)	$	357,000
Utility Coordination (Design)	$	120,000	Contingency*	$	595,000
Environmental (Environmental, Real Property)	$	150,000	Subtotal (Contract Items)	$	3,331,300
R/W Engineering (Survey)	$	75,000	Subtotal (Plan)	$	368,000
Real Property Labor	$	150,000	Subtotal (PE)	$	1,222,000
R/W Acquisition/ Temp. Construction Easements	$	1,065,000	Subtotal (R/W)	$	1,290,000
Construction Engineering *	$	357,000			
Environmental Monitoring and Mitigation Fees	$	-			
SUBTOTAL of OTHER COSTS (ALL)	$	3,237,000			
			Grand Total	$	6,211,300
			Current Year		2015
			Escalation Year		2021
			Escalation Factor		17.3%
			➢ **TOTAL (in 2021 dollars)**	**$**	**7,284,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project WPH3: Reliez Valley Road Bicycle Improvements



Transportation Engineering

Contra Costa County Public Works Department

Planning Cost Estimate

WPH 4

Project Name: Taylor Boulevard/ Gloria Terrace Intersection Improvements

Alternative:

Project Location: Taylor Boulevard/ Gloria Terrace

Assumptions: R=5, TI=9

Project Length (ft): 825

Date of Estimate: Aug. 28, 2017

Prepared by: Connor Phippen

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	6	EA	$ 400.00	$ 2,400
2	Traffic Control System	1	LS	$ 20,000.00	$ 20,000
3	Prepare Water Pollution Control Plan	1	LS	$ 2,000.00	$ 2,000
4	Remove Thermoplastic Traffic Stripe	550	LF	$ 1.20	$ 660
5	Structural Concrete (Retaining Wall)	355	CY	$ 1,500.00	$ 532,500
6	Bar Reinforcing Steel (Retaining Wall)	22025	LB	$ 2.00	$ 44,050
7	Slope Excavation	831	CY	$ 100.00	$ 83,100
8	Remove Curb	725	LF	$ 10.00	$ 7,250
9	Install S1-6 Curb	725	LF	$ 50.00	$ 36,250
10	Bike Lane Symbol Pavement Marking	2	EA	$ 180.00	$ 360
11	Type I Arrow Striping	2	EA	$ 250.00	$ 500
12	Remove Pavement	825	SF	$ 0.24	$ 198
13	Clearing and Grubbing	1	LS	$ 5,000.00	$ 5,000
14	Remove Tree	8	EA	$ 2,000.00	$ 16,000
15	Saw Cut Pavement Edges	825	LF	$ 1.50	$ 1,238
16	Roadway Excavation	746	CY	$ 170.00	$ 126,820
17	Imported Material (Shoulder Backing)	52	TON	$ 200.00	$ 10,400
18	Class 2 Aggregate Base	1097	TON	$ 40.00	$ 43,880
19	Hot Mix Asphalt (Type A)	1454	TON	$ 170.00	$ 247,180
20	4-Strand Wire Fence Relocation	0	LF	$ -	$ -
21	Thermoplastic Detail 27B	1200	LF	$ 0.60	$ 720

OTHER COSTS BY PHASE:

PLAN	Planning Engineering (TE)	$ 80,000
PE	Preliminary Engineering (Design/Survey)*	$ 200,000
	Utility Coordination (Design)	$ 15,000
	Environmental (Environmental, Real Property)	$ 100,000
R/W	R/W Engineering (Survey)	$ 40,000
	Real Property Labor	$ -
	R/W Acquisition	$ -
CON	Construction Engineering *	$ 195,000
	Environmental Monitoring and Mitigation Fees	$ 10,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 640,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000)	$ 1,181,000
CONTRACT ITEMS	$ 1,300,000
OTHER COSTS (CON)	$ 205,000
CONTINGENCY*	$ 195,000
SUBTOTAL (CON)	$ 1,700,000
SUBTOTAL (PLAN)	$ 80,000
SUBTOTAL (PE)	$ 315,000
SUBTOTAL (R/W)	$ 40,000
GRAND TOTAL	$ 2,135,000
CURRENT YEAR	2015
ESCALATION YEAR	2021
ESCALATION RATE	17.3%
➢ **TOTAL (in 2021 dollars)**	**$ 2,504,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **NL1**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Fish Ranch Road Safety Improvements

Project Location: Fish Ranch Road from SR-24 to Grizzly Peak Road

Description

The project will enhance vehicle and bicycle safety by widening Fish Ranch Road to provide shoulders in accordance with County standards. Additional right-of-way will be required to accommodate drainage.

Project Length (ft): 3650

Date of Estimate: Aug. 28, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	36500	SF	$8.00	$ 292,000
2	Class 2 Aggregate Base	2704	CY	$65.00	$ 175,741
3	Hot Mix Asphalt (Type A)	1205	Ton	$125.00	$ 150,563
4	Striping	7300	LF	$3.00	$ 21,900
5	Clearing and grubbing	1	LS	$100,000.00	$ 100,000
6	Retaining wall	9000	SF	$85.00	$ 765,000
7	Misc. drainage modifications	1	LS	$111,000.00	$ 111,000
8	Temporary traffic control	1	LS	$74,000.00	$ 74,000
9	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
10	Mobilization	1	LS	$ 169,600.00	$ 169,600

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,696,000

Project Number **NL1**

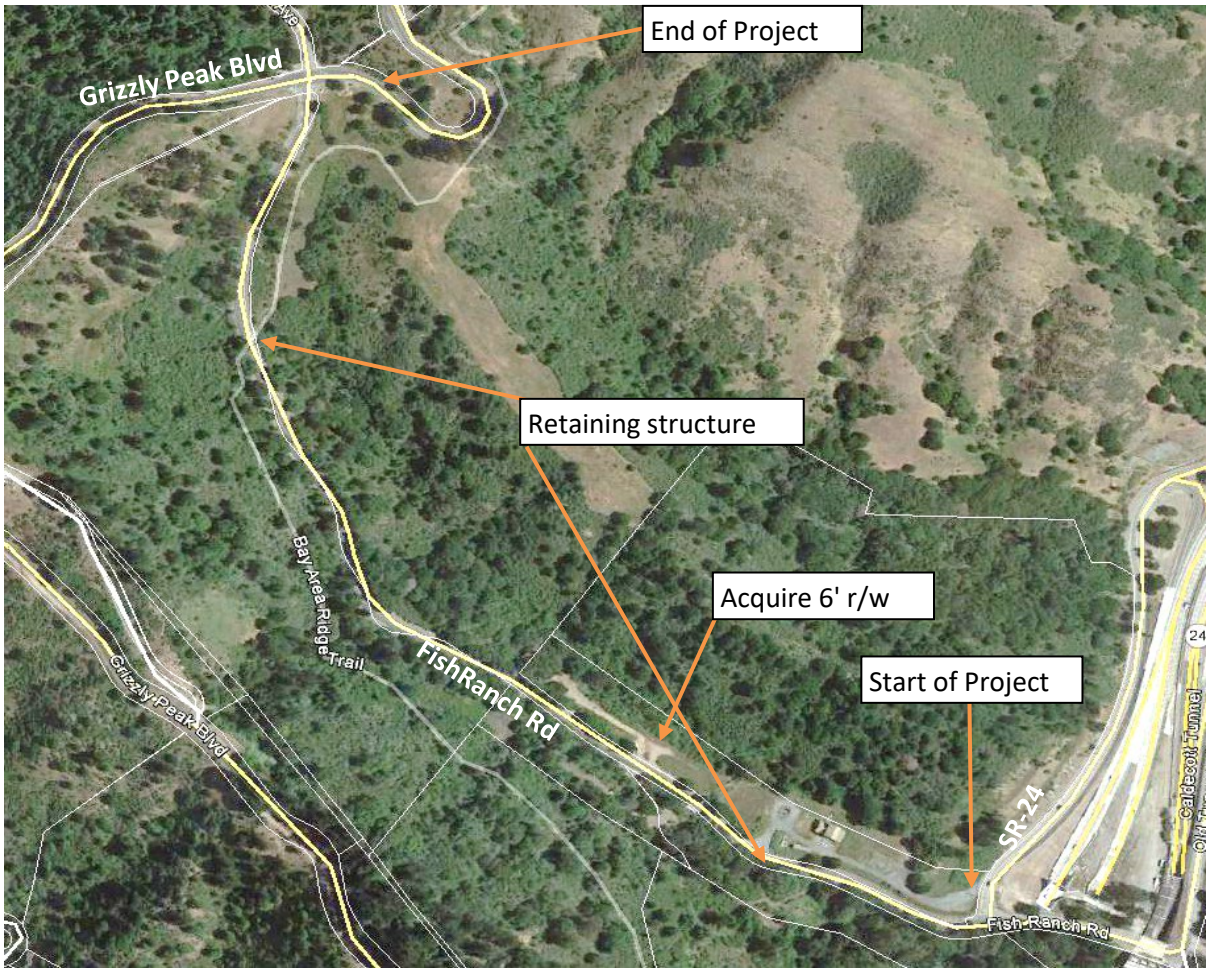
Planning Engineering (TE)	$ 255,000	Contract Items	$ 1,865,600
Preliminary Engineering (Design/Survey)*	$ 747,000	Other Costs (CON)	$ 280,000
Utility Coordination (Design)	$ 80,000	Contingency*	$ 467,000
Environmental (Environmental, Real Property)	$ 1,050,000	Subtotal (Contract Items)	$ 2,612,600
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 255,000
Real Property Labor	$ 75,000	Subtotal (PE)	$ 1,877,000
R/W Acquisition	$ 91,800	Subtotal (R/W)	$ 216,800
Construction Engineering *	$ 280,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 2,628,800		
		Grand Total	$ 4,961,400
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 5,818,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project NL1: Fish Ranch Road Safety Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **NL2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: San Pablo Dam Road Safety Improvements

Project Location: San Pablo Dam Rd from Camino Pablo to west of Old San Pablo Dam Rd (Central AOB Boundary)

Description

The project will enhance safety by widening and converting the roadway to a fully divided highway with bicycle improvements. The project is assumed to construct a median with concrete curb, where it doesn't already exist, and install rumble strips.

Project Length (ft): 5740

Date of Estimate: Aug. 28, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1. Bear Creek Road to start of existing median (L=1400')					
1	Clearing and grubbing	9225	SF	$3.00	$ 27,675
2	Earthwork	9225	SF	$8.00	$ 73,800
3	Class 2 Aggregate Base	683	CY	$65.00	$ 44,417
4	Hot Mix Asphalt (Type A)	304	Ton	$125.00	$ 38,053
5	Retaining wall	3500	SF	$85.00	$ 297,500
6	Install concrete median barrier	1400	LF	$75.00	$ 105,000
7	Install rumble strips (both shoulders)	2800	LF	$0.60	$ 1,680
8	Striping	5600	LF	$3.00	$ 16,800
9	Misc. drainage modifications	1	LS	$90,700.00	$ 90,700
				1. Subtotal:	$ 695,625
2. Start of Existing Median to Old San Pablo Dam Road (L=750')					
10	Clearing and grubbing	6000	SF	$3.00	$ 18,000
11	Earthwork	6000	SF	$8.00	$ 48,000
12	Class 2 Aggregate Base	444	CY	$65.00	$ 28,889
13	Hot Mix Asphalt (Type A)	198	Ton	$125.00	$ 24,750
14	Retaining wall	1750	SF	$85.00	$ 148,750
15	Remove existing median	750	LF	$15.00	$ 11,250
16	Install concrete median barrier	750	LF	$75.00	$ 56,250
17	Install rumble strips (both shoulders)	1500	LF	$0.60	$ 900
18	Striping	3000	LF	$3.00	$ 9,000
19	Misc. drainage modifications	1	LS	$51,900.00	$ 51,900
				2. Subtotal:	$ 397,689
3. Old San Pablo Dam Road to End of Existing Median (L=580')					
20	Clearing and grubbing	2400	LS	$3.00	$ 7,200
21	Earthwork	2400	SF	$8.00	$ 19,200
22	Class 2 Aggregate Base	178	CY	$65.00	$ 11,556
23	Hot Mix Asphalt (Type A)	79	Ton	$125.00	$ 9,900
24	Retaining wall	1500	SF	$85.00	$ 127,500
25	Remove existing median	300	LF	$15.00	$ 4,500
26	Install concrete median barrier	300	LF	$75.00	$ 22,500
27	Install rumble strips (both shoulders)	1160	LF	$0.60	$ 696
28	Striping	1760	LF	$3.00	$ 5,280
29	Misc. drainage modifications	1	LS	$31,200.00	$ 31,200
				3. Subtotal:	$ 239,532

4. End of Existing Median to AOB Boundary (L=2910')						
30	Clearing and grubbing	17460	LS	$3.00	$	52,380
31	Earthwork	17460	SF	$4.00	$	69,840
32	Class 2 Aggregate Base	1293	CY	$65.00	$	84,067
33	Hot Mix Asphalt (Type A)	576	Ton	$125.00	$	72,023
34	Retaining wall	4000	SF	$85.00	$	340,000
35	Install concrete median barrier	2910	LF	$75.00	$	218,250
36	Install rumble strips (both shoulders)	5820	LF	$0.60	$	3,492
37	Striping	8730	LF	$3.00	$	26,190
38	Misc. drainage modifications	1	LS	$129,900.00	$	129,900
				4. Subtotal:	$	996,141
39	Signage	1	LS	$2,000.00	$	2,000
40	Temporary traffic control	1	LS	$58,200.00	$	58,200
41	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$	6,000
42	Mobilization	1	LS	$ 239,500.00	$	239,500

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,395,000

Project Number **NL2**

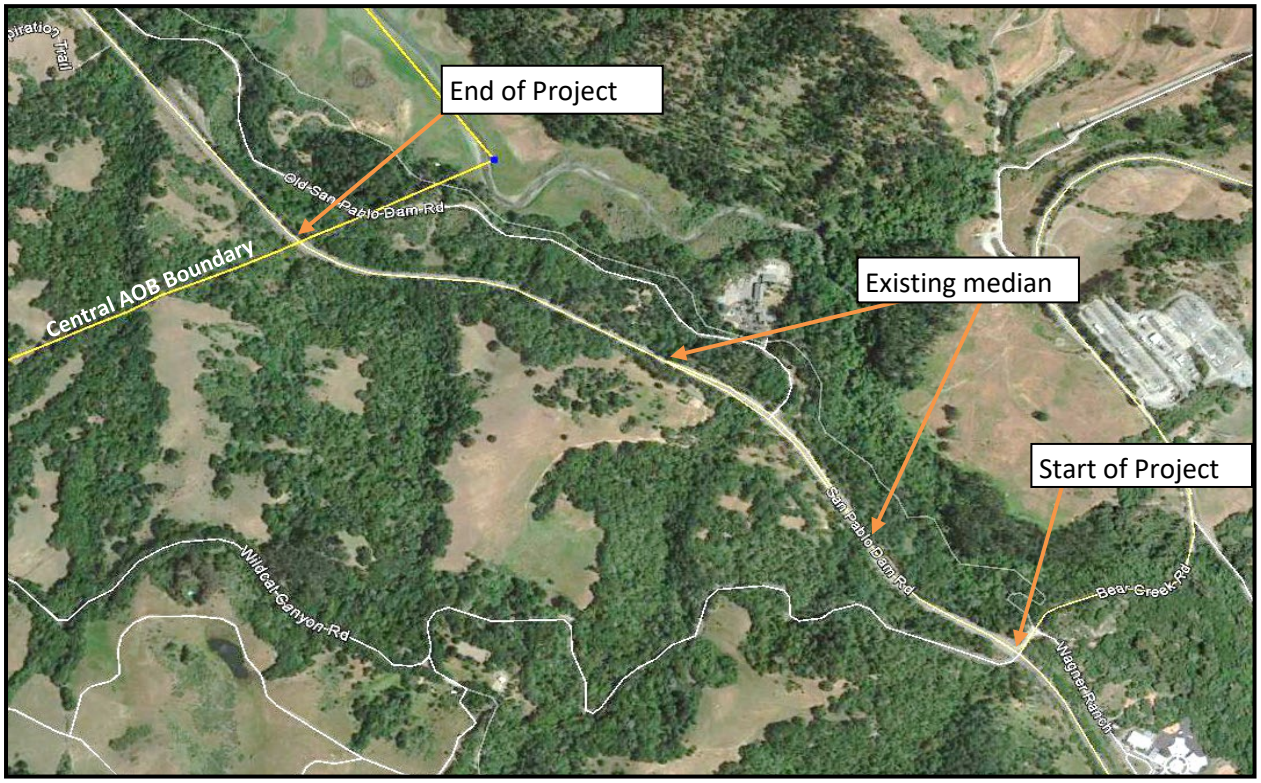
Planning Engineering (TE)	$ 360,000	Contract Items	$ 2,634,500
Preliminary Engineering (Design/Survey)*	$ 659,000	Other Costs (CON)	$ 396,000
Utility Coordination (Design)	$ 60,000	Contingency*	$ 659,000
Environmental (Environmental, Real Property)	$ 410,000	Subtotal (Contract Items)	$ 3,689,500
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 360,000
Real Property Labor	$ -	Subtotal (PE)	$ 1,129,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 396,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 1,885,000		
		Grand Total	$ 5,178,500
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 6,073,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project NL2: San Pablo Dam Road Safety Improvements



DKS Associates — **Planning Cost Estimate**

1970 Broadway Ste 740, Oakland CA 94612 — **Project Number** **NL5**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Bear Creek Road/Happy Valley Road Intersection Safety Improvements

Project Location: Bear Creek Road and Happy Valley Road

Description

Project will implement all-way stop control (AWSC) at the intersection. Enhanced conspicuity stop signs are recommended for the approaches that are currently uncontrolled.

Project Length (ft): N/A

Date of Estimate: Aug. 28, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Install R1-1 Sign with enhanced conspicuity	1	EA	$ 500.00	$ 500
2	Stripe new pavement legends	1	LS	$ 1,000.00	$ 1,000
3	Mobilization	1	LS	$ 200.00	$ 200

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,000

Project Number **NL5**

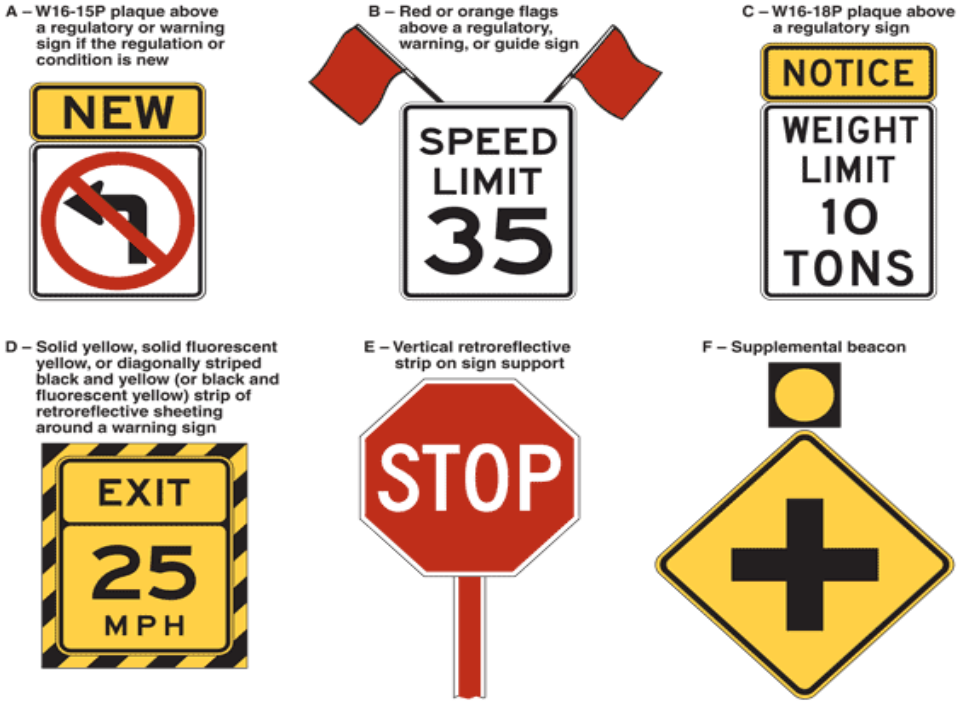
Planning Engineering (TE)	$ -	Contract Items	$ 2,200
Preliminary Engineering (Design/Survey)*	$ 15,000	Other Costs (CON)	$ -
Utility Coordination (Design)	$ -	Contingency*	$ 1,000
Environmental (Environmental, Real Property)	$ -	Subtotal (Contract Items)	$ 3,200
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ -
Real Property Labor	$ -	Subtotal (PE)	$ 15,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ -		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 15,000		
		Grand Total	$ 18,200
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 21,000**

* CONTINGENCY is 15% of contract items.

Project NL5: Bear Creek Road/Happy Valley Road Intersection Safety Improvements

R1-1

Figure 2A-1. Examples of Enhanced Conspicuity for Signs



DKS Associates — Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612 **Project Number** **SL1**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Pinehurst Road and Canyon Road Bicycle Improvements
Project Location: Canyon Road from the Lafayette/Moraga Regional Trail to Pinehurst Road and Pinehurst Road from Canyon Road to the Alameda County line

Description

The project will construct bike turnouts/rest stops every half-mile (on each side of the road) along a large portion of Canyon Road and Pinehurst Road. The turnouts would be staggered such that there is one every quarter mile (looking at both sides of the road). Widening the roadway shoulders to add bike lanes was considered, but decided infeasible due to environmental concerns over the protected watershed.

Project Length (ft): 3380 feet (on Canyon Road); 20750 feet (on Pinehurst Road)

Date of Estimate: Sep. 2, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
Estimated Cost per Bike Rest Area/Turnout					
A	Clearing and grubbing	1	LS	$2,500.00	$ 2,500
B	Earthwork	320	SF	$10.00	$ 3,200
C	Class 2 Aggregate Base	24	CY	$65.00	$ 1,541
D	Hot Mix Asphalt (Type A)	11	Ton	$125.00	$ 1,320
E	Retaining wall	56	LF	$250.00	$ 14,000
F	Striping	1	LS	$1,000.00	$ 1,000
G	Signage	1	LS	$1,000.00	$ 1,000
H	Misc. drainage modifications	1	LS	$7,400.00	$ 7,400
				Subtotal Per Turnout:	$ 31,960
Canyon Road (2 turnouts) and Pinehurst Road (15 bike turnouts)					
1	Canyon Road Bike Turnouts	2	EA	$ 31,960	$ 63,920
2	Pinehurst Road Bike Turnouts	15	EA	$ 31,960	$ 479,400
3	Temporary traffic control	1	LS	$54,300.00	$ 54,300
4	Prepare Water Pollution Control Plan	1	LS	$12,000.00	$ 12,000
5	Environmental Monitoring and Mitigation	1	LS	$25,000.00	$ 25,000
6	Mobilization and re-mobilization	1	LS	$ 127,000.00	$ 127,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 635,000

Project Number **SL1**

Planning Engineering (TE)	$ 100,000	Contract Items	$ 762,000
Preliminary Engineering (Design/Survey)*	$ 305,000	Other Costs (CON)	$ 115,000
Utility Coordination (Design)	$ 50,000	Contingency*	$ 191,000
Environmental (Environmental, Real Property)	$ 160,000	Subtotal (Contract Items)	$ 1,068,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 100,000
Real Property Labor	$ -	Subtotal (PE)	$ 515,000
R/W Acquisition/ Temp. Construction Easements	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 115,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 730,000		
		Grand Total	$ 1,683,000
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 1,974,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project SL1: Pinehurst Road and Canyon Road Bicycle Improvements

DKS Associates — Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612 **Project Number** **EC2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Ayers Road/Concord Boulevard Intersection Improvements
Project Location: Ayers Road and Concord Boulevard

Description Project would add a southbound right turn lane to address an LOS deficiency. Some right of way would be needed. Sidewalk will need to be realigned at the northwest corner of the intersection.

Project Length (ft): 75

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	1275	SF	$2.00	$ 2,550
2	Class 2 Aggregate Base	94	CY	$65.00	$ 6,139
3	Hot Mix Asphalt (Type A)	53	Ton	$125.00	$ 6,574
4	Sidewalk	1275	SF	$8.00	$ 10,200
5	ADA curb ramp (w/ detectable warning surface)	1	EA	$4,200.00	$ 4,200
6	Traffic signal modification (one quadrant)	1	LS	$100,000.00	$ 100,000
7	Restripe intersection approach	1	LS	$2,500.00	$ 2,500
8	Install curb & gutter	75	LF	$35.00	$ 2,625
9	Signage	1	LS	$1,000.00	$ 1,000
10	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
11	Temporary traffic control	1	LS	$13,600.00	$ 13,600
12	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
13	Mobilization	1	LS	$ 18,500.00	$ 18,500

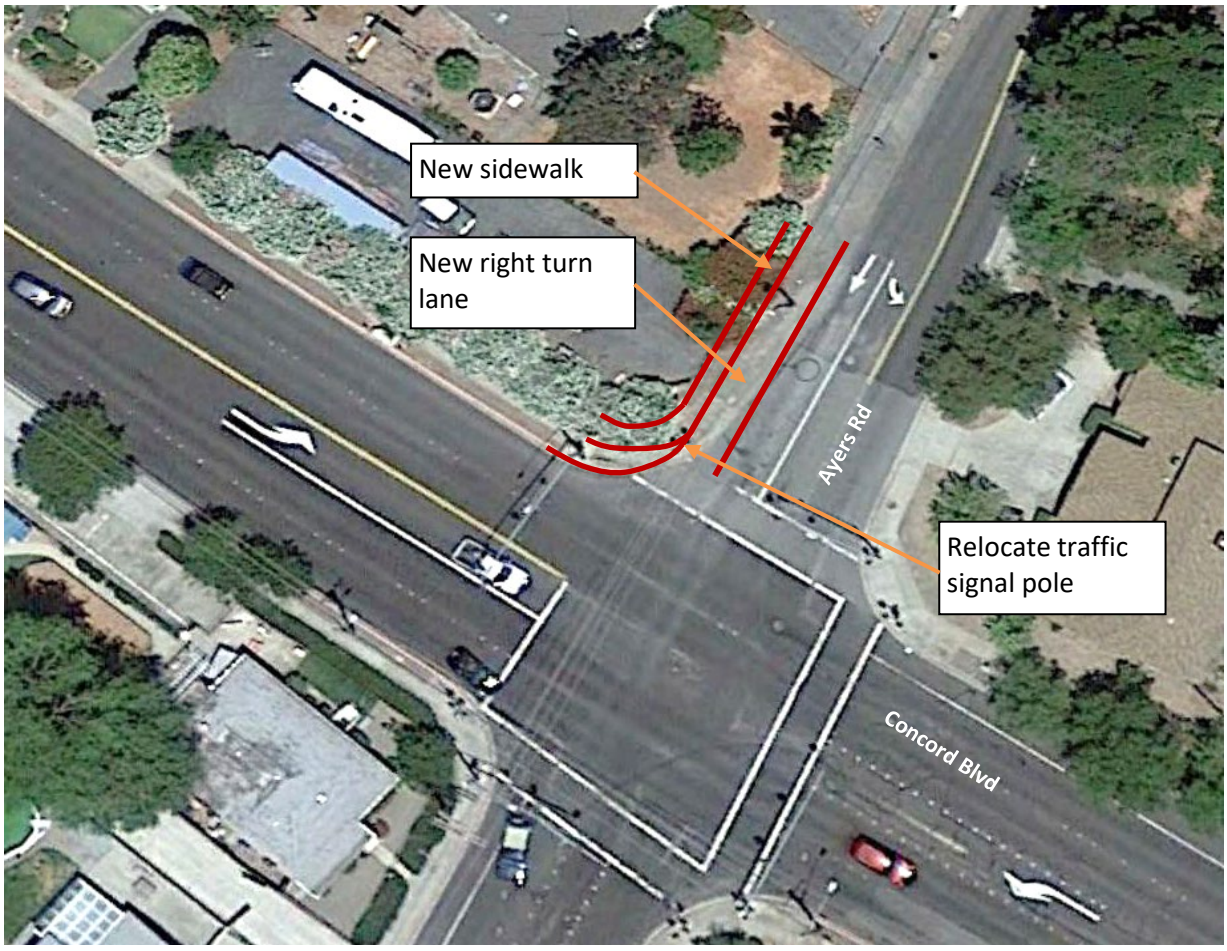
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 185,000

Project Number **EC2**

Planning Engineering (TE)	$ 30,000	Contract Items	$ 203,500
Preliminary Engineering (Design/Survey)*	$ 100,000	Other Costs (CON)	$ 41,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 31,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 275,500
R/W Engineering (Survey)	$ 30,000	Subtotal (Plan)	$ 30,000
Real Property Labor	$ 50,000	Subtotal (PE)	$ 160,000
R/W Acquisition	$ 18,150	Subtotal (R/W)	$ 98,150
Construction Engineering *	$ 41,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 329,150		
		Grand Total	$ 563,650
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 661,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project EC2: Ayers Road/Concord Boulevard Intersection Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **EC3**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Ayers Road/Laurel Drive Intersection Safety Improvements

Project Location: Ayers Road & Laurel Drive

Description Project will widen the Ayers Road approach to the intersection with Laurel Drive, install new curb, gutter, sidewalk, and ADA curb ramps, and install a traffic signal.

Project Length (ft): N/A

Date of Estimate: Aug. 28, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	4	EA	$ 100,000.00	$ 400,000
2	Earthwork	4350	SF	$8.00	$ 34,800
3	Class 2 Aggregate Base	322	CY	$65.00	$ 20,944
4	Hot Mix Asphalt (Type A)	144	Ton	$125.00	$ 17,944
5	Sidewalk	3010	SF	$ 8.00	$ 24,080
6	Install curb and gutter	430	LF	$ 35.00	$ 15,050
7	ADA curb ramp (w/ detectable warning surface)	8	EA	$ 4,200.00	$ 33,600
8	Removal of signs	1	LS	$ 500.00	$ 500
9	Sandblast existing pavement legends	1	LS	$ 1,000.00	$ 1,000
10	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
11	Restripe intersection approach	4	EA	$ 2,500.00	$ 10,000
12	Temporary traffic control	1	LS	$ 14,000.00	$ 14,000
13	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
14	Mobilization	1	LS	$ 58,000.00	$ 58,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 580,000

Project Number **EC3**

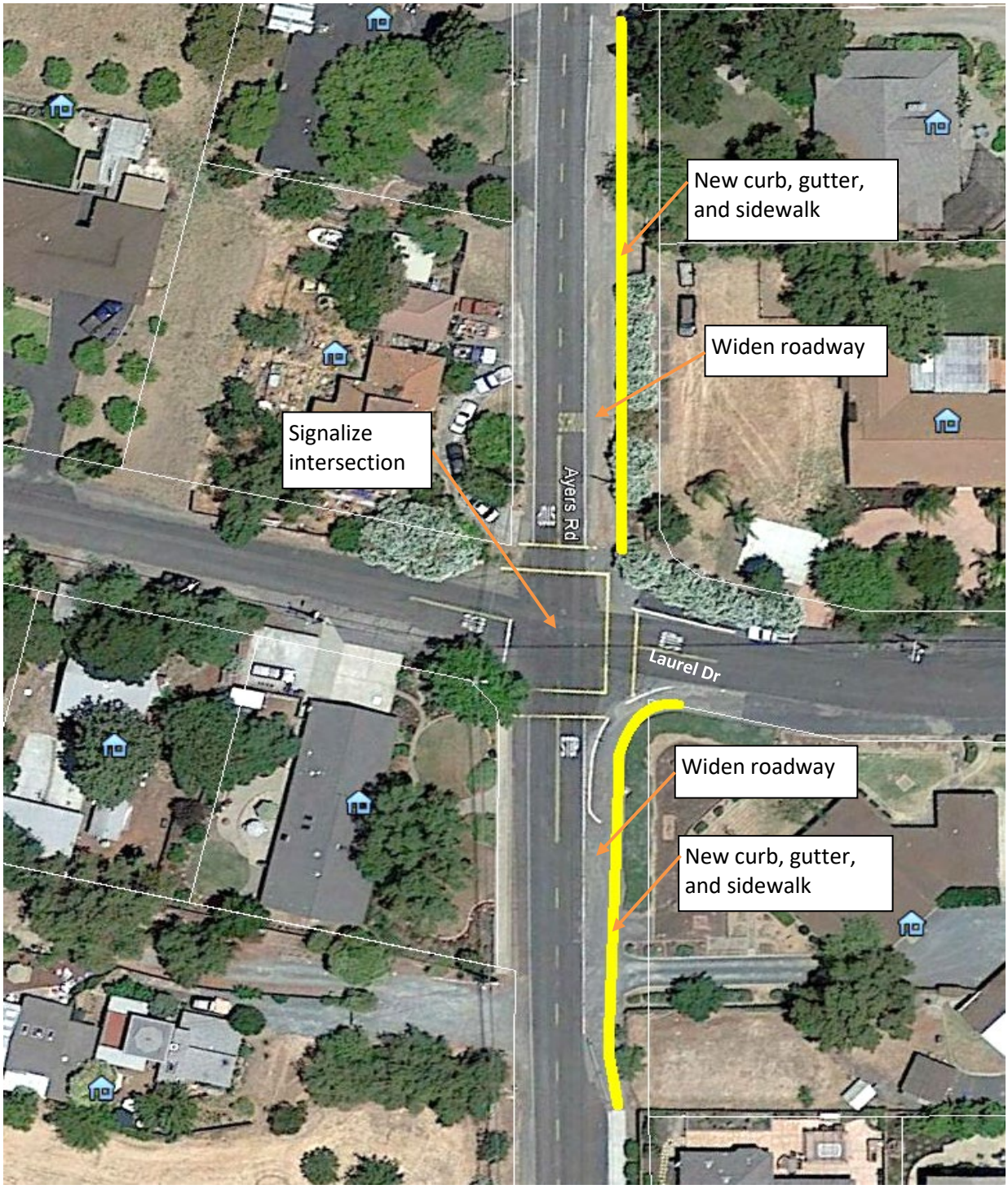
Planning Engineering (TE)	$ 87,000	Contract Items	$ 638,000
Preliminary Engineering (Design/Survey)*	$ 217,000	Other Costs (CON)	$ 96,000
Utility Coordination (Design)	$ 60,000	Contingency*	$ 96,000
Environmental (Environmental, Real Property)	$ 60,000	Subtotal (Contract Items)	$ 830,000
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 87,000
Real Property Labor	$ -	Subtotal (PE)	$ 337,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 96,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 520,000		
		Grand Total	$ 1,254,000
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 1,471,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project EC3: Ayers Road/Laurel Drive Intersection Safety Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **EC4**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Bailey Road/Myrtle Drive Intersection Improvements

Project Location: Bailey Road and Myrtle Drive

Description

Project would add a 200' southbound left turn bay to enhance intersection operations and safety. All of the widening would be on the west side. The southbound through lane would flare out at the intersection with a 90' taper. Some power poles would have to be relocated.

Project Length (ft): 380

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	3500	SF	$8.00	$ 28,000
2	Construct retaining wall	200	LF	$200.00	$ 40,000
3	Class 2 Aggregate Base	259	CY	$65.00	$ 16,852
4	Hot Mix Asphalt (Type A)	173	Ton	$125.00	$ 21,656
5	Striping	380	LF	$5.00	$ 1,900
6	Signage	1	LS	$1,500.00	$ 1,500
7	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
8	Temporary traffic control	1	LS	$11,000.00	$ 11,000
9	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
10	Mobilization	1	LS	$ 15,700.00	$ 15,700

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 157,000

Project Number **EC4**

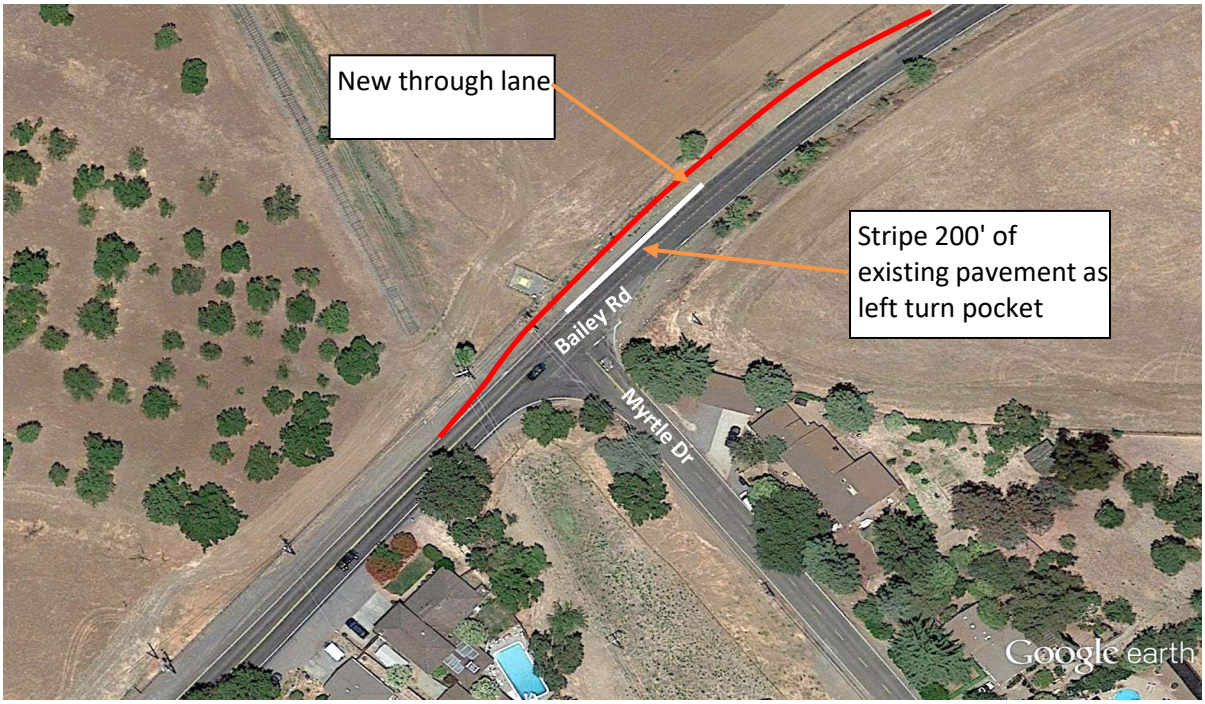
Planning Engineering (TE)	$ 100,000	Contract Items	$ 172,700
Preliminary Engineering (Design/Survey)*	$ 150,000	Other Costs (CON)	$ 35,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 26,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 233,700
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 100,000
Real Property Labor	$ -	Subtotal (PE)	$ 210,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 35,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 345,000		
		Grand Total	$ 543,700
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 638,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project EC4: Bailey Road/Myrtle Drive Intersection Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **EC6**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Bailey Road Shoulder

Project Location: Bailey Road from 290' north of Myrtle Drive to 300' south of Myrtle Drive

Description

Project would widen Bailey Road to add an 8' shoulder to enhance vehicle and bicycle safety. The earthwork and retaining wall costs that would be required north of Myrtle Drive are assumed as part of Project EC4.

Project Length (ft): 665

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Earthwork	5320	SF	$8.00	$ 42,560
2	Class 2 Aggregate Base	394	CY	$65.00	$ 25,615
3	Hot Mix Asphalt (Type A)	176	Ton	$125.00	$ 21,945
4	Striping	665	LF	$3.00	$ 1,995
5	Signage	1	LS	$1,500.00	$ 1,500
6	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
7	Temporary traffic control	1	LS	$9,400.00	$ 9,400
8	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
9	Mobilization	1	LS	$ 13,900.00	$ 13,900

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 139,000

Project Number **EC6**

Planning Engineering (TE)	$ 100,000	Contract Items	$ 152,900
Preliminary Engineering (Design/Survey)*	$ 150,000	Other Costs (CON)	$ 31,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 23,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 206,900
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 100,000
Real Property Labor	$ -	Subtotal (PE)	$ 210,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 31,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 341,000		
		Grand Total	$ 516,900
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 606,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project EC6: Bailey Road Shoulder

DKS Associates — **Planning Cost Estimate**

1970 Broadway Ste 740, Oakland CA 94612 — **Project Number** **CCC1**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Las Juntas Way/Coggins Drive Intersection Improvements

Project Location: Las Juntas Way and Coggins Drive

Description Project will signalize the intersection of Las Juntas Way and Coggins Drive.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting	4	EA	$ 75,000.00	$ 300,000
2	Removal of signs	1	LS	$ 500.00	$ 500
3	Sandblast existing pavement legends	1	LS	$ 1,000.00	$ 1,000
4	Thermoplastic striping for crosswalks	1	LS	$ 2,000.00	$ 2,000
5	Restripe intersection approach	4	EA	$ 2,500.00	$ 10,000
6	Temporary traffic control	1	LS	$ 8,000.00	$ 8,000
7	Prepare Water Pollution Control Plan	1	EA	$6,000.00	$ 6,000
8	Mobilization	1	LS	$ 32,800.00	$ 32,800

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 328,000

Project Number **CCC1**

Planning Engineering (TE)	$ 50,000
Preliminary Engineering (Design/Survey)*	$ 123,000
Utility Coordination (Design)	$ 40,000
Environmental (Environmental, Real Property)	$ 30,000
R/W Engineering (Survey)	$ -
Real Property Labor	$ -
R/W Acquisition	$ -
Construction Engineering *	$ 73,000
Environmental Monitoring and Mitigation Fees	$ -
SUBTOTAL of OTHER COSTS (ALL)	$ 316,000

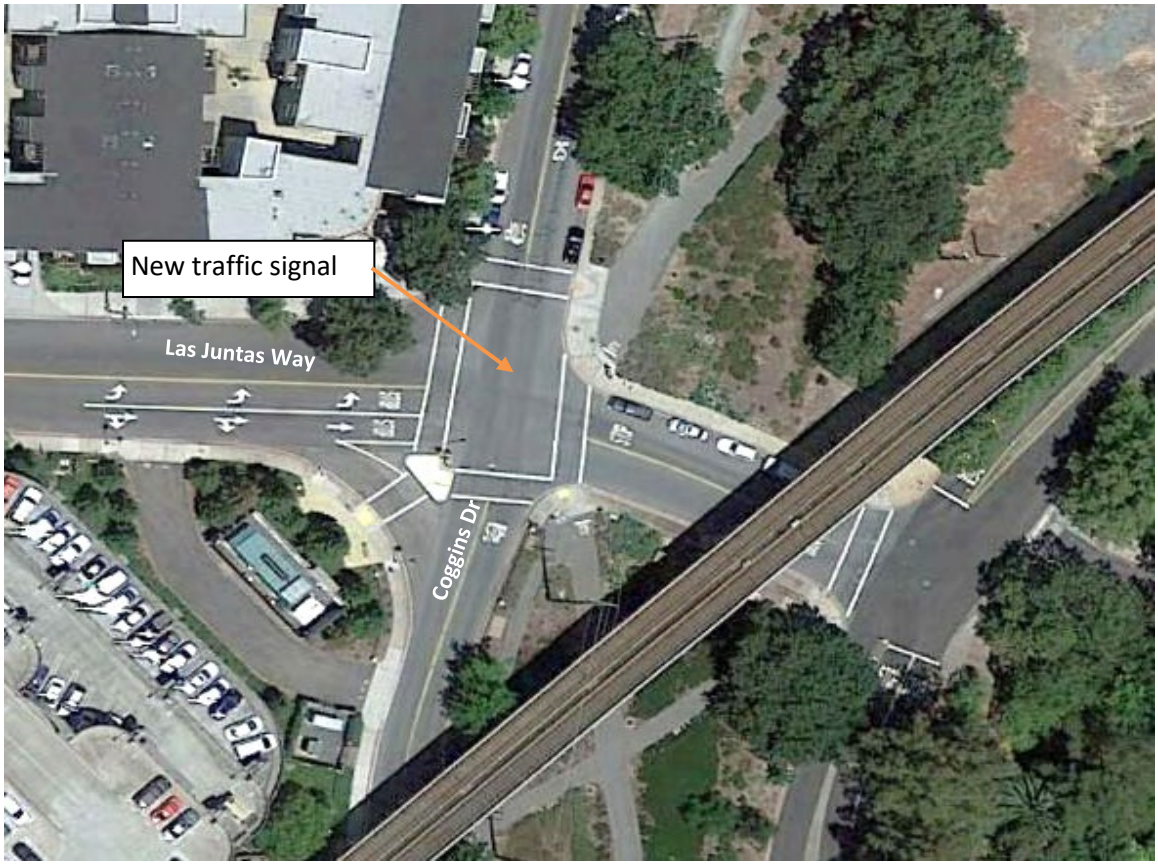
Contract Items	$ 360,800
Other Costs (CON)	$ 73,000
Contingency*	$ 55,000
Subtotal (Contract Items)	$ 488,800
Subtotal (Plan)	$ 50,000
Subtotal (PE)	$ 193,000
Subtotal (R/W)	$ -
Grand Total	$ 731,800
Current Year	2015
Escalation Year	2021
Escalation Factor	17.3%
➢ **TOTAL (in 2021 dollars)**	**$ 858,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project CCC1: Las Juntas Way/Coggins Drive Intersection Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **CCC2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Buskirk Ave./Oak Road - Northbound I-680 Corridor Improvements

Project Location: Between Treat Boulevard and Oak Road

Description

The project will increase capacity for traffic on northbound Buskirk Avenue and Oak Road to access northbound I-680. Improvements may be made on Buskirk Avenue or parallel roadways.

Project Length (ft): 1850

Date of Estimate: Sep. 25, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1. Buskirk Avenue from Treat Boulevard to Wayne Drive (L=450 ft)					
1	Stripe third northbound lane	450	LF	$3.00	$ 1,350
2	Modify pork chop and striping for westbound right	1	LS	$7,500.00	$ 7,500
3	Sandblast existing striping	1	LS	$1,000.00	$ 1,000
4	Stripe new pavement legends	1	LS	$1,000.00	$ 1,000
5	Signage	1	LS	$2,000.00	$ 2,000
6	ADA curb ramp (w/ detectable warning surface)	2	EA	$4,200.00	$ 8,400
				1. Subtotal:	$ 21,250
2. Buskirk Avenue and Wayne Drive Intersection					
7	Demolish concrete islands	380	SF	$7.00	$ 2,660
8	Earthwork	380	SF	$2.00	$ 760
9	Class 2 Aggregate Base	28	CY	$65.00	$ 1,830
10	Hot Mix Asphalt (Type A)	13	Ton	$125.00	$ 1,568
11	Relocate signal poles, controller, and service	1	LS	$200,000.00	$ 200,000
12	Sandblast existing striping	1	LS	$1,000.00	$ 1,000
13	Restripe intersection approach	3	EA	$1,500.00	$ 4,500
14	Signage	1	LS	$2,000.00	$ 2,000
15	ADA curb ramp (w/ detectable warning surface)	1	EA	$4,200.00	$ 4,200
				2. Subtotal:	$ 206,817
3. Buskirk Avenue from Wayne Drive to the I-680 Northbound On-Ramp					
16	Demolish existing sidewalk	3780	SF	$3.00	$ 11,340
17	Clear and remove existing landscaping	1	LS	$30,000.00	$ 30,000
18	Earthwork	7560	SF	$2.00	$ 15,120
19	Class 2 Aggregate Base	560	CY	$65.00	$ 36,400
20	Hot Mix Asphalt (Type A)	249	Ton	$125.00	$ 31,185
21	Curb and gutter	630	LF	$35.00	$ 22,050
22	Misc. drainage modifications	1	LS	$29,200.00	$ 29,200
23	Sidewalk	3780	SF	$8.00	$ 30,240
24	Striping	630	LF	$3.00	$ 1,890
25	Reconstruct existing driveway	2	EA	$5,000.00	$ 10,000
26	Relocate street light	3	EA	$2,500.00	$ 7,500
27	Signage	1	LS	$2,000.00	$ 2,000
28	ADA curb ramp (w/ detectable warning surface)	2	EA	$4,200.00	$ 8,400
				3. Subtotal:	$ 235,325
4. Buskirk Avenue from the I-680 Northbound On-Ramp to Oak Road					
29	Demolish existing sidewalk	3000	SF	$3.00	$ 9,000
30	Clear and remove existing landscaping	1	LS	$30,000.00	$ 30,000
31	Earthwork	6000	SF	$2.00	$ 12,000

32	Class 2 Aggregate Base	444	CY	$65.00	$ 28,889
33	Hot Mix Asphalt (Type A)	198	Ton	$125.00	$ 24,750
34	Curb and gutter	500	LF	$35.00	$ 17,500
35	Misc. drainage modifications	1	LS	$24,400.00	$ 24,400
36	Sidewalk	3000	SF	$8.00	$ 24,000
37	Striping	500	LF	$3.00	$ 1,500
38	Relocate street light	2	EA	$2,500.00	$ 5,000
39	Signage	1	LS	$2,000.00	$ 2,000
				4. Subtotal:	$ 179,039
5. Buskirk Avenue Connection to Oak Road On-Ramp to I-680 North, and On-Ramp Modifications					
40	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
41	Earthwork	9500	SF	$2.00	$ 19,000
42	Class 2 Aggregate Base	704	CY	$65.00	$ 45,741
43	Hot Mix Asphalt (Type A)	470	Ton	$125.00	$ 58,781
44	Curb and gutter	500	LF	$35.00	$ 17,500
45	Misc. drainage modifications	1	LS	$34,200.00	$ 34,200
46	Striping	500	LF	$6.00	$ 3,000
47	Install new street lights	2	EA	$5,000.00	$ 10,000
48	Signage	1	LS	$2,000.00	$ 2,000
				5. Subtotal:	$ 220,222
49	Temporary traffic control	1	LS	$86,300.00	$ 86,300
50	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
51	Mobilization	1	LS	$ 95,500.00	$ 95,500

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 955,000

Project Number **CCC2**

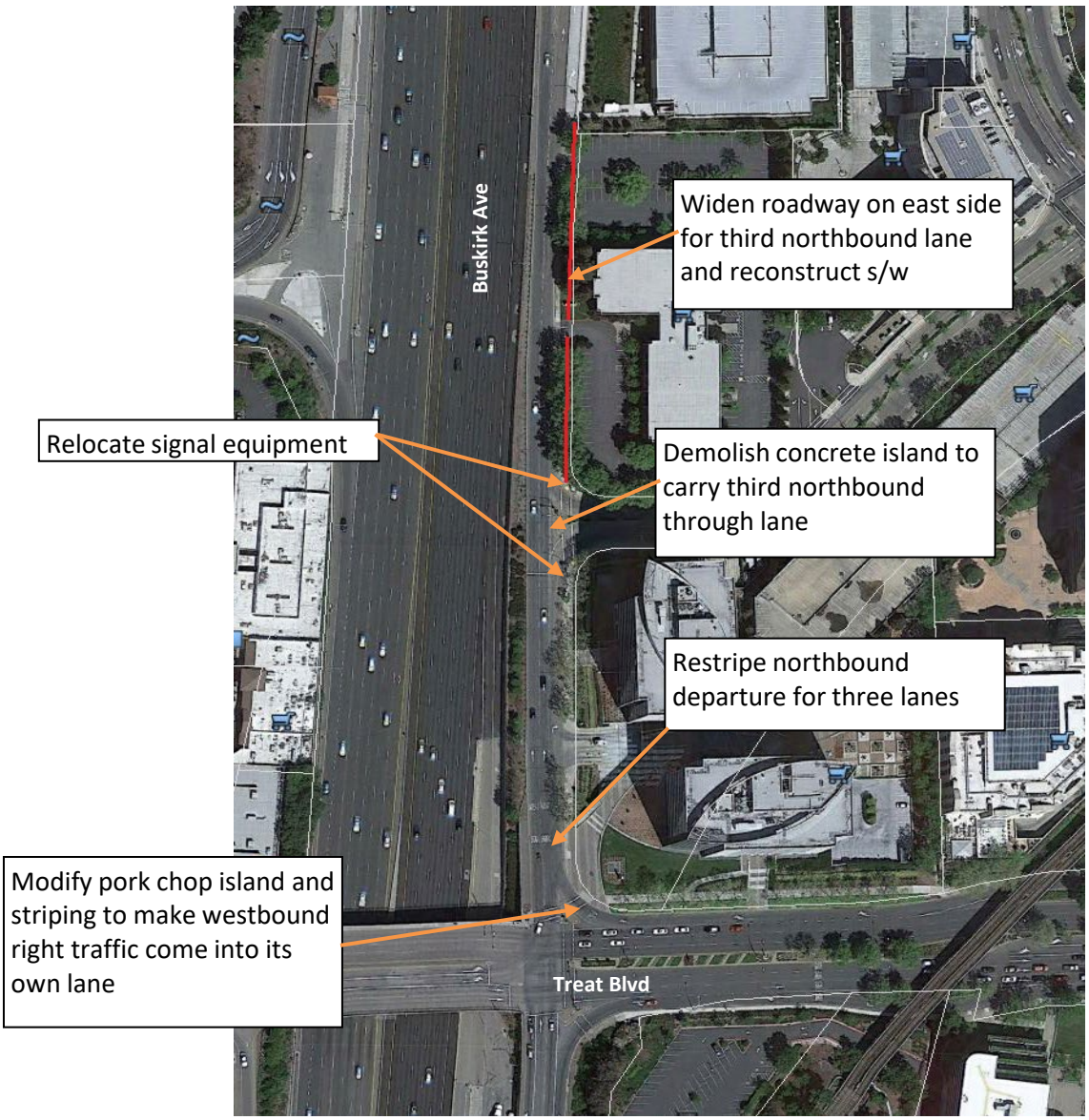
Planning Engineering (TE)	$ 144,000	Contract Items	$ 1,050,500
Preliminary Engineering (Design/Survey)*	$ 358,000	Other Costs (CON)	$ 158,000
Utility Coordination (Design)	$ 90,000	Contingency*	$ 263,000
Environmental (Environmental, Real Property)	$ 170,000	Subtotal (Contract Items)	$ 1,471,500
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 144,000
Real Property Labor	$ 120,000	Subtotal (PE)	$ 618,000
R/W Acquisition	$ 150,000	Subtotal (R/W)	$ 320,000
Construction Engineering *	$ 158,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 1,240,000		
		Grand Total	$ 2,553,500
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 2,995,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

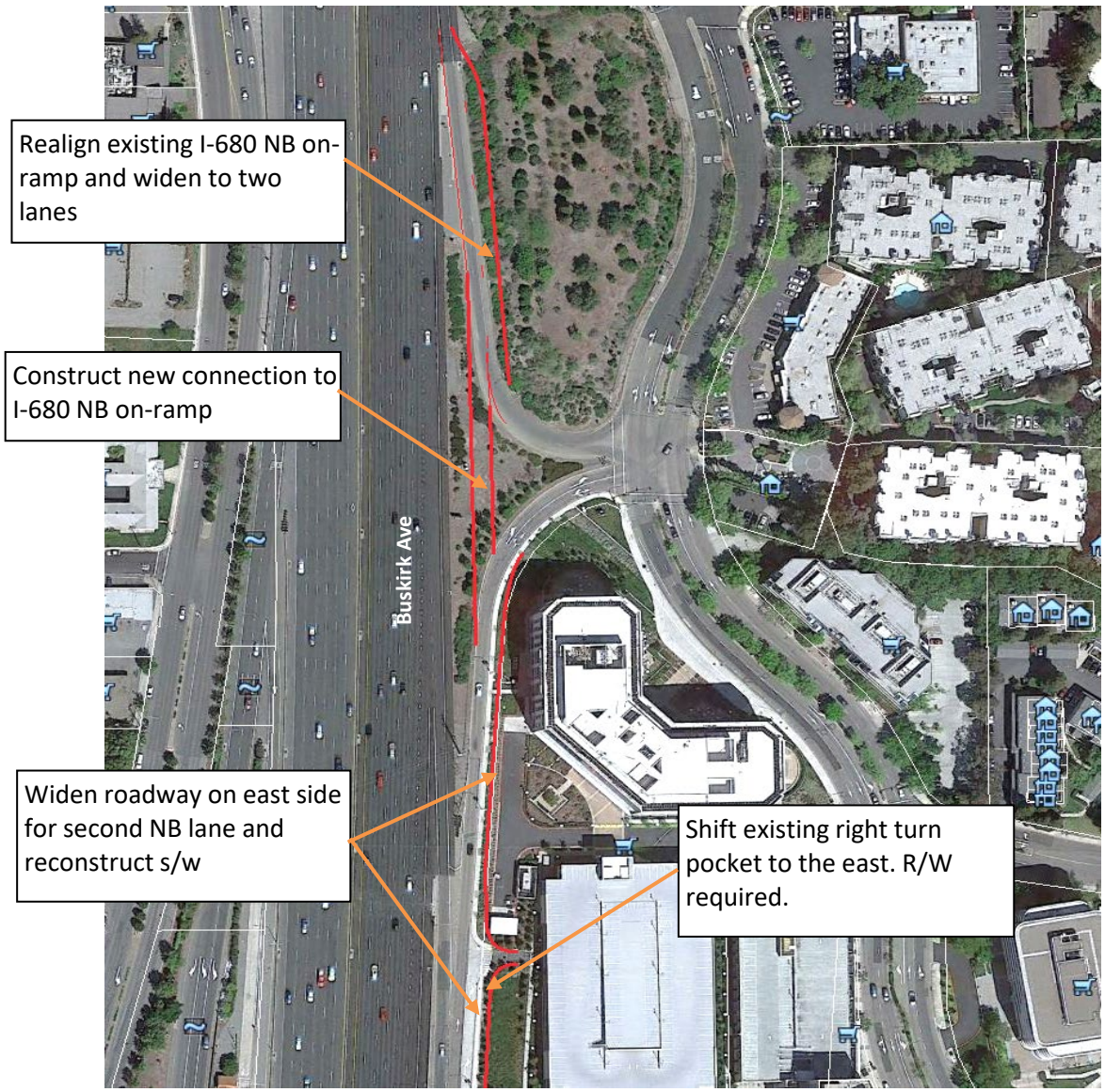
* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project CCC2: Buskirk Ave./Oak Road - Northbound I-680 Corridor Improvements



Project CCC2: Buskirk Ave./Oak Road - Northbound I-680 Corridor Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **CCC3**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Treat Boulevard Bicycle and Pedestrian Improvements

Project Location: Treat Boulevard from Main Street to Jones Road

Description

The project will provide for two-way bicycle travel along the north side of Treat Boulevard and enhance pedestrian travel on the south side. High visibility "ladder" type crosswalk striping, yield lines and signs would be provided at the channelized right-turns. All curb ramps would be replaced to meet ADA standards. Removing the southbound channelized right turn at Oak Road and Jones Road will eliminate the weaving of westbound motorists between Oak Road and the I-680 ramps, improving traffic operations and safety. In order to prevent queuing issues, a double southbound right turn will be implemented at this location, and the travel lanes shifted eastward. Additional features include traffic signal hardware upgrades and bicycle signal heads at some locations, as well as a bicycle waiting area and the intersection of Treat Boulevard and Main Street.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1. Treat Boulevard and Main Street					
1	Demolish existing pork chop island	675	SF	$3.00	$ 2,025
2	New pork chop island	500	SF	$7.00	$ 3,500
3	Shorten median nose	20	LF	$10.00	$ 200
4	Sandblast existing striping	1	LS	$1,000.00	$ 1,000
5	Stripe high-visibility crosswalk	5	EA	$1,500.00	$ 7,500
6	Stripe sharrow	9	EA	$250.00	$ 2,250
7	Stripe set-back limit line	400	LF	$3.00	$ 1,200
8	Stripe two-stage turn waiting area	2	EA	$1,000.00	$ 2,000
9	Modify traffic signal to add bicycle signal heads	1	LS	$100,000.00	$ 100,000
10	Reconstruct retaining wall at bicycle waiting area	75	LF	$200.00	$ 15,000
11	ADA curb ramp (w/ detectable warning surface)	10	EA	$4,200.00	$ 42,000
12	Earthwork and clear landscaping	400	SF	$2.00	$ 800
13	Widen southwest sidewalk	400	SF	$8.00	$ 3,200
				1. Subtotal:	$ 180,675
2. Treat Boulevard from Main Street to Buskirk Avenue					
14	Sandblast existing striping	1	LS	$1,000.00	$ 1,000
15	Restripe to narrow lanes	2370	LF	$3.00	$ 7,110
16	Stripe sharrow	2	EA	$250.00	$ 500
17	Demolish existing asphalt	4620	SF	$3.00	$ 13,860
18	Widen north sidewalk to 12'	4620	SF	$8.00	$ 36,960
19	New curb and gutter	660	LF	$35.00	$ 23,100
20	Earthwork and clear landscaping	1925	SF	$2.00	$ 3,850
21	Construct 7' south sidewalk	3885	SF	$8.00	$ 31,080
22	Stripe high-visibility crosswalk	1	EA	$1,500.00	$ 1,500
23	ADA curb ramp (w/ detectable warning surface)	2	EA	$4,200.00	$ 8,400
				2. Subtotal:	$ 127,360
3. Treat Boulevard and Buskirk Avenue					
24	Demolish existing pork chop island	660	SF	$3.00	$ 1,980
25	New pork chop island	320	SF	$8.00	$ 2,560
26	Sandblast existing striping	1	LS	$1,000.00	$ 1,000
27	Stripe high-visibility crosswalk	5	EA	$1,500.00	$ 7,500
28	Install raised crosswalk	1	EA	$5,000.00	$ 5,000

29	ADA curb ramp (w/ detectable warning surface)	10	EA	$4,200.00	$	42,000
30	Upgrade signal hardware (or relocate Type 1-B pole)	1	LS	$10,000.00	$	10,000
				3. Subtotal:	$	70,040
4. Treat Boulevard from Buskirk Avenue to Oak Road						
31	Restripe ex. 10' sidewalk for two-way shared use	420	LF	$3.00	$	1,260
32	Bike ramp from sidewalk to slip lane	1	EA	$3,000.00	$	3,000
33	Restripe slip lane to two-way bike lane	200	LF	$3.00	$	600
34	Demolish asphalt	800	SF	$3.00	$	2,400
35	Install planter to close slip lane access	800	SF	$10.00	$	8,000
36	Curb and gutter	100	LF	$35.00	$	3,500
37	Add "bikes yield to pedestrians" signs	2	EA	$500.00	$	1,000
38	Stripe sharrow	9	EA	$250.00	$	2,250
				4. Subtotal:	$	22,010
5. Treat Boulevard and Oak Road						
39	Modify traffic signal to add bicycle signal heads	1	LS	$100,000.00	$	100,000
40	Relocate mast arm signal at NW pork chop	1	EA	$100,000.00	$	100,000
41	Relocate mast arm signal at NE pork chop	1	EA	$100,000.00	$	100,000
42	Lengthen mast arm signal at SW quadrant	1	EA	$100,000.00	$	100,000
43	Sandblast existing striping	1	LS	$1,000.00	$	1,000
44	Stripe high-visibility crosswalk	4	EA	$1,500.00	$	6,000
45	Demolish existing pork chop island on NE corner	350	SF	$3.00	$	1,050
46	Extend NW corner pork chop to create one-way bike lane	1500	SF	$8.00	$	12,000
47	New curb and gutter for one-way bike lane	250	LF	$35.00	$	8,750
48	Stripe one-way bike lane	300	LF	$3.00	$	900
49	New curb and gutter on NE corner	300	LF	$35.00	$	10,500
50	Restripe intersection approach for bike bays	3	EA	$2,500.00	$	7,500
51	Stripe sharrow	9	EA	$250.00	$	2,250
52	ADA curb ramp (w/ detectable warning surface)	10	EA	$4,200.00	$	42,000
53	Demolish median on SB Oak approach	2200	SF	$3.00	$	6,600
54	Cut back median nose on east leg	50	LF	$20.00	$	1,000
55	Demolish existing sidewalk, curb & gutter (NE corner	2800	SF	$3.00	$	8,400
56	New landscaped median	200	LF	$100.00	$	20,000
57	Earthwork	3600	SF	$2.00	$	7,200
58	Class 2 Aggregate Base	267	CY	$65.00	$	17,333
59	Hot Mix Asphalt (Type A)	178	Ton	$125.00	$	22,275
60	Restripe roadway	1000	LF	$3.00	$	3,000
61	New south sidewalk	1200	SF	$8.00	$	9,600
				5. Subtotal:	$	587,358
6. Treat Boulevard from Oak Road to Jones Road						
62	Stripe sharrow	7	EA	$250.00	$	1,750
63	Sandblast existing striping	1	LS	$1,000.00	$	1,000
64	Restripe westbound right lane	150	LF	$3.00	$	450
				6. Subtotal:	$	3,200
7. Treat Boulevard and Jones Road						
65	Stripe sharrow	2	EA	$250.00	$	500
66	Sandblast existing striping	1	LS	$1,000.00	$	1,000
67	Stripe high-visibility crosswalk	6	EA	$1,500.00	$	9,000
				7. Subtotal:	$	10,500
68	Temporary traffic control	1	LS	$99,100.00	$	99,100
69	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$	6,000
70	Mobilization	1	LS	$ 110,600.00	$	110,600

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,106,000

Project Number **CCC3**

Planning Engineering (TE)	$ 277,000	Contract Items	$ 1,216,600
Preliminary Engineering (Design/Survey)*	$ 487,000	Other Costs (CON)	$ 183,000
Utility Coordination (Design)	$ 100,000	Contingency*	$ 183,000
Environmental (Environmental, Real Property)	$ 150,000	Subtotal (Contract Items)	$ 1,582,600

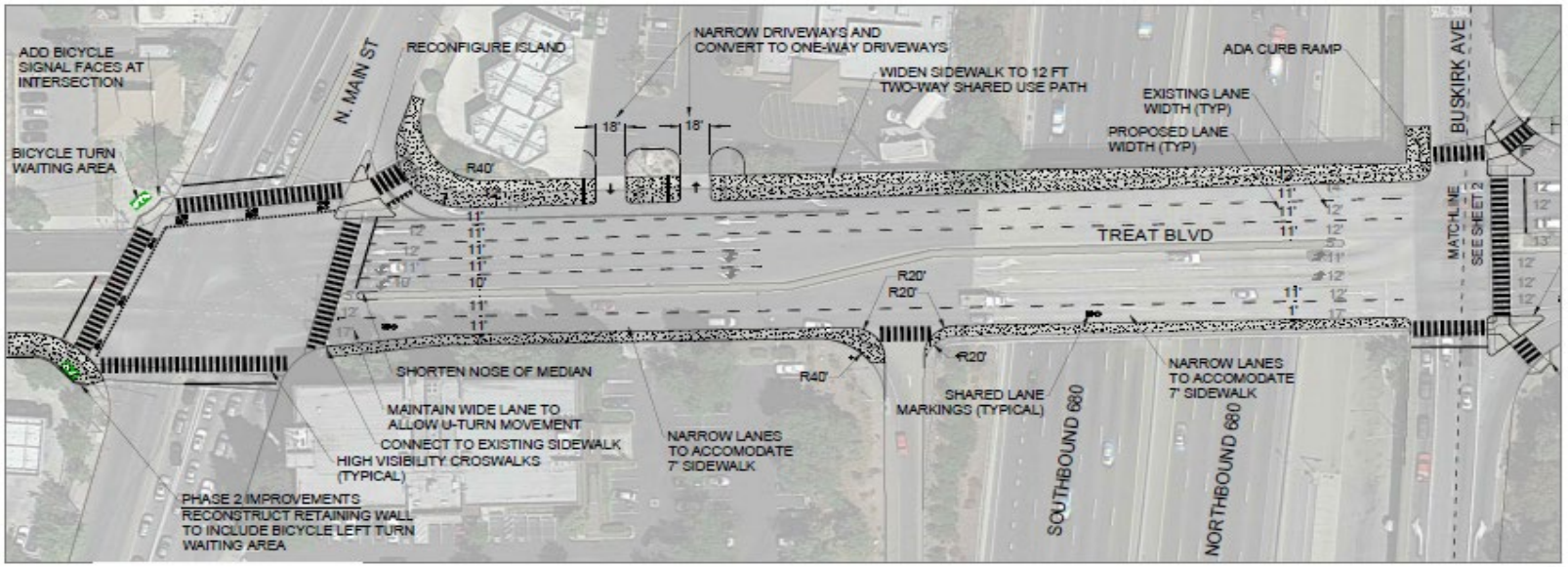
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$	277,000
Real Property Labor	$ -	Subtotal (PE)	$	737,000
R/W Acquisition	$ -	Subtotal (R/W)	$	-
Construction Engineering *	$ 183,000			
Environmental Monitoring and Mitigation Fees	$ -			
SUBTOTAL of OTHER COSTS (ALL)	$ 1,197,000			
		Grand Total	$	2,596,600
		Current Year		2015
		Escalation Year		2021
		Escalation Factor		17.3%
		➢ **TOTAL (in 2021 dollars)**	**$**	**3,045,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

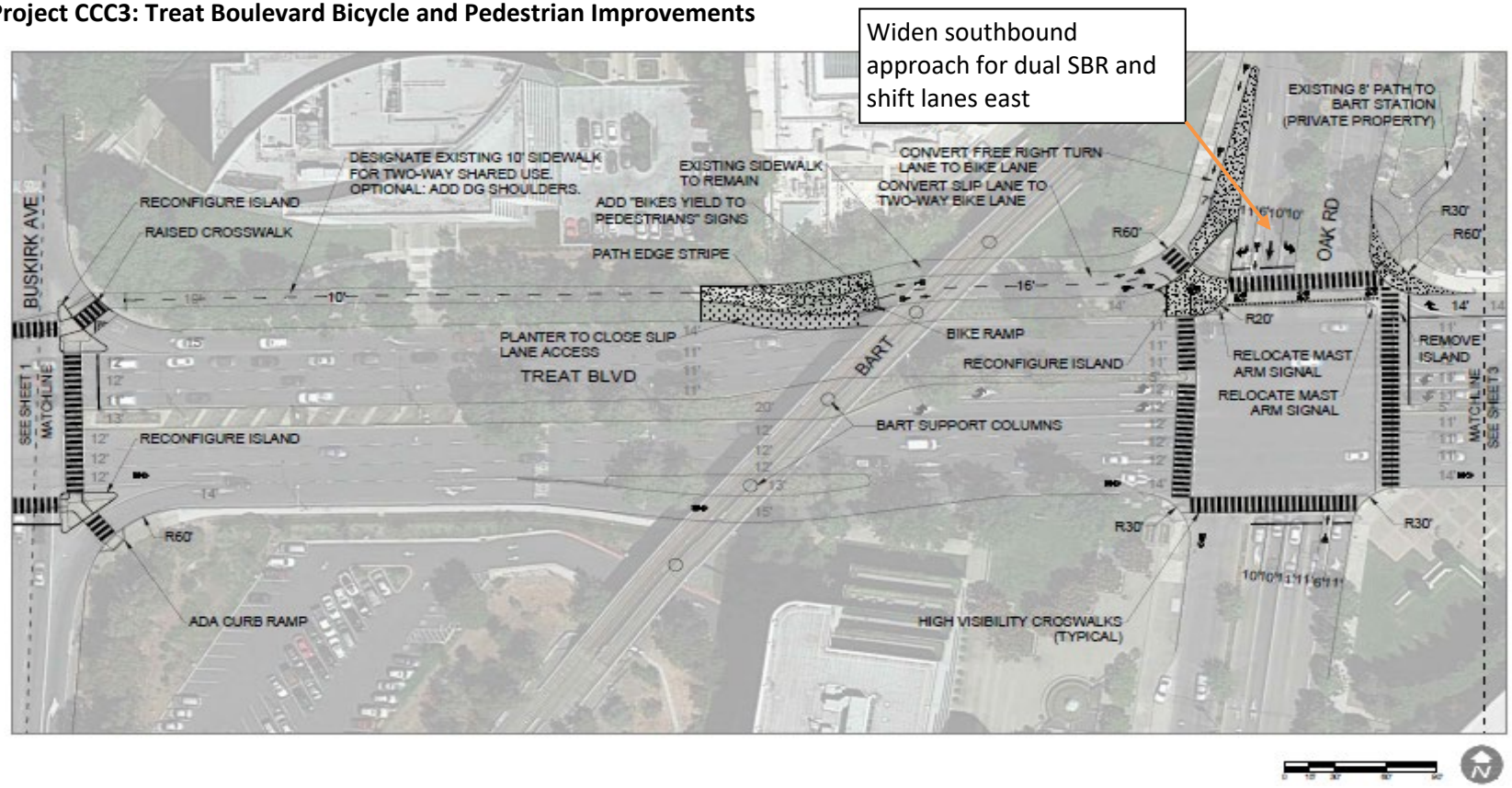
* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project CCC3: Treat Boulevard Bicycle and Pedestrian Improvements



Project CCC3: Treat Boulevard Bicycle and Pedestrian Improvements



Project CCC3: Treat Boulevard Bicycle and Pedestrian Improvements

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **CCC4**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Treat Boulevard Bicycle Improvements (east of Jones Road)

Project Location: Treat Boulevard from Jones Road to the Walnut Creek Bridge

Description Project would add 5' Class II bike lanes along Treat Boulevard from Jones Road to the Walnut Creek Bridge. This would be accomplished by narrowing the existing median and taking frontage where necessary.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1. Treat Boulevard from Jones Road to Cherry Lane (L=980 ft)					
1	Relocate traffic signal equipment (one quadrant)	2	EA	$100,000.00	$ 200,000
2	Demolish existing median and landscaping	6000	SF	$5.00	$ 30,000
3	Demolish south side sidewalk	8820	SF	$3.00	$ 26,460
4	New concrete median with landscaping	980	LF	$80.00	$ 78,400
5	New south sidewalk	7840	LF	$8.00	$ 62,720
6	Earthwork	9800	SF	$2.00	$ 19,600
7	Class 2 Aggregate Base	726	CY	$65.00	$ 47,185
8	Hot Mix Asphalt (Type A)	485	Ton	$125.00	$ 60,638
9	Relocate signs and bus stop bench	1	LS	$10,000.00	$ 10,000
10	Restripe roadway	980	LF	$25.00	$ 24,500
				1. Subtotal:	$ 559,503
2. Treat Boulevard from Cherry Lane to Walnut Creek Bridge (L=600')					
11	Relocate traffic signal equipment (one quadrant)	2	EA	$100,000.00	$ 200,000
12	Narrow existing median and repair landscaping	370	LF	$50.00	$ 18,500
13	Demolish south side sidewalk	3600	SF	$3.00	$ 10,800
14	Earthwork	6000	SF	$2.00	$ 12,000
15	Class 2 Aggregate Base	444	CY	$65.00	$ 28,889
16	Hot Mix Asphalt (Type A)	297	Ton	$125.00	$ 37,125
17	New south sidewalk	3600	SF	$8.00	$ 28,800
18	Stripe bike lanes	600	LF	$12.00	$ 7,200
				2. Subtotal:	$ 343,314
19	Signage	1	LS	$5,000.00	$ 5,000
20	Temporary traffic control	1	LS	$45,100.00	$ 45,100
21	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
22	Mobilization	1	LS	$ 95,900.00	$ 95,900

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 959,000

Project Number **CCC4**

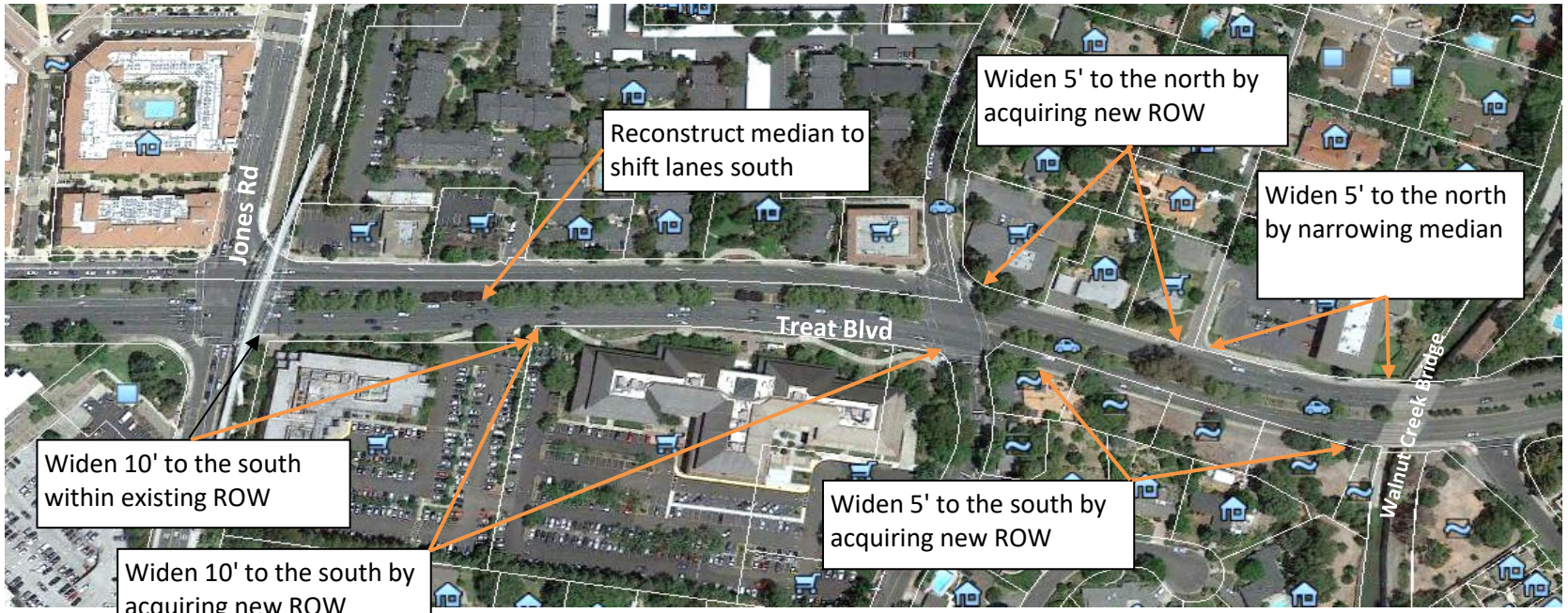
Planning Engineering (TE)	$ 144,000	Contract Items	$ 1,054,900
Preliminary Engineering (Design/Survey)*	$ 500,000	Other Costs (CON)	$ 159,000
Utility Coordination (Design)	$ 50,000	Contingency*	$ 211,000
Environmental (Environmental, Real Property)	$ 90,000	Subtotal (Contract Items)	$ 1,424,900
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 144,000
Real Property Labor	$ 120,000	Subtotal (PE)	$ 640,000
R/W Acquisition	$ 500,000	Subtotal (R/W)	$ 670,000
Construction Engineering *	$ 159,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 1,613,000		
		Grand Total	$ 2,878,900
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 3,376,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 20% of contract items. ($10,000 min.)

Project CCC4: Treat Boulevard Bicycle Improvements (east of Jones Road)



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **CCC6**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Treat Boulevard/Jones Road Intersection Improvements
Project Location: Treat Boulevard and Jones Road

Description

On the southbound approach, the project would add an additional southbound left turn bay to enhance intersection operations. This would be accomplished by shifting the two northbound departure lanes and sidewalk to the east. This cost estimate assumes that the pedestrian overcrossing would not be affected. If there is not adequate clearance under the overcrossing for the channelized eastbound right turn lane, the bridge would have to be raised; this would add additional cost that is not accounted for in this estimate. New right of way would be required, but the affected parcel is owned by the County.

On the northbound approach, the project would add a separate northbound right turn lane to enhance intersection operations. This would be accomplished by shifting the southbound departure lane and sidewalk to the west. This requires a small amount of right of way from parcel 172-020-046.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1. Southbound Approach					
1	Demolish concrete median	240	LF	$10.00	$ 2,400
2	Demolish existing pork chop island	500	SF	$3.00	$ 1,500
3	Traffic signal modification (one quadrant)	1	LS	$100,000.00	$ 100,000
4	Demolish existing 10' sidewalk	3000	SF	$3.00	$ 9,000
5	Clear existing landscaping	1000	SF	$2.00	$ 2,000
6	Earthwork	5040	SF	$2.00	$ 10,080
7	Class 2 Aggregate Base	373	CY	$65.00	$ 24,267
8	Hot Mix Asphalt (Type A)	131	Ton	$125.00	$ 16,335
9	New concrete median with landscaping	240	LF	$80.00	$ 19,200
10	New pork chop island	500	SF	$8.00	$ 4,000
11	ADA curb ramp (w/ detectable warning surface)	4	EA	$4,200.00	$ 16,800
12	Relocate street lights	5	EA	$2,000.00	$ 10,000
13	New 10' sidewalk	3000	SF	$8.00	$ 24,000
14	Striping	960	LF	$3.00	$ 2,880
				1. Subtotal:	$ 242,462
2. Northbound Approach					
15	Demolish existing pork chop island	200	SF	$3.00	$ 600
16	Traffic signal modification (one quadrant)	1	LS	$100,000.00	$ 100,000
17	Demolish existing 10' sidewalk	1750	SF	$3.00	$ 5,250
18	Clear existing landscaping	1000	SF	$2.00	$ 2,000
19	Earthwork	2700	SF	$2.00	$ 5,400
20	Class 2 Aggregate Base	200	CY	$65.00	$ 13,000
21	Hot Mix Asphalt (Type A)	191	Ton	$125.00	$ 23,822
22	New pork chop island	200	SF	$8.00	$ 1,600
23	ADA curb ramp (w/ detectable warning surface)	4	EA	$4,200.00	$ 16,800
24	Relocate street lights	1	EA	$2,000.00	$ 2,000
25	New 10' sidewalk	1750	SF	$8.00	$ 14,000
26	Striping	1050	LF	$3.00	$ 3,150
				2. Subtotal:	$ 187,622
27	Signage	1	LS	$1,000.00	$ 1,000
28	Temporary traffic control	1	LS	$43,000.00	$ 43,000

29	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
30	Mobilization	1	LS	$ 48,000.00	$ 48,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 480,000

Project Number **CCC6**

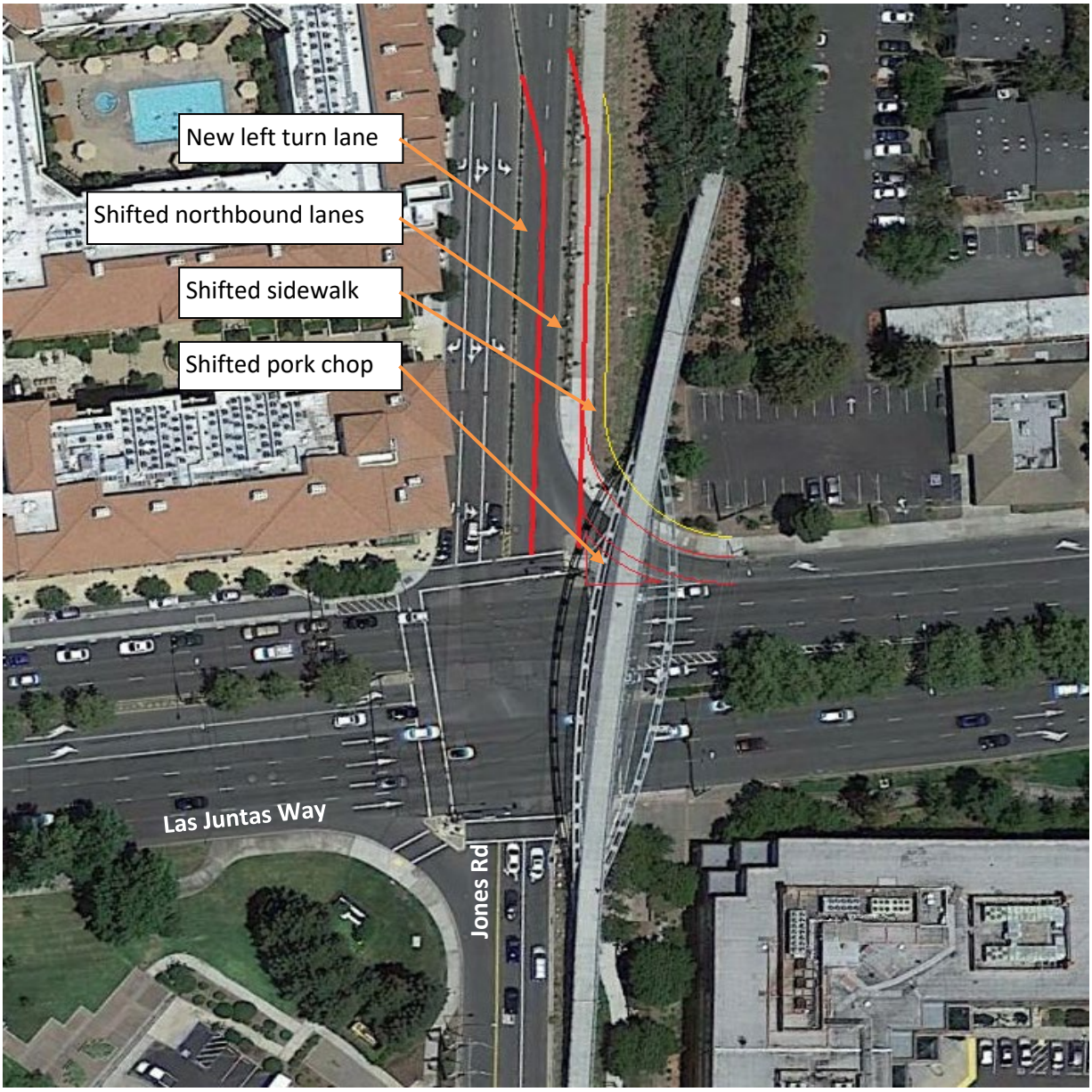
Planning Engineering (TE)	$ 72,000	Contract Items	$	528,000
Preliminary Engineering (Design/Survey)*	$ 180,000	Other Costs (CON)	$	80,000
Utility Coordination (Design)	$ 40,000	Contingency*	$	80,000
Environmental (Environmental, Real Property)	$ 60,000	Subtotal (Contract Items)	$	688,000
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$	72,000
Real Property Labor	$ 75,000	Subtotal (PE)	$	280,000
R/W Acquisition	$ 65,000	Subtotal (R/W)	$	190,000
Construction Engineering *	$ 80,000			
Environmental Monitoring and Mitigation Fees	$ -			
SUBTOTAL of OTHER COSTS (ALL)	$ 622,000			
		Grand Total	$	1,230,000
		Current Year		2015
		Escalation Year		2021
		Escalation Factor		17.3%
		➢ **TOTAL (in 2021 dollars)**		**$ 1,442,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

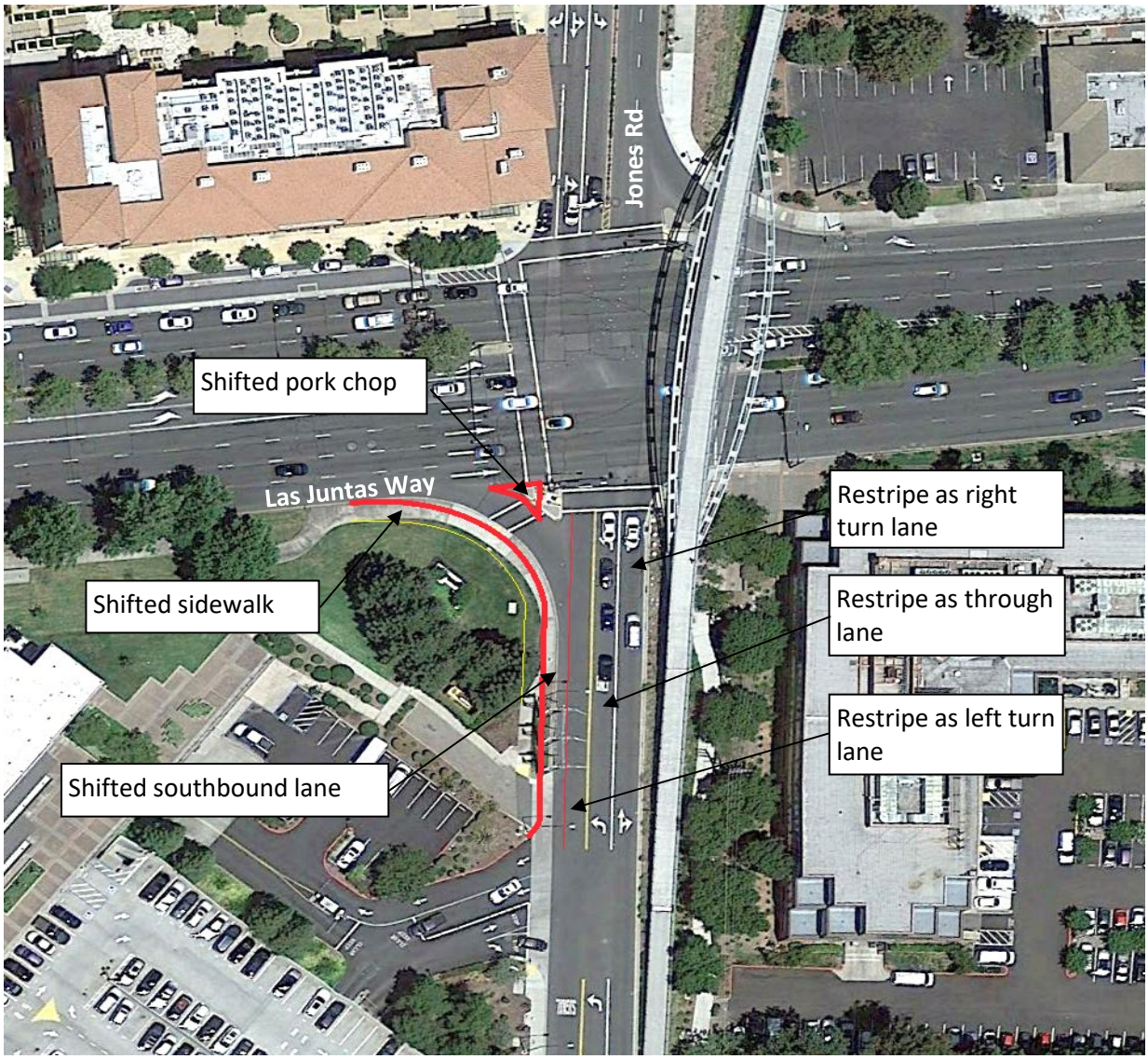
* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project CCC6: Treat Boulevard/Jones Road Intersection Improvements (Southbound Approach)



Project CCC6: Treat Boulevard/Jones Road Intersection Improvements (Northbound Approach)



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **CCC8**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Mayhew Way Pedestrian Safety Improvements

Project Location: Mayhew Way from Buskirk Avenue to Bancroft Road

Description

The project will complete gaps in the sidewalk network along Mayhew Way, where the County has frontage. These locations include: 200' west of Oberon Drive to 190' West of Woodlawn Drive (both sides), from 190' West of Woodlawn Drive to 25' East of the Iron Horse Trail Crossing (south side), and from 25' East of the trail crossing to Bancroft Road (north side). Right-of-way would need to be acquired for the both segments of the north side sidewalk.

Project Length (ft): 740

Date of Estimate: Sep. 1, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
2	Earthwork	3700	SF	$2.00	$ 7,400
3	Class 2 Aggregate Base	274	CY	$65.00	$ 17,815
4	Sidewalk	3700	SF	$8.00	$ 29,600
5	Curb and gutter	740	LF	$35.00	$ 25,900
6	ADA curb ramp (w/ detectable warning surface)	5	EA	$4,200.00	$ 21,000
7	Temporary traffic control	1	LS	$13,200.00	$ 13,200
8	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
9	Mobilization	1	LS	$ 15,100.00	$ 15,100

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 151,000

Project Number **CCC8**

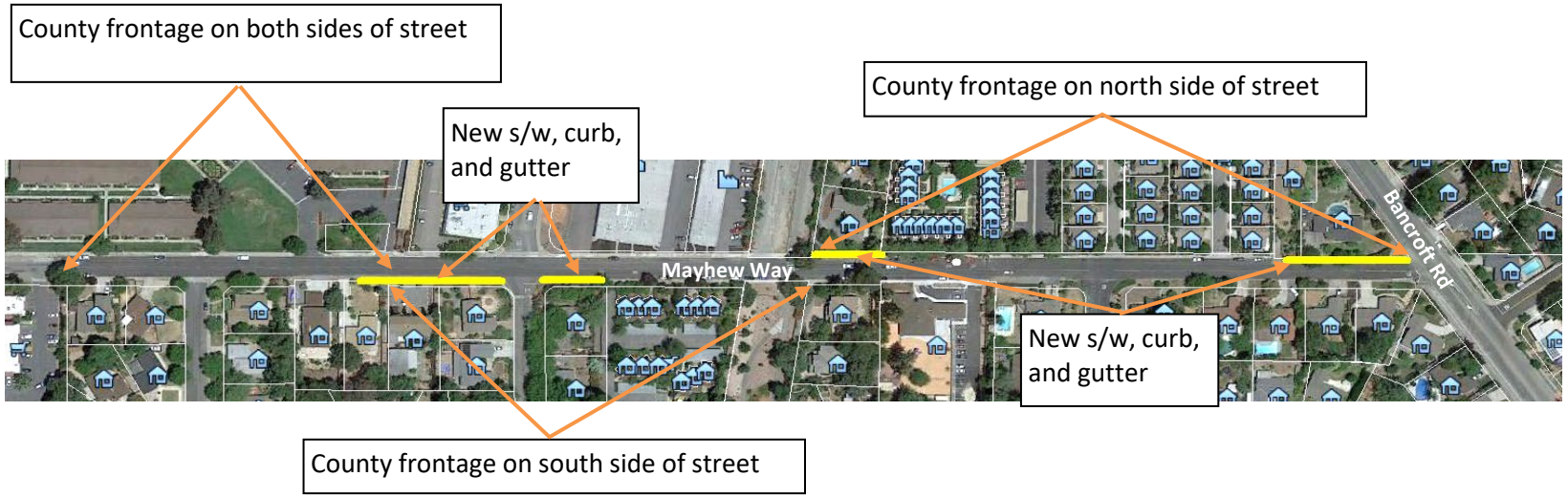
Planning Engineering (TE)	$ 100,000	Contract Items	$ 166,100
Preliminary Engineering (Design/Survey)*	$ 150,000	Other Costs (CON)	$ 34,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 25,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 225,100
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 100,000
Real Property Labor	$ 120,000	Subtotal (PE)	$ 210,000
R/W Acquisition	$ 137,500	Subtotal (R/W)	$ 307,500
Construction Engineering *	$ 34,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 651,500		
		Grand Total	$ 842,600
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 988,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project CCC8: Mayhew Way Pedestrian Safety Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **SWC2**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Olympic Boulevard/Tice Valley Road Intersection Improvements

Project Location: Olympic Boulevard and Tice Valley Road/Boulevard Way

Description

Project would add a second northbound left turn lane to enhance intersection operations. This would be accomplished by widening the northbound approach to the east. This requires a small amount of right of way from parcel 184-311-030.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Demolish existing pork chop island	200	SF	$3.00	$ 600
2	Traffic signal modification (one quadrant)	1	LS	$100,000.00	$ 100,000
3	Demolish existing 10' sidewalk	2000	SF	$3.00	$ 6,000
4	Clear existing landscaping	1000	SF	$2.00	$ 2,000
5	Earthwork	3000	SF	$2.00	$ 6,000
6	Class 2 Aggregate Base	222	CY	$65.00	$ 14,444
7	Hot Mix Asphalt (Type A)	208	Ton	$125.00	$ 25,988
8	New pork chop island	200	SF	$7.00	$ 1,400
9	ADA curb ramp (w/ detectable warning surface)	4	EA	$4,200.00	$ 16,800
10	Relocate street lights	1	EA	$2,000.00	$ 2,000
11	New 10' sidewalk	2000	SF	$8.00	$ 16,000
12	Roadway striping	1100	LF	$3.00	$ 3,300
13	Restripe crosswalks	1	LS	$2,000.00	$ 2,000
14	Signage	1	LS	$2,000.00	$ 2,000
15	Temporary traffic control	1	LS	$19,900.00	$ 19,900
16	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
17	Mobilization	1	LS	$ 22,400.00	$ 22,400

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 224,000

Project Number **SWC2**

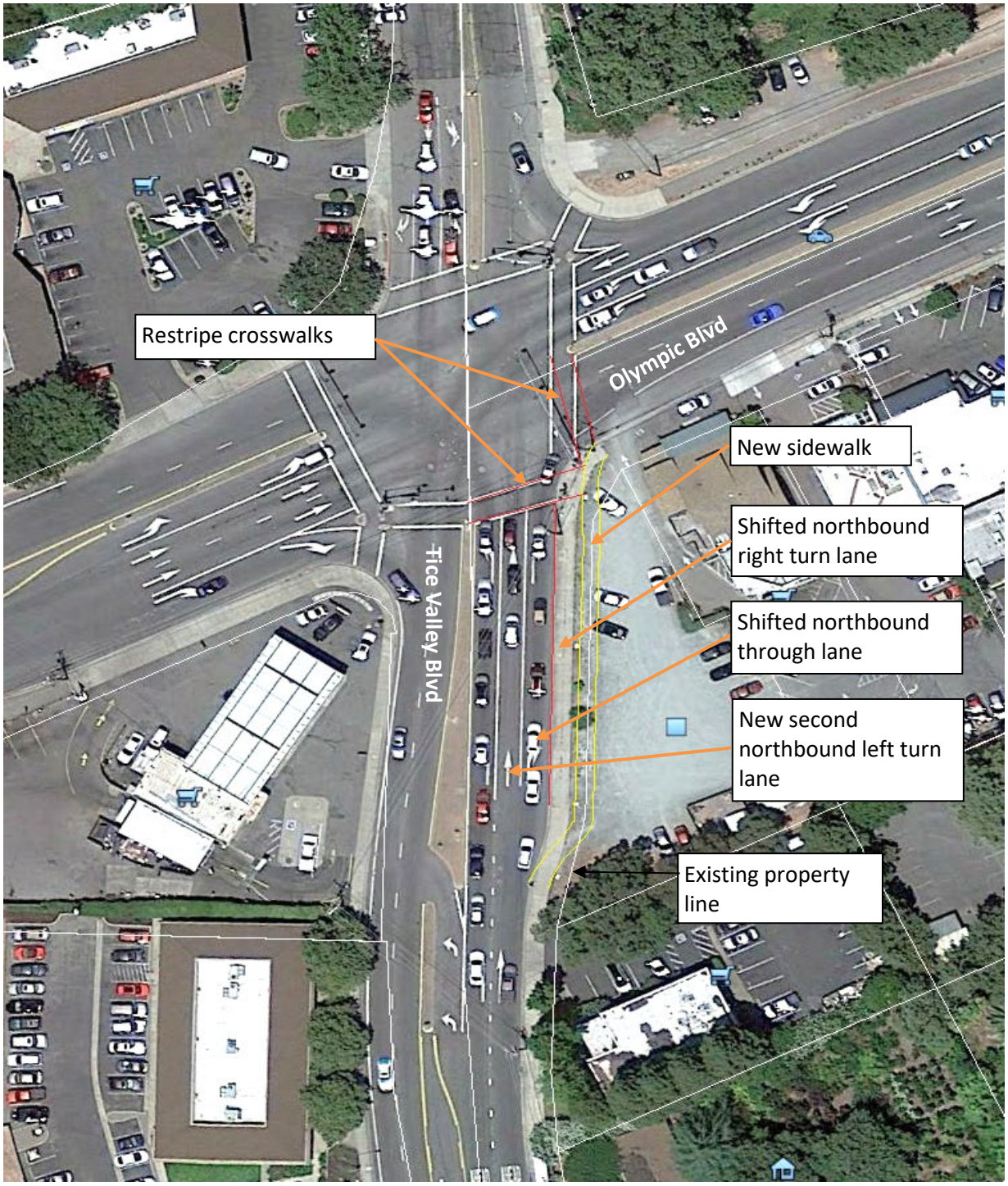
Planning Engineering (TE)	$ 100,000	Contract Items	$ 246,400
Preliminary Engineering (Design/Survey)*	$ 175,000	Other Costs (CON)	$ 50,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 37,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 333,400
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 100,000
Real Property Labor	$ 75,000	Subtotal (PE)	$ 235,000
R/W Acquisition	$ 100,000	Subtotal (R/W)	$ 225,000
Construction Engineering *	$ 50,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 610,000		
		Grand Total	$ 893,400
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 1,048,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project SWC2: Olympic Boulevard/Tice Valley Road Intersection Improvements



DKS Associates — **Planning Cost Estimate**

1970 Broadway Ste 740, Oakland CA 94612 — **Project Number** **SWC3**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Pedestrian Bridge over Las Trampas Creek
Project Location: Between Dewing Lane and So. Villa Way

Description Project would construct a 14' Class 1 path from Dewing Lane to S. Villa Way. This would include approximately 160' of at-grade path and an approximately 130' bridge over Las Trampas Creek. It is estimated this project would take 2 open parking spaces from the South Villa Condominiums.

Project Length (ft): N/A

Date of Estimate: Jul. 6, 2015

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Demolish existing fence	1	LS	$500.00	$ 500
2	Clearing and grubbing	1	LS	$30,000.00	$ 30,000
3	Earthwork	2240	SF	$2.00	$ 4,480
4	Class 2 Aggregate Base	166	CY	$65.00	$ 10,785
5	Hot Mix Asphalt (Type A)	55	Ton	$125.00	$ 6,930
6	14' Bike/Pedestrian Bridge over creek	1820	SF	$1,500.00	$ 2,730,000
7	ADA curb ramp (w/ detectable warning surface)	1	EA	$4,200.00	$ 4,200
8	Striping	290	LF	$9.00	$ 2,610
9	Signage	1	LS	$1,000.00	$ 1,000
10	Prepare Water Pollution Control Plan	1	LS	$6,000.00	$ 6,000
11	Environmental Monitoring and Mitigation	1	LS	$25,000.00	$ 25,000
12	Mobilization	1	LS	$ 282,200.00	$ 282,200

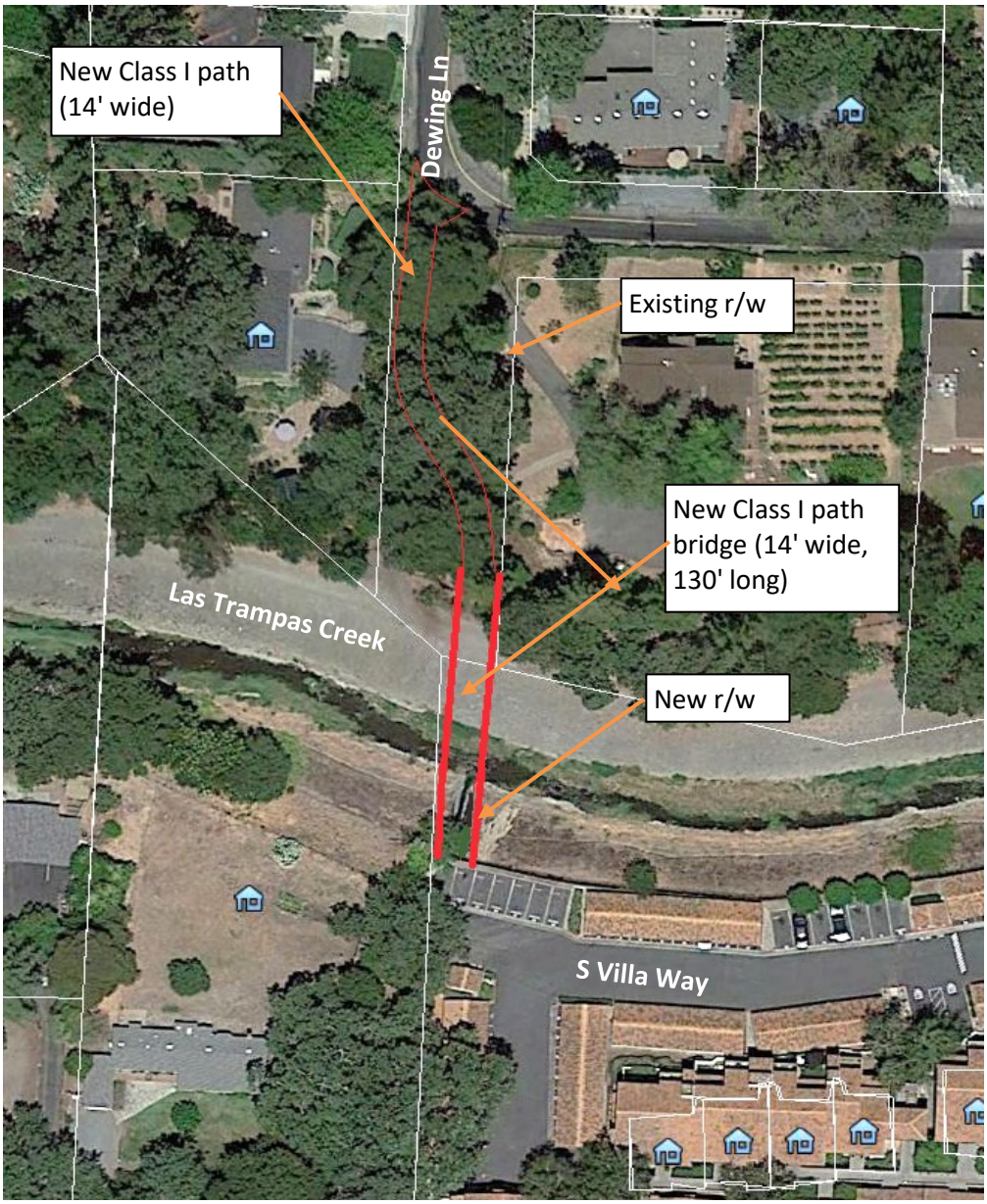
CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,822,000

Project Number **SWC3**

Planning Engineering (TE)	$ 424,000	Contract Items	$ 3,104,200
Preliminary Engineering (Design/Survey)*	$ 621,000	Other Costs (CON)	$ 466,000
Utility Coordination (Design)	$ 280,000	Contingency*	$ 777,000
Environmental (Environmental, Real Property)	$ 300,000	Subtotal (Contract Items)	$ 4,347,200
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 424,000
Real Property Labor	$ 75,000	Subtotal (PE)	$ 1,201,000
R/W Acquisition	$ 300,000	Subtotal (R/W)	$ 425,000
Construction Engineering *	$ 466,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 2,516,000		
		Grand Total	$ 6,397,200
		Current Year	2015
		Escalation Year	2021
		Escalation Factor	17.3%
		➢ **TOTAL (in 2021 dollars)**	**$ 7,502,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 25% of contract items. ($10,000 min.)

Project SWC3: Pedestrian Bridge over Las Trampas Creek



Transportation Engineering

Planning Cost Estimate

Contra Costa County Public Works Department

SWC4

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.
☐ Click here if this project is a surface treatment or overlay project.

Project Name: Tice Valley Blvd Pedestrian and Bicycle Project
Alternative: Class I Path along north side and sidewalk on south side of Tice Valley Blvd

Project Location: Tice Valley Blvd between the Walnut Creek City Limits and 200' East of Tice Hollow Ct
Assumptions: R=5 , TI=6.5

Project Length (ft): 2,320

Date of Estimate: Oct. 6, 2015

Prepared by: Tianjun Cao

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	12	EA	$ 550.00	$ 6,600
2	Traffic Control System	1	LS	$ 100,000.00	$ 100,000
3	Clearing and Grubbing	1	LS	$ 30,000.00	$ 30,000
4	Remove Tree	4	EA	$ 2,000.00	$ 8,000
5	Saw Cut Pavement Edges	4640	LF	$ 2.00	$ 9,280
6	Roadway Excavation	5564	CY	$ 45.00	$ 250,380
7	Class 2 Aggregate Base	9013	TON	$ 30.00	$ 270,390
8	Hot Mix Asphalt (Type A)	1610	TON	$ 110.00	$ 177,100
9	Roadside Sign	15	EA	$ 500.00	$ 7,500
11	Guard Rail-End Anchor Assembly	8	EA	$ 3,250.00	$ 26,000
12	Metal Beam Guard Railing (Wood Post)	250	LF	$ 115.00	$ 28,750
13	Thermoplastic Traffic Stripe - SF (Bike symbols)	220	SF	$ 5.00	$ 1,100
14	Thermoplastic Traffic Stripe - LF	4700	LF	$ 2.00	$ 9,400
15	Striping Removal	4700	LF	$ 1.50	$ 7,050
16	Sidewalk Removal (Obliteration)	2000	SF	$ 0.24	$ 480
17	Mailbox Removal and Replacement	20	EA	$ 200.00	$ 4,000
18	Bridge	1	EA	$ 200,000.00	$ 200,000
19	ADA Curb Ramp	6	EA	$ 3,500.00	$ 21,000
20	Driveway Conform	19	EA	$ 4,000.00	$ 76,000
21	Minor Concrete (Sidewalk)	11600	SF	$ 10.00	$ 116,000
22	Hot Mix Asphalt Dike	2320	LF	$ 25.00	$ 58,000
23	Bridge Widening	1	LS	$ 1,000,000.00	$ 1,000,000
	Drainage				
24	Concrete V-Ditch	50	LF	$ 75.00	$ 3,750
25	Earthen Ditch (5' top, 2' bottom, 2:1 sides)	1167	CY	$ 45.00	$ 52,500
26	Culvert Alteration	1	EA	$ 5,000.00	$ 5,000
27	Mobilization	1	LS	$ 247,000.00	$ 247,000

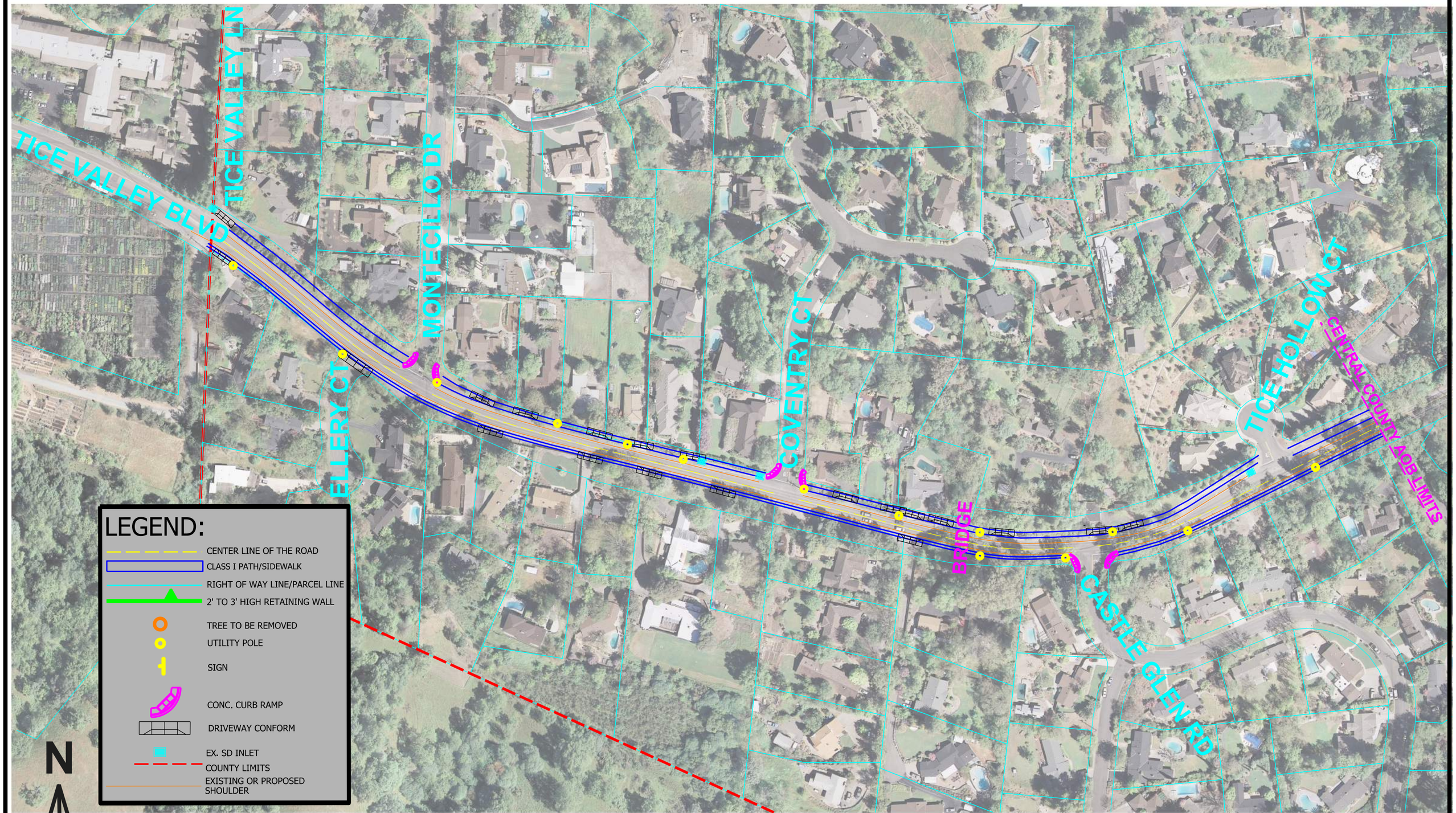
OTHER COSTS BY PHASE:

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 2,468,000

OTHER COSTS BY PHASE:

PLAN	Planning Engineering (TE)	$ 100,000	CONTRACT ITEMS	$ 2,715,000
PE	Preliminary Engineering (Design/Survey)*	$ 842,000	OTHER COSTS (CON)	$ 458,000
	Utility Coordination (Design)	$ 100,000	CONTINGENCY*	$ 408,000
	Environmental (Environmental, Real Property)	$ 100,000	SUBTOTAL (CON)	$ 3,581,000
R/W	R/W Engineering (Survey)	$ 50,000	SUBTOTAL (PLAN)	$ 100,000
	Real Property Labor	$ 75,000	SUBTOTAL (PE)	$ 1,042,000
	R/W Acquisition	$ 100,000	SUBTOTAL (R/W)	$ 225,000
CON	Construction Engineering *	$ 408,000		
	Environmental Monitoring and Mitigation Fees	$ 50,000	GRAND TOTAL	$ 4,948,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 1,825,000	CURRENT YEAR	2015
			ESCALATION YEAR	2021
			ESCALATION RATE	17.3%
			➢ **TOTAL (in 2021 dollars)**	**$ 5,804,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)
* Construction Engineering is 15% of contract items. ($20,000 min.)
* CONTINGENCY is 15% of contract items. ($10,000 min.)



SCALE: 1" = 170'

Contra Costa County
Public Works Department
255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

TICE VALLEY BLVD PEDESTRIAN AND BICYCLE PROJECT

FEDERAL ID NO.:

DB: TC CB: MH DATE: OCT 2015 SHEET 1 OF 1

Transportation Engineering

Planning Cost Estimate

Contra Costa County Public Works Department

SWC 6

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Springbrook Road Pedestrian Improvement Project

Alternative: Sidewalk on entire north side and parts of south side of roadway

Project Location: Springbrook Rd from 170' East of Gilmore Ct to 460' East of Regency Ct

Assumptions: R, TI, etc.

Project Length (ft): 3,000

Date of Estimate: Oct. 6, 2015

Prepared by: Tianjun Cao

Revision No.	0
Revision Date	
Revised by	

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	10	EA	$ 550.00	$ 5,500
2	Traffic Control System	1	LS	$ 50,000.00	$ 50,000
3	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
4	Remove Thermoplastic Traffic Stripe	6000	LF	$ 2.00	$ 12,000
5	Minor Structure (Sidewalk Cross Drain)	3	EA	$ 600.00	$ 1,800
6	Clearing and Grubbing	1	LS	$ 30,000.00	$ 30,000
7	Remove Tree	3	EA	$ 2,000.00	$ 6,000
8	Saw Cut Pavement Edges	4500	LF	$ 2.00	$ 9,000
9	Roadway Excavation	1833	CY	$ 45.00	$ 82,485
10	Imported Material (Shoulder Backing)	420	TON	$ 45.00	$ 18,900
11	Class 2 Aggregate Base	1995	TON	$ 45.00	$ 89,775
12	Hot Mix Asphalt (Type A)	3263	TON	$ 110.00	$ 358,930
13	Minor Concrete (Sidewalk)	23000	LF	$ 10.00	$ 230,000
14	ADA Curb Ramp	6	EA	$ 3,500.00	$ 21,000
15	Driveway Conform	42	EA	$ 10,000.00	$ 420,000
16	Curb and Gutter	4500	LF	$ 45.00	$ 202,500
17	Earthwork	355	CY	$ 25.00	$ 8,875
18	Minor Concrete (Retaining Wall)	270	LF	$ 140.00	$ 37,800
19	Minor Structure (Inlet)	5	EA	$ 3,200.00	$ 16,000
20	Roadside Ditch	3000	LF	$ 55.00	$ 165,000
21	C.3 Provisions and Misc. Drainage	1	LS	$ 100,000.00	$ 100,000
22	Sign Relocation	10	EA	$ 500.00	$ 5,000
23	Mailbox Removal and Replacement	30	EA	$ 300.00	$ 9,000
24	Thermoplastic Traffic Stripe - Det. 27B, Right Edge Line	6000	LF	$ 2.00	$ 12,000
25	Mobilization	1	LS	$ 190,000.00	$ 190,000

OTHER COSTS BY PHASE:

PLAN	Planning Engineering (TE)	$ 250,000
PE	Preliminary Engineering (Design/Survey)*	$ 710,000
	Utility Coordination (Design)	$ 20,000
	Environmental (Environmental, Real Property)	$ 150,000
R/W	R/W Engineering (Survey)	$ 75,000
	Real Property Labor	$ 125,000
	R/W Acquisition	$ 1,000,000
CON	Construction Engineering *	$ 314,000
	Environmental Monitoring and Mitigation Fees	$ 50,000
	SUBTOTAL of OTHER COSTS (ALL)	$ 2,694,000

CONTRACT ITEMS	$ 2,088,000
OTHER COSTS (CON)	$ 364,000
CONTINGENCY*	$ 314,000
SUBTOTAL (CON)	$ 2,766,000
SUBTOTAL (PLAN)	$ 250,000
SUBTOTAL (PE)	$ 880,000
SUBTOTAL (R/W)	$ 1,200,000
GRAND TOTAL	$ 5,096,000
CURRENT YEAR	2015
ESCALATION YEAR	2021
ESCALATION RATE	17.3%
➢ **TOTAL (in 2015 dollars)**	**$ 5,976,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **SWC7**

☐ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Olympic Boulevard/Bridgefield Road Intersection Improvements

Project Location: Olympic Boulevard & Bridgefield Road

Description Project will signalize the intersection of Olympic Boulevard and Bridgefield Road.

Project Length (ft): N/A

Date of Estimate: Feb. 19, 2016

Prepared by: C. Shew

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Install traffic signal with safety lighting (approach)	3	EA	$ 100,000.00	$ 300,000
2	Sidewalk	600	SF	$ 8.00	$ 4,800
3	Curb and gutter	90	LF	$ 35.00	$ 3,150
4	ADA curb ramp (w/ detectable warning surface)	2	EA	$ 4,200.00	$ 8,400
5	Removal of signs	1	LS	$ 500.00	$ 500
6	Sandblast existing pavement legends	1	LS	$ 1,000.00	$ 1,000
7	Restripe intersection approach	3	EA	$ 2,500.00	$ 7,500
8	Temporary traffic control	1	LS	$ 8,000.00	$ 8,000
9	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
10	Mobilization	1	LS	$ 33,900.00	$ 33,900

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 339,000

Project Number **SWC7**

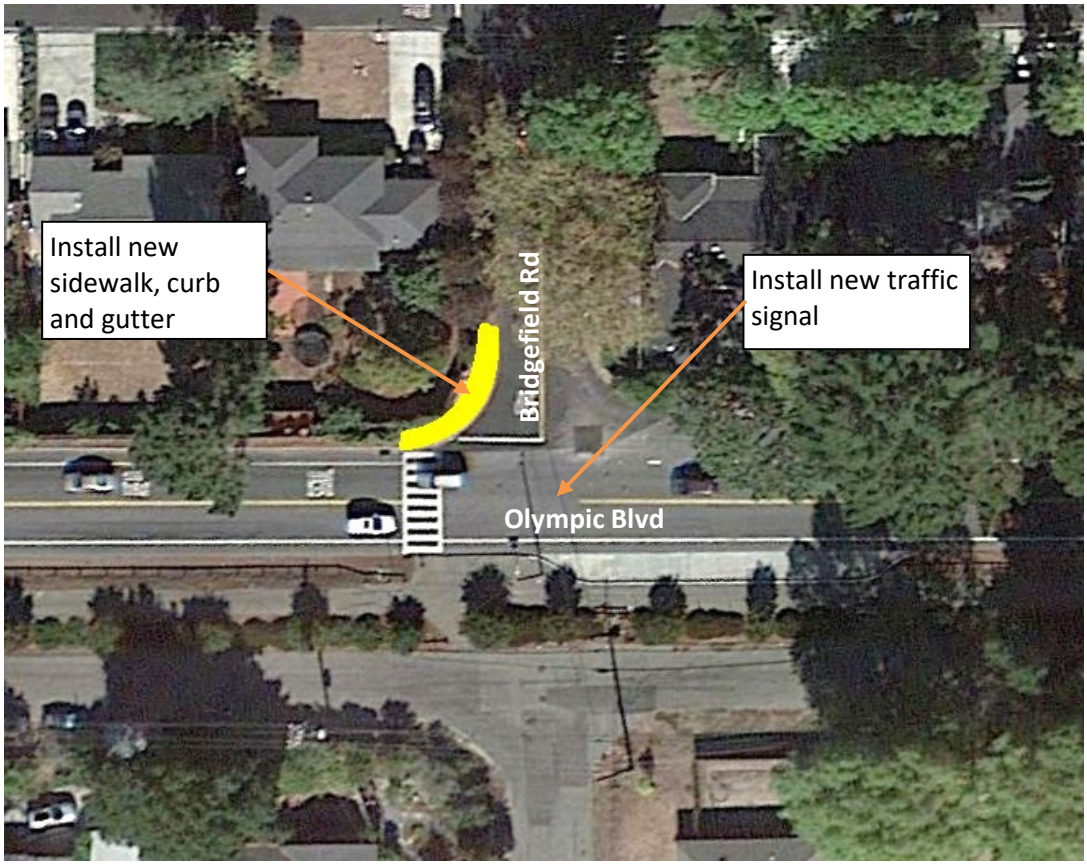
Planning Engineering (TE)	$ 51,000	Contract Items	$ 372,900
Preliminary Engineering (Design/Survey)*	$ 130,000	Other Costs (CON)	$ 75,000
Utility Coordination (Design)	$ 30,000	Contingency*	$ 56,000
Environmental (Environmental, Real Property)	$ 30,000	Subtotal (Contract Items)	$ 503,900
R/W Engineering (Survey)	$ -	Subtotal (Plan)	$ 51,000
Real Property Labor	$ -	Subtotal (PE)	$ 190,000
R/W Acquisition	$ -	Subtotal (R/W)	$ -
Construction Engineering *	$ 75,000		
Environmental Monitoring and Mitigation Fees	$ -		
SUBTOTAL of OTHER COSTS (ALL)	$ 316,000	Grand Total	$ 744,900
		Current Year	2016
		Escalation Year	2021
		Escalation Factor	13.4%
		➢ **TOTAL (in 2021 dollars)**	**$ 845,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

Project SWC7: Olympic Boulevard/Bridgefield Road Intersection Improvements



DKS Associates

Planning Cost Estimate

1970 Broadway Ste 740, Oakland CA 94612

Project Number **SWC8**

☑ Click here if the project schedule for this project is to be 50 days or more; also click here if this is a bridge project.

☐ Click here if this project is a surface treatment or overlay project.

Project Name: Boulevard Way Sidewalk Project

Project Location: Boulevard Way between Warren Road and Olympic Boulevard

Description Project will add sidewalk on the east side of the roadway.

Project Length (ft): 2100

Date of Estimate: May. 24, 2016

Prepared by: Tianjun Cao

Revision No.	
Revision Date	4/15/2021
Revised by	B. Sidhu

No.	Description	Quantity	Units	Unit Cost	Total
1	Construction Area Signs	10	EA	$ 550.00	$ 5,500
2	Traffic Control System	1	LS	$ 50,000.00	$ 50,000
3	Prepare Water Pollution Control Plan	1	LS	$ 6,000.00	$ 6,000
4	Remove Thermoplastic Traffic Stripe	2100	LF	$ 3.00	$ 6,300
5	Minor Structure (Sidewalk Cross Drain)	1	EA	$ 600.00	$ 600
6	Clearing and Grubbing	1	LS	$ 30,000.00	$ 30,000
7	Remove Tree	7	EA	$ 2,000.00	$ 14,000
8	Saw Cut Pavement Edges	2100	LF	$ 2.00	$ 4,200
9	Roadway Excavation	1283	CY	$ 45.00	$ 57,735
10	Imported Material (Shoulder Backing)	294	TON	$ 45.00	$ 13,230
11	Class 2 Aggregate Base	1397	TON	$ 45.00	$ 62,865
12	Hot Mix Asphalt (Type A)	2284	TON	$ 125.00	$ 285,500
13	Minor Concrete (Sidewalk)	10500	SF	$ 10.00	$ 105,000
14	ADA curb ramp (w/ detectable warning surface)	8	EA	$ 4,200.00	$ 33,600
15	Driveway Conform	3	EA	$ 10,000.00	$ 30,000
16	Curb and gutter	2100	LF	$ 45.00	$ 94,500
17	Earthwork	260	CY	$ 25.00	$ 6,500
18	Minor Concrete (Retaining Wall)	650	LF	$ 200.00	$ 130,000
19	Minor Structure (Inlet)	2	EA	$ 3,200.00	$ 6,400
20	Metal Beam Guard Railing	100	LF	$ 115.00	$ 11,500
21	Bridge Work	1	LS	$ 200,000.00	$ 200,000
22	C.3 Provisions and Misc. Drainage	1	LS	$ 70,000.00	$ 70,000
23	Sign Relocation	8	EA	$ 500.00	$ 4,000
24	Mailbox Removal and Replacement	6	EA	$ 300.00	$ 1,800
25	Relocate Fence	1	LS	$ 2,000.00	$ 2,000
26	Thermoplastic Traffic Stripe - Det. 27B, Right Edge L	2100	LF	$ 2.00	$ 4,200
27	Mobilization	1	LS	$ 124,000.00	$ 124,000

CONTRACT ITEMS LESS MOBILIZATION (TO NEAREST 1,000) $ 1,235,000

Project Number **SWC8**

Planning Engineering (TE)	$ 200,000	Contract Items	$ 1,359,000
Preliminary Engineering (Design/Survey)*	$ 408,000	Other Costs (CON)	$ 254,000
Utility Coordination (Design)	$ 50,000	Contingency*	$ 204,000
Environmental (Environmental, Real Property)	$ 200,000	Subtotal (Contract Items)	$ 1,817,000
R/W Engineering (Survey)	$ 50,000	Subtotal (Plan)	$ 200,000
Real Property Labor	$ 150,000	Subtotal (PE)	$ 658,000
R/W Acquisition	$ 500,000	Subtotal (R/W)	$ 700,000
Construction Engineering *	$ 204,000		
Environmental Monitoring and Mitigation Fees	$ 50,000		
SUBTOTAL of OTHER COSTS (ALL)	$ 1,812,000		
		Grand Total	$ 3,375,000
		Current Year	2016
		Escalation Year	2021
		Escalation Factor	13.4%
		➢ **TOTAL (in 2021 dollars)**	**$ 3,827,000**

* Preliminary Engineering is minimum 15% of contract items. (See Issues to Consider)

* Construction Engineering is 15% of contract items. ($20,000 min.)

* CONTINGENCY is 15% of contract items. ($10,000 min.)

LEGEND:

- CENTER LINE OF THE ROAD
- SIDEWALK
- RIGHT OF WAY LINE/PARCEL LINE
- 2' TO 3' HIGH RETAINING WALL
- TREE TO BE REMOVED
- UTILITY POLE
- SIGN
- CONC. CURB RAMP
- DRIVEWAY CONFORM
- EX. SD INLET
- COUNTY LIMITS
- EXISTING OR PROPOSED EDGE OF PAVEMENT

N

SCALE: 1" = 200'

Contra Costa County
Public Works
Department
255 GLACIER DRIVE MARTINEZ, CALIFORNIA 94553 PH: (925) 313-2000 FAX: (925) 313-2333

PROJECT LAYOUT

BOULEVARD WAY PEDESTRIAN PROJECT

FEDERAL ID NO.:

DB: TC CB: MH

DATE: NOV 2015

SHEET 1 OF 1

Olympic Corridor Trail Connector - Summary of Estimated Costs*

Project #: SWC9

Segment	Description	Cost[1]
2.2 Windtree Ct. to Newell Ct.	Widen existing path on north side to create 14 foot sidepath; redesign of Newell Ct. intersection and connections	$490,000
3 Newell Ct to Boulevard Way/Tice Valley Rd	Extend continuous path or sidewalks along north side	$613,556
4 Boulevard Way/Tice Valley Rd to Newell Ave	Continue the sidepath approximately 100 feet to connect to Newell Avenue (may be included with Segment 5)	$632,000
5 Newell Ave to I-680	Expand the existing sidewalks fronting the Villa townhome complex to create a 10 to 12 foot wide sidepath	$1,661,000
	Total (Year 2015)	**$3,397,000**
	Escalation Factor	17.27%
	Total (Year 2021)	**$3,984,000**

**Source: Olympic Corridor Connector Trail Study, June*

1) Costs for long-term projects for each segment

B.4 Segment 2.2: Olympic Boulevard – Windtree Court to Newell Court

Table B-7: Short-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$3,238
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$1,295
TRAFFIC CONTROL	1	LS	10%	$6,475
Subtotal				**$11,008**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Remove existing striping (no lead present)	8,840	LF	$2.00	$17,680
Subtotal				**$17,680**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
High visibility crosswalk	155	LF	$35.00	$5,425
Repaint stop bars and markings	3	EA	$800.00	$2,400
Buffered bike lane, pavement markings, and signs	2,200	LF	$7.58	$16,676
Miscellaneous 4" thermoplastic stripe	6,630	LF	$3.00	$19,890
Wayfinding signage	2	EA	$1,340.00	$2,680
Subtotal				**$47,071**
CONSTRUCTION SUBTOTAL				$75,759
CONTINGENCY			20%	$15,152
SURVEYING			5%	$3,788
PLANS, SPECIFICATIONS AND ESTIMATE			15%	$11,364
CONSTRUCTION ENGINEERING/ADMIN.			15%	$11,364
TOTAL				**$118,000**

Table B-8: Long-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$11,971
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$4,788
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	5%	$11,971
TRAFFIC CONTROL	1	LS	10%	$23,942
Subtotal				**$52,673**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	1,161	LF	$5.00	$5,805
Remove concrete pavement	100	SF	$10.00	$1,000
Remove curb/gutter	1,161	LF	$10.00	$11,610
Remove existing striping	6,966	LF	$2.00	$13,932
Subtotal				**$32,347**
Earthwork				
Clearing and grubbing	3,483	SF	$0.25	$871
Subtotal				**$871**

DESCRIPTION	QTY	UNIT	UNIT COST	COST
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct curb & gutter	1,161	LF	$55.00	$63,855
Construct 4" PCC sidewalk	100	SF	$15.00	$1,500
Construct 4" AC over 6" AB	1,1610	SF	$10.00	$116,100
Construct wide curb ramp with truncated dome surface	4	EA	$2,000.00	$8,000
Subtotal				**$189,455**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
Buffered bike lane and pavement markings	2,210	LF	$7.58	$16,752
Subtotal				**$16,752**
CONSTRUCTION SUBTOTAL				$292,098
CONTINGENCY			20%	$58,420
SURVEYING			5%	$14,605
PLANS, SPECIFICATIONS AND ENGINEERING			15%	$43,815
ENVIRONMENTAL DOCUMENTATION, PERMITTING			10%	$29,210
TECH STUDIES, MITIGATION			2.5%	$7,302
CONSTRUCTION ENGINEERING/ADMIN.			15%	$43,814
TOTAL				**$490,000**

Table B-9: Annual Maintenance Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT MAINTENANCE COST/YEAR	TOTAL MAINTENANCE COST/YEAR
Short-Term improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	2,200	LF	$10 / 1,000 LF	$22
Signs, Striping, and Pavement Markings	$47,071	IC	Installation Cost / 10	$4,707
Long-Term Improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	2,210	LF	$10 / 1,000 LF	$22
Signs, Striping, and Pavement Markings	$16,752	IC	Installation Cost / 10	$1,675
Sidepath Maintenance	1,178	LF	$2652 / 1,000 LF	$3,123
Sidepath Pavement Maintenance	$116,100	IC	Installation Cost / 20	$5,805

B.5 Segment 3: Olympic Boulevard – Newell Court to Boulevard Way/Tice Valley Boulevard

Table B-10: Short-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$6,018
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$2,407
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	2%	$2,407
TRAFFIC CONTROL	1	LS	10%	$12,037
Subtotal				**$22,870**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	160	LF	$5.00	$800
Remove concrete pavement	48	SF	$1.00	$48
Remove pavement markings	120	SF	$7.00	$840
Remove existing striping (no lead present)	5,372	LF	$2.00	$10,744
Subtotal				**$12,432**
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct AC curb	160	LF	$12.00	$1,920
Construct 4" AC over 6" AB	320	SF	$10.00	$3,200
Curb Ramp with truncated dome surface	4	EA	$1,400.00	$5,600
Subtotal				**$10,720**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
High visibility crosswalk	371	LF	$35.00	$12,985
Repaint stop bars and markings	5	EA	$800.00	$4,000
Buffered bike lane, pavement markings, and signs	3,955	LF	$7.58	$29,979
Bike lane, pavement markings, and signs	190	LF	$5.25	$998
HAWK/RRFB	2	EA	$22,250.00	$44,500
Wayfinding signage	2	EA	$1,340.00	$2,680
Yield pavement marking	38	SF	$7.00	$266
Green conflict markings	122	LF	$14.81	$1,807
Subtotal				**$97,214**
CONSTRUCTION SUBTOTAL				$143,236
CONTINGENCY			20%	$28,647
SURVEYING			5%	$7,162
PLANS, SPECIFICATIONS AND ESTIMATE			15%	$21,485
CONSTRUCTION ENGINEERING/ADMIN.			15%	$21,485
TOTAL				**$223,000**

Table B-11: Long-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$15,012
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$6,005
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	5%	$15,012
TRAFFIC CONTROL	1	LS	10%	$30,025
Subtotal				**$66,054**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	1,170	LF	$5.00	$5,850
Remove AC pavement	1,125	SF	$0.80	$900
Remove concrete pavement	200	SF	$10.00	$2,000
Remove existing storm drain culvert	1	EA	$1,000.00	$1,000
Remove and relocate utility or signal cabinets (up to three)	2	EA	$3,000.00	$6,000
Remove curb/gutter	1,170	LF	$10.00	$11,700
Tree removal	11	EA	$500.00	$5,500
Remove existing striping	1,170	LF	$2.00	$2,340
Subtotal				**$35,290**
Earthwork				
Clearing and grubbing	8,730	SF	$0.25	$2,183
Subtotal				**$2,183**
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct curb & gutter	2,010	LF	$55.00	$110,550
Construct 4" PCC sidewalk	9,855	SF	$15.00	$147,825
Construct new inlet to existing storm drain	1	EA	$3,000.00	$3,000
Curb ramp with truncated dome surface	1	EA	$1,400.00	$1,400
Subtotal				**$262,775**
CONSTRUCTION SUBTOTAL				$366,302
CONTINGENCY			20%	$73,260
SURVEYING			5%	$18,315
PLANS, SPECIFICATIONS AND ENGINEERING			15%	$54,945
ENVIRONMENTAL DOCUMENTATION, PERMITTING			10%	$36,630
TECH STUDIES, MITIGATION			2.5%	$9,158
CONSTRUCTION ENGINEERING/ADMIN.			15%	$54,945
TOTAL				**$613,556**

Table B-12: Annual Maintenance Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT MAINTENANCE COST/YEAR	TOTAL MAINTENANCE COST/YEAR
Short-Term improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	3,955	LF	$10 / 1,000 LF	$40
Signs, Striping, and Pavement Markings	$97,214	IC	Installation Cost / 10	$9,721
Sidepath Maintenance	160	LF	$2652 / 1,000 LF	$424
Sidepath Pavement Maintenance	$3,200	IC	Installation Cost / 20	$160
Long-Term Improvement Concept				
Sidepath Maintenance	1,792	LF	$2652 / 1,000 LF	$4,752
Sidepath Pavement Maintenance	$147,825	IC	Installation Cost / 20	$7,391

B.6 Segment 4: Olympic Boulevard – Boulevard Way/Tice Valley Boulevard to Newell Avenue

Table B-13: Short-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$17,042
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$6,817
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	5%	$17,042
TRAFFIC CONTROL	1	LS	10%	$34,083
Subtotal				**$74,983**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	1,370	LF	$5.00	$6,850
Remove AC pavement	8,780	SF	$0.80	$7,024
Remove concrete pavement	560	SF	$1.00	$560
Remove curb/gutter	1,370	LF	$10.00	$13,700
Remove existing striping (no lead present)	2,740	LF	$2.00	$5,480
Subtotal				**$33,614**
Earthwork				
Soil for new landscape areas	152	CY	$20.00	$3,040
Subtotal				**$3,040**
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct curb & gutter	1,390	LF	$55.00	$76,450
Construct 4" AC over 6" AB	14,540	SF	$10.00	$145,400
Curb Ramp with truncated dome surface	1	EA	$1,400.00	$1,400
Subtotal				**$223,250**
Planting				
Landscaping (1 gallon shrubs, 15 gallon trees, irrigation)	4,110	SF	$6.50	$26,715
Irrigation meter/connection, backflow, and controller	1	EA	$15,000.00	$15,000
Subtotal				**$41,715**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
Bike lane, pavement markings, and signs	5,138	LF	$5.25	$26,972
Miscellaneous 4" thermoplastic stripe	2,740	LF	$3.00	$8,220
Wayfinding signage	3	EA	$1,340.00	$4,020
Subtotal				**$39,212**
CONSTRUCTION SUBTOTAL				$415,814
CONTINGENCY			20%	$83,163
SURVEYING			5%	$20,791
PLANS, SPECIFICATIONS AND ESTIMATE			15%	$62,372
CONSTRUCTION ENGINEERING/ADMIN.			15%	$62,372
TOTAL				**$645,000**

Table B-14: Long-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$15,445
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$6,178
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	5%	$15,445
TRAFFIC CONTROL	1	LS	10%	$30,890
Subtotal				**$67,958**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	158	LF	$5.00	$790
Remove AC pavement	13,020	SF	$0.80	$10,416
Remove concrete pavement	200	SF	$10.00	$2,000
Remove curb/gutter	158	LF	$10.00	$1,580
Subtotal				**$14,786**
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct curb & gutter	158	LF	$55.00	$8,690
Construct 4" PCC sidewalk	474	SF	$15.00	$7,110
Construct 4" AC over 6" AB	21,700	SF	$10.00	$217,000
Extend existing storm drain system	4	EA	$1,000.00	$4,000
Subtotal				**$236,800**
Planting				
Landscaping (1 gallon shrubs, 5 gallon shrubs, irrigation)	6,510	SF	$6.50	$42,315
Irrigation meter/connection, backflow, and controller	1	EA	$15,000.00	$15,000
Subtotal				**$57,315**
CONSTRUCTION SUBTOTAL				$376,859
CONTINGENCY			20%	$75,372
SURVEYING			5%	$18,843
PLANS, SPECIFICATIONS AND ENGINEERING			15%	$56,529
ENVIRONMENTAL DOCUMENTATION, PERMITTING			10%	$37,686
TECH STUDIES, MITIGATION			2.5%	$9,421
CONSTRUCTION ENGINEERING/ADMIN.			15%	$56,529
TOTAL				**$632,000**

Table B-15: Annual Maintenance Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT MAINTENANCE COST/YEAR	TOTAL MAINTENANCE COST/YEAR
Short-Term improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	5,138	LF	$10 / 1,000 LF	$51
Signs, Striping, and Pavement Markings	$39,212	IC	Installation Cost / 10	$3,921
Sidepath Maintenance	1,510	LF	$2652 / 1,000 LF	$4,005
Sidepath Pavement Maintenance	$145,400	IC	Installation Cost / 20	$7,270
Landscape Maintenance	1,370	LF	$900 / 1,000 LF	$1,233
Long-Term Improvement Concept				
Sidepath Maintenance	2,170	LF	$2652 / 1,000 LF	$5,755
Sidepath Pavement Maintenance	$217,000	IC	Installation Cost / 20	$10,850
Landscape Maintenance	2,170	LF	$900 / 1,000 LF	$1,953

B.7 Segment 5: Olympic Boulevard – Newell Avenue to I-680

Table B-16: Short-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$4,4256
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$1,770
TRAFFIC CONTROL	1	LS	10%	$8,852
Subtotal				**$15,048**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Remove existing striping (no lead present)	5,994	LF	$2.00	$11,987
Subtotal				**$11,987**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
Bike lane, pavement markings, and signs	3,746	LF	$5.25	$19,667
HAWK/RRFB	2	EA	$22,250.00	$44,500
Miscellaneous 4" thermoplastic stripe	4,121	LF	$3.00	$12,362
Subtotal				**$76,528**
CONSTRUCTION SUBTOTAL				$103,563
CONTINGENCY			20%	$20,713
SURVEYING			5%	$5,178
PLANS, SPECIFICATIONS AND ESTIMATE			15%	$15,534
CONSTRUCTION ENGINEERING/ADMIN.			15%	$15,534
TOTAL				**$161,000**

Table B-17: Long-Term Improvements Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT COST	COST
MOBILIZATION	1	LS	5%	$40,624
GENERAL CONDITIONS, BONDS AND INSURANCE	1	LS	2%	$16,249
EROSION CONTROL - INCLUDES ALL BMPS, SWPPP AND REPORTING	1	LS	5%	$40,624
TRAFFIC CONTROL	1	LS	10%	$81,247
Subtotal				**$178,744**
Sitework, Demolition and Removal - includes all demolition, site preparation for all construction; relocation or re-setting of utilities; temporary construction fencing.				
Sawcut pavement	5,919	LF	$5.00	$29,595
Remove AC pavement	9,450	SF	$0.80	$7,560
Remove concrete pavement	18,900	SF	$5.00	$94,500
Remove and relocate existing light standard	5	EA	$2,000.00	$10,000
Remove and relocate utility or signal cabinets (up to three)	1	EA	$3,000.00	$3,000
Remove curb/gutter	5,919	LF	$10.00	$59,190
Tree removal	6	EA	$500.00	$3,000
Remove existing striping	7,560	LF	$2.00	$15,120
Subtotal				**$221,965**

DESCRIPTION	QTY	UNIT	UNIT COST	COST
Concrete Work and Asphalt Paving - includes concrete curbs, 4" PCC sidewalk, Type I pedestrian ramps, concrete pads, Sidepath				
Construct curb & gutter	5,919	LF	$55.00	$325,545
Construct 4" PCC sidewalk	9,450	SF	$15.00	$141,750
Construct new inlet to existing storm drain	5	EA	$3,000.00	$15,000
Colored stamped asphalt or concrete	5,619	SF	$15.00	$84,285
Subtotal				**$566,580**
Planting				
15 gallon trees with protective posts and root barriers, irrigation	6	EA	$1,600.00	$9,600
Subtotal				**$9,600**
Signs and Pavement Markings - includes painted traffic lines and markings on pavement, and traffic signage.				
Buffered bike lane and pavement markings	1,890	LF	$7.58	$14,326
Subtotal				**$14,326**
CONSTRUCTION SUBTOTAL				$991,215
CONTINGENCY			20%	$198,243
SURVEYING			5%	$49,561
PLANS, SPECIFICATIONS AND ENGINEERING			15%	$148,682
ENVIRONMENTAL DOCUMENTATION, PERMITTING			10%	$99,121
TECH STUDIES, MITIGATION			2.5%	$24,780
CONSTRUCTION ENGINEERING/ADMIN.			15%	$148,682
TOTAL				**$1,661,000**

Table B-18: Annual Maintenance Cost Estimate

DESCRIPTION	QTY	UNIT	UNIT MAINTENANCE COST/YEAR	TOTAL MAINTENANCE COST/YEAR
Short-Term improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	3,746	LF	$10 / 1,000 LF	$37.46
Signs, Striping, and Pavement Markings	$76,528	IC	Installation Cost / 10	$7,653
Long-Term Improvement Concept				
Bicycle Lanes and Bicycle Route Sweeping	1,890	LF	$10 / 1,000 LF	$19
Signs, Striping, and Pavement Markings	$14,326	IC	Installation Cost / 10	$1,433
Sidepath Maintenance	158	LF	$2652 / 1,000 LF	$418
Sidepath Pavement Maintenance	$14,326	IC	Installation Cost / 20	$716