a. Cost-Effectiveness Analysis

A Benefit-Cost Analysis (BCA) was conducted in conformance with US DOT guidance to assess the impacts of the North Tarrant Express (NTE) Segment 3C project. The grant request is limited to support for two project elements and right-of-way (ROW) acquisition that were deferred during construction contract negotiations due to lack of funding. The two elements include wishbone ramps between the managed toll lanes and general purpose lanes, and intersection improvements at I-35W and Golden Triangle Boulevard. Insufficient information was available for deferred project elements to support an incremental BCA that isolates the impacts of the two additional construction elements and the ROW acquisition; therefore the BCA encompasses the benefits and costs for the entire Segment 3C project. The BCA conducted for the Segment 3C project indicated a *favorable* benefit/cost (B/C) ratio, with the monetized benefits of the project exceeding the estimated project-related costs.

The 2016 Cal-B/C TIGER Grant Application version of a model developed by the California Department of Transportation (Caltrans) was used for the Segment 3C project. This version incorporates project costs by category and benefits related to travel time, vehicle operation, accidents, and emissions. The model incorporated the parameter updates, including unit values emissions, accidents, and other factors made by Caltrans to reflect USDOT guidance for 2016 TIGER grants.

A summary of the BCA is provided in Section (i) of this appendix. Section (ii) discusses the Cal-B/C inputs used for analysis of the Segment 3C project, and Section (iii) provides details regarding the individual BCA results. All monetary values presented in this appendix were adjusted to 2015 dollars, the default value of the 2016 TIGER version of the Cal B/C model, based on the Gross Domestic Product Price Index, unless otherwise stated. A seven percent (7%) discount rate was used to compute net present value of benefits and costs.

(i) Benefit-Cost Analysis Summary

The Cal B/C model calculates the B/C ratio based on inputs including the type of project, existing and future highway design and traffic data, and estimated project costs. Table 1 provides a summary of the Cal B/C results for the Segment 3C project.

TABLE 1: SEGMENT 3C CAL-B/C RESULTS

Life-Cycle Costs (mil. $)	$583.7
Life-Cycle Benefits (mil. $)	$775.2
Net Present Value (mil. $)	$191.4
Benefit / Cost Ratio:	1.33
Rate of Return on Investment:	9.6%
Payback Period:	12 years

(ii) CAL-B/C MODEL INPUTS

The Cal-B/C model includes a number of default parameters including hourly wage, value of time, fuel price and taxes, accident costs by type of accident, and a maximum volume-to-capacity ratio. Sources for these default values include the Office of Management and Budget (OMB), the Bureau of Labor Statistics (BLS), USDOT Department Guidance, the IDAS model, the American Transportation Research Institute, AAA, the California Department of Transportation, and the California Board of Equalization. Parameters were updated by Caltrans to support 2016 TIGER applications. The average fuel price was updated to reflect the average price of fuel in Fort Worth as of March 30, 2016. Prices were rounded up to the nearest 0.50 to be conservative.[1] The default values were used in this BCA unless otherwise stated.[2]

Users are also required to input project-specific data into the model. These inputs are discussed in the following subsections. The model identifies the required project-specific data inputs with green cells.

(a) PROJECT DATA

The 2016 TIGER version of the Cal-B/C model requires users to select the project type from a list. The Segment 3C project was identified as a HOT Lane Addition project. Users must also select a project location that corresponds to California urban or rural peak traffic and accident parameters. The Segment 3C project was identified as rural. The 2016 TIGER version of the model allows users to override default settings that indicate whether other inputs reflect one-way or two-way data. Data for the Segment 3C project was entered as two-way data and coded in this section accordingly. The length of the construction period was identified as three years for the Segment 3C project. Table 2 provides the project data entered for the Segment 3C project.

TABLE 2: SEGMENT 3C CAL-B/C PROJECT DATA

Type of Project	Include toll payers as HOVs & check AVOs		
Select project type from list	HOT Lane Addition		
Project Location (enter 1 for So. Cal., 2 for No. Cal., or 3 for rural)	3		
Length of Construction Period	3	years	
One- or Two-Way Data	2	enter 1 or 2	
	Current		
Length of Peak Period(s) (up to 24 hrs)	5.0	hours	

[1] Average price of fuel in Fort Worth as of 03/30/2016 retrieved from www.fortworthgasprices.com.

[2] California Department of Transportation. 2016. *2016 Cal-B/C TIGER Grant Application Model.* Retrieved on 3/25/2016 from http://www.dot.ca.gov/hq/tpp/offices/eab/LCBC_Analysis_Model.html

(b) Highway Design and Traffic Data

The Cal-B/C model also requires project-specific information regarding highway design and traffic data. In the highway design section of the 2016 TIGER version of the model, users must enter the roadway type, number of lanes, free-flow speed, ramp design speed, and the length of the highway segment. The model also requires average daily traffic (ADT) data. This information must be provided for the current (or "base") year, and also forecasted for year 20 under a "no build" scenario. The model then calculates the "build" scenario. Inputs for current ADT (2017), forecasted ADT (for 2040), and HOV volume are based on the North Central Texas Council of Governments' (NCTCOG) Mobility 2040 Metropolitan Transportation Plan.[3] The no build maximum speed was estimated based on posted speed limit signs. Table 3 summarizes the project-specific data entered in the highway design and traffic data sections for the Segment 3C project.

TABLE 3: SEGMENT 3C CAL-B/C HIGHWAY AND TRAFFIC DATA

		No Build	Build
Highway Design			
Roadway Type (Fwy, Exp, Conv Hwy)		F	F
Number of General Traffic Lanes		4	4
Number of HOV/HOT Lanes		0	4
HOV Restriction (2 or 3)		2	
Exclusive ROW for Buses (y/n)		N	
Highway Free-Flow Speed		70	70
Ramp Design Speed (if aux. lane/off-ramp proj.)		30	30
Length (in miles)	Highway Segment	8.0	8.0
	Impacted Length	8.0	8.0
Average Daily Traffic			
	Current	108,788	
		No Build	Build
	Base (Year 1)	123,069	123,069
	Forecast (Year 20)	218,273	218,273
Average Hourly HOV/HOT Lane Traffic		0	1,030
Percent of Induced Trips in HOV (if HOT or 2-to-3 conv.)			0%
Percent Traffic in Weave			0.0%
Percent Trucks (include RVs, if applicable)		12%	12%
Truck Speed		70	

(c) Accident Data

Model users must enter three-year accident data for the project area and statewide accidents rates. Three-year accident data[5] was based on TxDOT Crash Records Information System (CRIS) data and statewide average data was based on the crash rate for four or more lanes, divided highway.[6] Table 4**Error! Reference source not found.** shows the Cal-B/C accident data inputs for the Segment 3C project.

[3] North Central Texas Council of Governments. Mobility 2040 Metropolitan Transportation Plan, IH-35W Tarrant to Eagle Total Weekday Volumes, distance-weighted average traffic volume for 2017 and 2040. Year 1 HOV volume based on linear interpolation from zero to 2040 projected managed lane volume per NCTCOG, likely understates early benefits of project.

[5] CRIS Data 2013-2016.

[6] Texas statewide 2014 crash rate for four or more lanes, divided highway available at http://ftp.dot.state.tx.us/pub/txdot/trf/crash-statistics/2014/02.pdf

TABLE 4: SEGMENT 3C CAL-B/C HIGHWAY ACCIDENT DATA

Actual 3-Year Accident Data (from Table B)	Count (No.)	Rate
Total Accidents (Tot)	518	0.29
Fatal Accidents (Fat)	6	0.003
Injury Accidents (Inj)	192	0.11
Property Damage Only (PDO) Accidents	320	0.18
Statewide Basic Average Accident Rate	No Build	Build
Rate Group		
Accident Rate (per million vehicle-miles)	1.33	1.33
Percent Fatal Accidents (Pct Fat)	0.7%	0.7%
Percent Injury Accidents (Pct Inj)	62.5%	62.5%

(iii) PROJECT COSTS

Estimated project costs must also be entered into the Cal-B/C model under the following categories, as appropriate: Project Support, ROW, Construction, Maintenance/Operations, Rehabilitation, or Mitigation. These costs are presented as constant dollars and then discounted using a seven percent (7%) annual rate to reflect their present value.

The initial design and construction costs for the Network are approximately **$611.5 million** as described in more detail in the body of this application. The design and construction period is assumed to be three years with annual construction expenditures assumed to be allocated equally between the second (2019) and the third (2020) year of the construction period. The total project cost equal **$583.7 million** in present value terms, including maintenance/operations and rehabilitation. The breakdown of project costs as reflected in the Cal B/C analysis is indicated in Table 5 below.

TABLE 5: SEGMENT 3C CAL-B/C PROJECT COSTS

Year	DIRECT PROJECT COSTS					TOTAL COSTS (in dollars)	
	INITIAL COSTS			SUBSEQUENT COSTS			
	Project Support	R / W	Construction	Maint./ Op.	Rehab.	Constant Dollars	Present Value at 7%
Construction Period							
1	$79,410	$18,000	$0			$97,410,000	$97,410,000
2	$0	$0	$257,055			$257,055,000	$240,238,318
3	$0	$0	$257,055			$257,055,000	$224,521,792
4	$0	$0	$0			$0	$0
5	$0	$0	$0			$0	$0
6	$0	$0	$0			$0	$0
7	$0	$0	$0			$0	$0
8	$0	$0	$0			$0	$0
Subtotal	$79,410	$18,000	$514,110			$611,520,000	562,170,110
Project Open							
1				$1,144	$0	$1,143,541	$933,470
2				$1,381	$0	$1,381,201	$1,053,711
3				$1,388	$13	$1,401,460	$999,222
4				$1,410	$0	$1,409,833	$939,431
5				$1,420	$220	$1,639,342	$1,020,900
6				$1,428	$12	$1,440,555	$838,416
7				$1,431	$79	$1,509,853	$821,260
8				$1,438	$531	$1,969,357	$1,001,121
9				$1,412	$1,708	$3,119,556	$1,482,078
10				$1,430	$4,162	$5,591,810	$2,482,830
11				$1,423	$3,764	$5,187,292	$2,152,542
12				$1,376	$1,792	$3,167,699	$1,228,488
13				$1,395	$624	$2,018,905	$731,744
14				$1,405	$691	$2,095,253	$709,735
15				$1,422	$518	$1,939,957	$614,141
16				$1,423	$655	$2,077,652	$614,702
17				$1,404	$0	$1,404,046	$388,230
18				$1,433	$2,822	$4,255,154	$1,099,613
19				$1,382	$2,461	$3,842,895	$928,110
20				$1,442	$5,364	$6,806,630	$1,536,346
Subtotal				$27,987	$25,415	$53,401,991	$21,576,091
Total	$79,410	$18,000	$514,110	$27,987	$25,415	$664,921,991	$583,746,201

Note: Initial and subsequent costs are entered in thousands of dollars.

(iv) CAL-B/C MODEL RESULTS

The Cal-B/C model evaluates benefits related to travel time savings, vehicle operating cost savings, accident reduction, and emissions reduction, as described below. Figures 1 and 2 graphically depict the share by category of total project life-cycle benefits and total project life-cycle costs associated with the Segment 3C project, as discussed in more detail in the following sub-sections.

FIGURE 1: NETWORK ITEMIZED BENEFITS, PRESENT VALUE

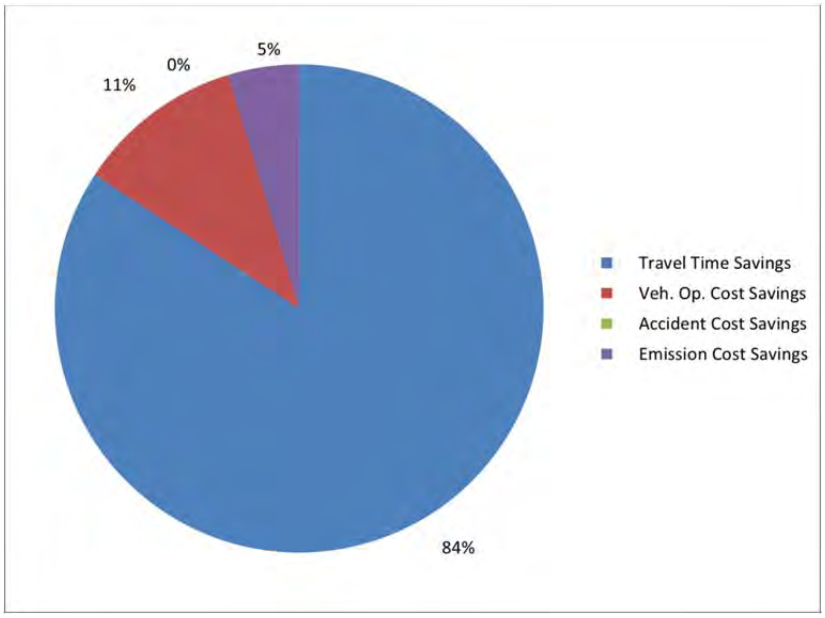
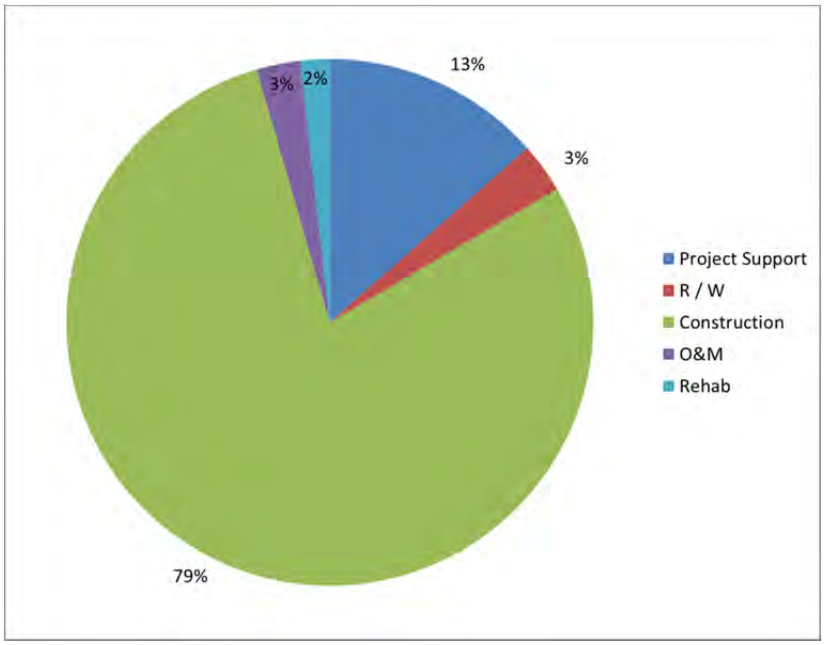


FIGURE 2: NETWORK PROJECT COSTS, PRESENT VALUE



(a) Travel Time Savings

The Cal-B/C model evaluates travel time benefits with five formulas that calculate average annual volume, travel time, travel time savings, and induced travel. Average value of time varies by vehicle type. The Cal-B/C model interpolates traffic volumes and travel speeds between the base year and year 20 of the project. Refer to the formulas provided for more information about each calculation. Average Vehicle Occupancy was obtained from a University of South Florida analysis of statewide rates based on Census data.[7] Table 6 shows the total travel time benefit and the travel time benefit by year for the Segment 3C project.

$$Average\ Annual\ Volume = Average\ Daily\ Traffic\ x\ Number\ of\ Days\ in\ Model\ Year$$

$$Travel\ Time = Average\ Vehicle\ Occupancy\ x\ Average\ Annual\ Volume\ x\ Affected\ Length/\ Speed$$

$$Travel\ Time\ Savings = Travel\ Time\ Reduction\ x\ Average\ Value\ of\ Time$$

$$Induced\ Travel = Change\ in\ Trips\ x\ Change\ in\ Travel\ Time\ x\ 0.5$$

[7] Average vehicle occupancy for Texas based on University of South Florida, State Averages for Private Vehicle Occupancy, Carpool Size and Vehicles per 100 Workers, analysis based on 2000 Census. Available at http://www.nctr.usf.edu/clearinghouse/censusavo.htm

TABLE 6: SEGMENT 3C CAL-B/C TRAVEL TIME SAVINGS BENEFITS

Year	AVERAGE VOLUME (vehicles/yr)		AVERAGE SPEED (mph)		ANNUAL PERSON-TRIPS (trips/yr)		AVERAGE TRAVEL TIME (hours)		TIME BENEFIT (person-hours/yr)		Constant Dollars	Present Value at 7%
	No Build	Build	No Build	Build	No Build	Build	No Build	Build	Existing Users	New (Induced)		
1	31,382,470	31,382,470			34,034,532	35,419,280			1,928,878	44,004	$30,648,006	$25,017,902
20	55,659,545	55,659,545			60,363,208	70,979,609			17,607,785	(3,317,737)	$251,972,357	$56,873,478
2	32,660,211	32,660,211			35,420,252	37,290,876			2,077,634	50,522	$33,205,827	$25,332,566
3	33,937,952	33,937,952			36,805,972	39,162,473			2,242,659	51,446	$35,963,507	$25,641,483
4	35,215,693	35,215,693			38,191,692	41,034,069			2,426,409	46,028	$38,952,890	$25,955,955
5	36,493,434	36,493,434			39,577,411	42,905,665			2,631,843	33,380	$42,212,591	$26,287,880
6	37,771,174	37,771,174			40,963,131	44,777,261			2,862,560	12,440	$45,789,828	$26,650,097
7	39,048,915	39,048,915			42,348,851	46,648,858			3,122,975	(18,072)	$49,742,870	$27,056,825
8	40,326,656	40,326,656			43,734,571	48,520,454			3,418,560	(59,715)	$54,144,365	$27,524,250
9	41,604,397	41,604,397			45,120,291	50,392,050			3,756,174	(114,403)	$59,085,923	$28,071,296
10	42,882,138	42,882,138			46,506,010	52,263,646			4,144,520	(184,519)	$64,684,536	$28,720,707
11	44,159,878	44,159,878			47,891,730	54,135,243			4,594,803	(273,062)	$71,091,775	$29,500,559
12	45,437,619	45,437,619			49,277,450	56,006,839			5,121,677	(383,864)	$78,507,232	$30,446,458
13	46,715,360	46,715,360			50,663,170	57,878,435			5,744,665	(521,896)	$87,198,688	$31,604,817
14	47,993,101	47,993,101			52,048,890	59,750,031			6,490,329	(693,731)	$97,533,260	$33,037,890
15	49,270,841	49,270,841			53,434,609	61,621,627			7,395,720	(908,240)	$110,027,149	$34,831,778
16	50,548,582	50,548,582			54,820,329	63,493,224			8,514,051	(1,177,698)	$125,428,322	$37,109,714
17	51,826,323	51,826,323			56,206,049	65,364,820			9,924,499	(1,519,585)	$144,860,534	$40,055,145
18	53,104,064	53,104,064			57,591,769	67,236,416			11,750,090	(1,959,676)	$170,089,005	$43,954,231
19	54,381,805	54,381,805			58,977,489	69,108,012			14,192,688	(2,537,621)	$204,046,384	$49,279,872
Total												**$652,952,904**

(b) Vehicle Operating Cost Savings

The Cal-B/C model determines the vehicle operating costs benefit by calculating vehicle miles traveled, fuel cost, and non-fuel costs. The model generates calculations for vehicles and trucks based on a Percent Trucks input value. The Percent Trucks was entered as 11.6% based on a 2007 Traffic Analysis study.[8] Refer to the formulas for more information about each calculation. Table 7 provides the total vehicle operating cost benefit and the vehicle operating cost benefit by year for the Segment 3C project.

$$Vehicles\ Miles\ Traveled = Affected\ Length\ x\ Average\ Annual\ Volume$$

$$Fuel\ Cost = Vehicle\ Miles\ Traveled\ x\ Fuel\ Consumption\ x\ Fuel\ Price$$

$$Non\text{-}Fuel\ Cost = Vehicle\ Miles\ Traveled\ x\ Cost\ Per\ Mile$$

[8] Percent Trucks is based on Wilbur Smith Associates, Traffic Analysis for Highway Design, 2007.

TABLE 7: SEGMENT 3C CAL-B/C VEHICLE OPERATING COST SAVINGS BENEFITS

Year	AVERAGE VOLUME (vehicles/yr)		AVERAGE SPEED (mph)		TOTAL VMT (veh-miles/yr)		BENEFITS ($/yr)		Constant Dollars	Present Value at 7%
	No Build	Build	No Build	Build	No Build	Build	Fuel Costs	Non-Fuel Costs		
1	31,382,470	31,382,470	356.0	407.6	251,059,763	251,059,763	$3,189,971	($0)	$3,189,971	$2,603,967
20	55,659,545	55,659,545	314.8	321.5	445,276,364	445,276,364	$22,386,972	$0	$22,386,972	$5,053,034
2	32,660,211	32,660,211	353.8	403.1	261,281,689	261,281,689	$3,497,846	($0)	$3,497,846	$2,668,490
3	33,937,952	33,937,952	351.7	398.5	271,503,616	271,503,616	$3,961,096	($0)	$3,961,096	$2,824,207
4	35,215,693	35,215,693	349.5	394.0	281,725,542	281,725,542	$4,496,104	($0)	$4,496,104	$2,995,944
5	36,493,434	36,493,434	347.3	389.5	291,947,468	291,947,468	$5,262,148	($0)	$5,262,148	$3,277,001
6	37,771,174	37,771,174	345.2	384.9	302,169,395	302,169,395	$6,071,234	($0)	$6,071,234	$3,533,514
7	39,048,915	39,048,915	343.0	380.4	312,391,321	312,391,321	$6,918,376	($0)	$6,918,376	$3,763,138
8	40,326,656	40,326,656	340.8	375.9	322,613,247	322,613,247	$7,922,738	($0)	$7,922,738	$4,027,518
9	41,604,397	41,604,397	338.7	371.3	332,835,174	332,835,174	$8,500,503	($0)	$8,500,503	$4,038,528
10	42,882,138	42,882,138	336.5	366.8	343,057,100	343,057,100	$9,740,057	($0)	$9,740,057	$4,324,702
11	44,159,878	44,159,878	334.3	362.3	353,279,026	353,279,026	$11,000,438	($0)	$11,000,438	$4,564,791
12	45,437,619	45,437,619	332.1	357.8	363,500,953	363,500,953	$12,279,158	($0)	$12,279,158	$4,762,069
13	46,715,360	46,715,360	330.0	353.2	373,722,879	373,722,879	$13,557,825	($0)	$13,557,825	$4,913,980
14	47,993,101	47,993,101	327.8	348.7	383,944,805	383,944,805	$14,828,700	($0)	$14,828,700	$5,022,994
15	49,270,841	49,270,841	325.6	344.2	394,166,732	394,166,732	$16,595,358	($0)	$16,595,358	$5,253,665
16	50,548,582	50,548,582	323.5	339.6	404,388,658	404,388,658	$18,048,204	($0)	$18,048,204	$5,339,812
17	51,826,323	51,826,323	321.3	335.1	414,610,585	414,610,585	$20,045,449	($0)	$20,045,449	$5,542,734
18	53,104,064	53,104,064	319.1	330.6	424,832,511	424,832,511	$21,829,261	($0)	$21,829,261	$5,641,096
19	54,381,805	54,381,805	317.0	326.0	435,054,437	435,054,437	$23,399,082	$0	$23,399,082	$5,651,185
Total										**$85,802,369**

(c) Accident Reduction

The model evaluates the accident cost benefits by calculating vehicle-miles traveled and highway accident costs. Highway accident costs are calculated by accident type. Refer to the formulas provided for more information about each calculation. Table 8 shows the total accident cost savings benefit and the accident cost savings benefit by year for the Segment 3C project.

$$Vehicle\ Miles\ Traveled = Affected\ Length\ x\ Average\ Volume$$

$$Highway\ Accident\ Costs = Vehicle\ Miles\ Traveled\ x\ Rate\ x\ Cost/Mile$$

TABLE 8: SEGMENT 3C CAL-B/C ACCIDENT REDUCTION BENEFITS

Year	AVERAGE VOLUME (vehicles/yr)		TOTAL VMT (veh-miles/yr)		ACCIDENT COSTS ($/yr)		Constant Dollars	Present Value at 7%
	No Build	Build	No Build	Build	No Build	Build		
1	31,382,470	31,382,470	251,059,763	251,059,763	$48,307,915	$48,307,915	$0	$0
20	55,659,545	55,659,545	445,276,364	445,276,364	$85,678,297	$85,678,297	$0	$0
2	32,660,211	32,660,211	261,281,689	261,281,689	$50,274,778	$50,274,778	($0)	($0)
3	33,937,952	33,937,952	271,503,616	271,503,616	$52,241,640	$52,241,640	($0)	($0)
4	35,215,693	35,215,693	281,725,542	281,725,542	$54,208,502	$54,208,502	($0)	($0)
5	36,493,434	36,493,434	291,947,468	291,947,468	$56,175,364	$56,175,364	$0	$0
6	37,771,174	37,771,174	302,169,395	302,169,395	$58,142,226	$58,142,226	($0)	($0)
7	39,048,915	39,048,915	312,391,321	312,391,321	$60,109,088	$60,109,088	($0)	($0)
8	40,326,656	40,326,656	322,613,247	322,613,247	$62,075,951	$62,075,951	$0	$0
9	41,604,397	41,604,397	332,835,174	332,835,174	$64,042,813	$64,042,813	($0)	($0)
10	42,882,138	42,882,138	343,057,100	343,057,100	$66,009,675	$66,009,675	$0	$0
11	44,159,878	44,159,878	353,279,026	353,279,026	$67,976,537	$67,976,537	$0	$0
12	45,437,619	45,437,619	363,500,953	363,500,953	$69,943,399	$69,943,399	($0)	($0)
13	46,715,360	46,715,360	373,722,879	373,722,879	$71,910,262	$71,910,262	$0	$0
14	47,993,101	47,993,101	383,944,805	383,944,805	$73,877,124	$73,877,124	($0)	($0)
15	49,270,841	49,270,841	394,166,732	394,166,732	$75,843,986	$75,843,986	($0)	($0)
16	50,548,582	50,548,582	404,388,658	404,388,658	$77,810,848	$77,810,848	$0	$0
17	51,826,323	51,826,323	414,610,585	414,610,585	$79,777,710	$79,777,710	$0	$0
18	53,104,064	53,104,064	424,832,511	424,832,511	$81,744,572	$81,744,572	($0)	($0)
19	54,381,805	54,381,805	435,054,437	435,054,437	$83,711,435	$83,711,435	$0	$0
Total								**$0**

(d) EMISSIONS REDUCTION

The Cal-B/C model determines an emissions reduction benefit by calculating vehicles-miles traveled and highway emissions costs. Emissions costs are calculated by emissions type. Refer to the formulas for more information about each calculation. Table 9 provides the total emissions benefit and the emissions benefit by year for the Segment 3C project.

$$Vehicle\ Miles\ Traveled = Affected\ Length\ x\ Average\ Annual\ Volume$$

$$Highway\ Emissions\ Cost = (VMT\ x\ Rate\ x\ Cost/Mile)$$

TABLE 9: SEGMENT 3C CAL-B/C EMISSIONS REDUCTION BENEFITS

Year	AVERAGE VOLUME (vehicles/yr)		AVERAGE SPEED (mph)		TOTAL VMT (veh-miles/yr)		RUNNING EMISSIONS ($/yr)		STARTING EMISSIONS ($/yr)		Constant Dollars	Present Value at 7%
	No Build	Build	No Build	Build	No Build	Build	No Build	Build	No Build	Build		
1	31,382,470	30,069,170	306.0	342.6	251,059,763	240,553,360	$12,153,623	$10,644,113	$353,507	$339,585	$1,523,432	$1,243,574
20	55,659,545	45,590,909	264.8	308.8	445,276,364	364,727,273	$40,428,988	$22,627,153	$585,349	$483,933	$17,903,251	$4,040,999
2	32,660,211	30,886,104	303.8	340.8	261,281,689	247,088,829	$12,904,802	$11,115,961	$371,805	$352,789	$1,807,858	$1,379,206
3	33,937,952	31,703,037	301.7	339.0	271,503,616	253,624,298	$13,750,360	$11,621,081	$390,531	$366,304	$2,153,507	$1,535,421
4	35,215,693	32,519,971	299.5	337.3	281,725,542	260,159,767	$14,635,060	$12,142,615	$409,701	$380,141	$2,522,005	$1,680,518
5	36,493,434	33,336,905	297.3	335.5	291,947,468	266,695,236	$15,634,691	$12,677,316	$429,335	$394,315	$2,992,395	$1,863,513
6	37,771,174	34,153,838	295.2	333.7	302,169,395	273,230,705	$16,691,019	$13,233,024	$449,450	$408,838	$3,498,607	$2,036,221
7	39,048,915	34,970,772	293.0	331.9	312,391,321	279,766,174	$17,802,284	$13,805,885	$470,067	$423,723	$4,042,743	$2,198,984
8	40,326,656	35,787,705	290.8	330.1	322,613,247	286,301,643	$17,727,602	$13,381,694	$339,110	$302,826	$4,382,193	$2,227,685
9	41,604,397	36,604,639	288.7	328.4	332,835,174	292,837,113	$18,819,085	$13,987,478	$356,033	$315,333	$4,872,308	$2,314,798
10	42,882,138	37,421,573	286.5	326.6	343,057,100	299,372,582	$20,205,885	$14,618,691	$373,526	$328,251	$5,632,470	$2,500,884
11	44,159,878	38,238,506	284.3	324.8	353,279,026	305,908,051	$21,677,893	$15,272,632	$391,613	$341,597	$6,455,277	$2,678,711
12	45,437,619	39,055,440	282.1	323.0	363,500,953	312,443,520	$23,238,024	$15,951,087	$410,317	$355,388	$7,341,866	$2,847,302
13	46,715,360	39,872,374	280.0	321.3	373,722,879	318,978,989	$24,886,653	$16,655,369	$429,664	$369,640	$8,291,307	$3,005,151
14	47,993,101	40,689,307	277.8	319.5	383,944,805	325,514,458	$26,640,204	$17,421,173	$449,678	$384,372	$9,284,336	$3,144,926
15	49,270,841	41,506,241	275.6	317.7	394,166,732	332,049,927	$28,775,469	$18,216,558	$470,387	$399,603	$10,629,695	$3,365,089
16	50,548,582	42,323,175	273.5	315.9	404,388,658	338,585,396	$30,918,644	$19,043,436	$491,817	$415,351	$11,951,674	$3,536,069
17	51,826,323	43,140,108	271.3	314.1	414,610,585	345,120,865	$33,334,099	$19,783,287	$513,998	$431,637	$13,633,173	$3,769,686
18	53,104,064	43,957,042	269.1	312.4	424,832,511	351,656,335	$35,905,552	$20,675,536	$536,960	$448,482	$15,318,495	$3,958,590
19	54,381,805	44,773,975	267.0	310.6	435,054,437	358,191,804	$38,640,991	$21,600,293	$560,733	$465,906	$17,135,524	$4,138,453
Total												**$53,465,782**