State Highway 32 East TIGER Discretionary Grant Application

APPENDIX C - BENEFIT COST ANALYSIS REPORT

April 2016

I. COST-EFFECTIVENESS ANALYSIS

A Benefit-Cost Analysis (BCA) was conducted in conformance with US DOT guidance to assess the impacts of the State Highway 32 East (SH 32E) project. The grant request is for design and construction costs, as well as the required right-of-way (ROW) acquisition and utility relocations. The BCA conducted for the SH 32E project indicated a *favorable* benefit/cost (B/C) ratio, with the monetized benefits of the project exceeding the estimated project-related costs. In the summary discussion to follow, individual analysis inputs and results are presented for the BCA.

The 2016 Cal-B/C TIGER Grant Application version of a model developed by the California Department of Transportation (Caltrans) was used for the SH 32E 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) and Section (iii) discuss the Cal-B/C inputs used for analysis of the SH 32E project. Section (iv) provides details regarding the 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 the net present value of benefits and costs.

A. 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 SH 32E project.

TABLE 1: SH 32E CAL-B/C RESULTS

Life-Cycle Costs (mil. $)	$33.9
Life-Cycle Benefits (mil. $)	$52.4
Net Present Value (mil. $)	$18.5
Benefit / Cost Ratio:	1.5445
Rate of Return on Investment:	13.7%
Payback Period:	7 years

B. 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 Brownsville, Texas as of April 20, 2016. Prices were rounded up to the nearest 0.10.[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.

1. Project Data

The 2016 TIGER version of the Cal-B/C model requires users to select the project type from a list. The SH 32E project was identified as a Bypass project. Users must also select a project location that corresponds to California urban or rural peak traffic and accident parameters. The SH 32E project was identified as rural. The 2016 TIGER version of the model allows users to

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[1] Average price of fuel in Brownsville, Texas as of 04/20/2016 retrieved from www.texasgasprices.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

override default settings that indicate whether other inputs reflect one-way or two-way data. Data for the SH 32E project was entered as two-way data and coded in this section accordingly. The length of the construction period was identified as two years for the SH 32E project. Table 2 provides the project data entered for the SH 32E project.

TABLE 2: SH 32E CAL-B/C PROJECT DATA

Type of Project	Remember to run model for both roads	
Select project type from list	Bypass	
Project Location (enter 1 for So. Cal., 2 for No. Cal., or 3 for rural)	3	
Length of Construction Period	2	years
One- or Two-Way Data	2	enter 1 or 2
	Current	
Length of Peak Period(s) (up to 24 hrs)	5.0	hours

2. 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 2039) were calculated from a TxDOT traffic analysis dated February 3, 2012.[3] The no build speed was estimated based on posted speed limit signs and the build speed was obtained from design documents.[4] Table 3 summarizes the project-specific data entered in the highway design and traffic data sections for the SH 32E project.

[3] Traffic Data – SH 32 (East Loop): From Port of Brownsville to US 77/83, Cameron County – Dated February 3, 2012. Year volumes other than 2013 and 2033 are based on linear interpolation.

[4] SH 32 Schematic Layout – Cameron County Design Data. Prepared for the Cameron County Regional Mobility Authority, May 2015.

TABLE 3: SH 32E CAL-B/C HIGHWAY AND TRAFFIC DATA

Highway Design		No Build	Build
Roadway Type (Fwy, Exp, Conv Hwy)		F	F
Number of General Traffic Lanes		2	2
Number of HOV/HOT Lanes		0	0
HOV Restriction (2 or 3)		0	
Exclusive ROW for Buses (y/n)		N	
Highway Free-Flow Speed		55	60
Ramp Design Speed (if aux. lane/off-ramp proj.)		30	30
Length (in miles)	Highway Segment	5.8	5.8
	Impacted Length	5.8	5.8
Average Daily Traffic			
	Current	9,400	
		No Build	Build
	Base (Year 1)	9,750	9,750
	Forecast (Year 20)	13,250	13,250
Average Hourly HOV/HOT Lane Traffic		0	0
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)		15%	15%
Truck Speed		55	

3. Accident Data

Because the project is a new facility, statewide accidents rates were used for the build and no build calculations. All values were averaged from 2012, 2013, and 2014 crash data pulled from TxDOT's Texas Motor Vehicle Crash Statics reports for undivided and divided highways in rural areas.[5] Table 4 shows the Cal-B/C accident data inputs for the SH 32E project.

TABLE 4: SH 32E CAL-B/C HIGHWAY ACCIDENT DATA

Statewide Basic Average Accident Rate	No Build	Build
Rate Group	2-U	2-D
Accident Rate (per million vehicle-miles)	0.981	0.562
Percent Fatal Accidents (Pct Fat)	1.318%	0.178%
Percent Injury Accidents (Pct Inj)	27.727%	7.877%

C. PROJECT COSTS

Project costs and the length of the construction period were entered into the Cal B/C model. Project costs are included in the following categories, as appropriate: Project Support (includes engineering and utility relocation), Right-of-Way (ROW) acquisition, Construction, and Maintenance/Operations.

[5] Texas statewide 2012, 2013, and 2014 crash rates for divided and undivided highways in rural areas available at http://www.txdot.gov/government/enforcement/annual-summary.html

The initial design and construction costs for the SH 32E project are approximately **$29.4 million** as described in more detail in the application. The design and construction period is assumed to be two years, beginning in 2017. Annual construction expenditures were assumed to be allocated proportionally over the 14 months of construction. The total project cost is **$33.9 million** in present value terms, including maintenance/operations. The breakdown of project costs as reflected in the Cal B/C analysis is indicated in Table 5 below.

TABLE 5: SH 32E CAL-B/C PROJECT COSTS

Year	DIRECT PROJECT COSTS					Mitigation	Transit Agency Cost Savings	TOTAL COSTS (in dollars)	
	INITIAL COSTS			SUBSEQUENT COSTS					
	Project Support	R / W	Construction	Maint./ Op.	Rehab.			Constant Dollars	Present Value
Construction Period									
1	$5,221	$1,424	$3,253					$9,898,000	$9,898,000
2			19,518					19,518,000	18,241,121
3								0	0
4								0	0
5								0	0
6								0	0
7								0	0
8								0	0
Project Open									
1				$584	$0			$584,000	$510,088
2				584	0			584,000	476,718
3				584	0			584,000	445,531
4				584	0			584,000	416,384
5				584	0			584,000	389,144
6				584	0			584,000	363,686
7				584	0			584,000	339,893
8				584	0			584,000	317,657
9				584	0			584,000	296,876
10				584	0			584,000	277,454
11				584	0			584,000	259,303
12				584	0			584,000	242,339
13				584	0			584,000	226,485
14				584	0			584,000	211,668
15				584	0			584,000	197,821
16				584	0			584,000	184,879
17				584	0			584,000	172,785
18				584	0			584,000	161,481
19				584	0			584,000	150,917
20				584	0			584,000	141,044
Total	$5,221	$1,424	$22,771	$11,680	$0	$0	$0	$41,096,000	$33,921,275

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

D. 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 SH 32E project, as discussed in more detail in the following sub-sections.

FIGURE 1: SH 32E ITEMIZED BENEFITS, PRESENT VALUE

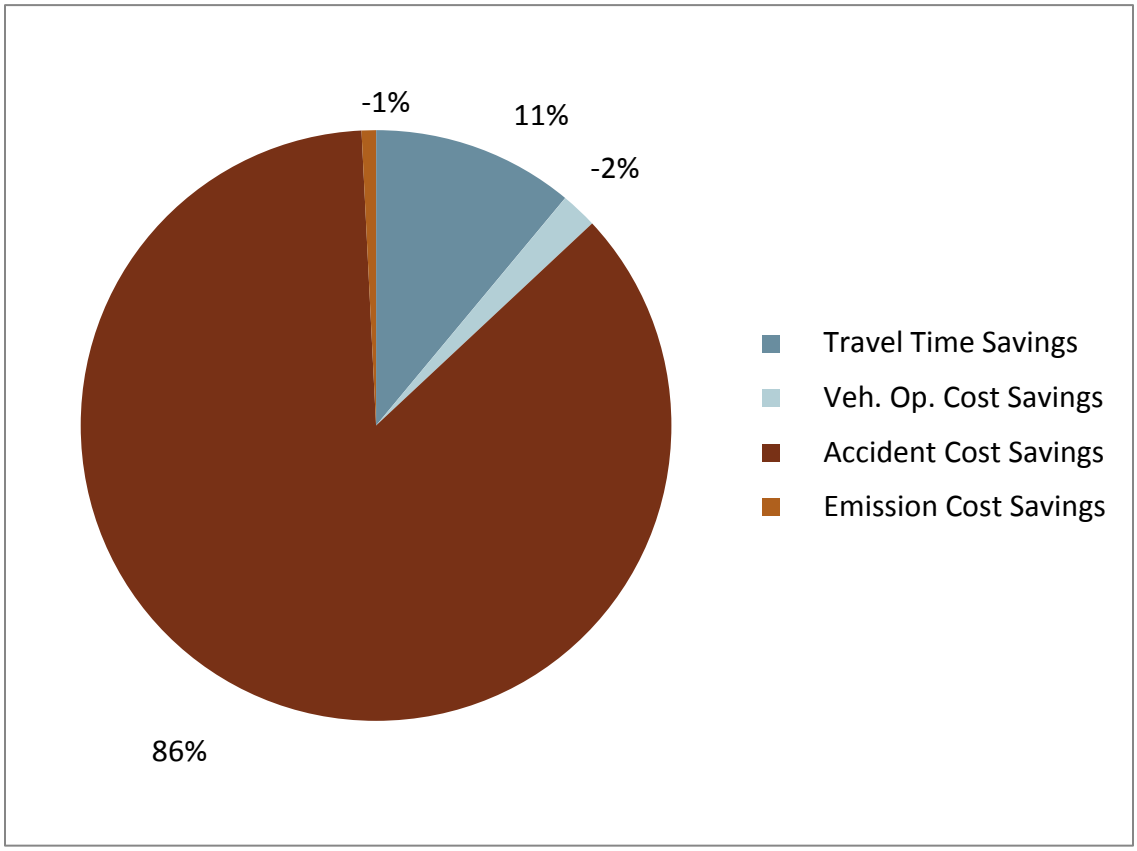
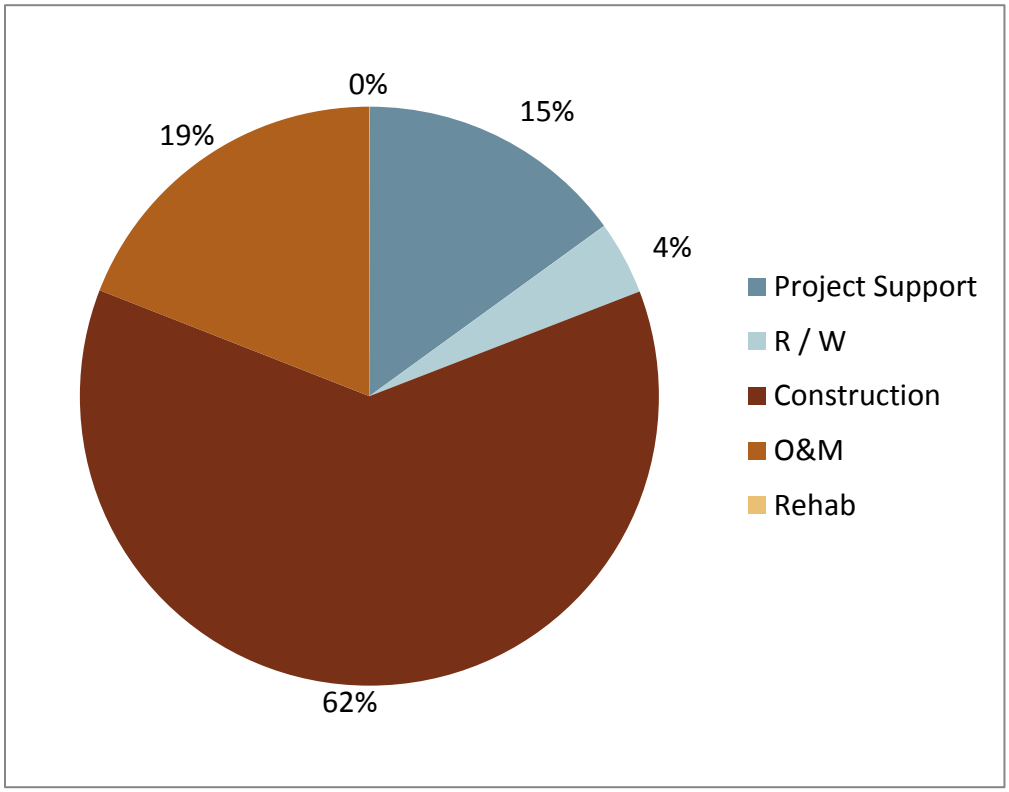


FIGURE 2: SH 32E PROJECT COSTS, PRESENT VALUE



1. 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.[6] Table 6 shows the total travel time benefit and the travel time benefit by year for the SH 32E project.

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

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

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

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

[6] 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: SH 32E 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	3,558,750	3,558,750			3,846,904	3,846,904			34,039	0	$543,603	$474,804
20	4,836,250	4,836,250			5,227,844	5,227,844			46,259	0	$738,742	$178,416
2	3,625,987	3,625,987			3,919,585	3,919,585			34,682	0	$553,873	$452,125
3	3,693,224	3,693,224			3,992,266	3,992,266			35,326	0	$564,144	$430,382
4	3,760,461	3,760,461			4,064,947	4,064,947			35,969	0	$574,414	$409,549
5	3,827,697	3,827,697			4,137,629	4,137,629			36,612	0	$584,685	$389,600
6	3,894,934	3,894,934			4,210,310	4,210,310			37,255	0	$594,955	$370,508
7	3,962,171	3,962,171			4,282,991	4,282,991			37,898	0	$605,226	$352,247
8	4,029,408	4,029,408			4,355,672	4,355,672			38,541	0	$615,496	$334,789
9	4,096,645	4,096,645			4,428,353	4,428,353			39,184	0	$625,767	$318,108
10	4,163,882	4,163,882			4,501,034	4,501,034			39,827	0	$636,037	$302,177
11	4,231,118	4,231,118			4,573,715	4,573,715			40,470	0	$646,308	$286,968
12	4,298,355	4,298,355			4,646,396	4,646,396			41,114	0	$656,578	$272,457
13	4,365,592	4,365,592			4,719,077	4,719,077			41,757	0	$666,848	$258,615
14	4,432,829	4,432,829			4,791,758	4,791,758			42,400	0	$677,119	$245,419
15	4,500,066	4,500,066			4,864,439	4,864,439			43,043	0	$687,389	$232,843
16	4,567,303	4,567,303			4,937,120	4,937,120			43,686	0	$697,660	$220,861
17	4,634,539	4,634,539			5,009,801	5,009,801			44,329	0	$707,930	$209,451
18	4,701,776	4,701,776			5,082,482	5,082,482			44,972	0	$718,201	$198,589
19	4,769,013	4,769,013			5,155,163	5,155,163			45,615	0	$728,471	$188,251
Total												**$6,126,159**

2. 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 15.3% based on a 2012 Traffic Analysis study.[7] 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 SH 32E project.

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

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

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

[7] Traffic Data – SH 32 (East Loop): From Port of Brownsville to US 77/83, Cameron County – Dated February 3, 2012.

TABLE 7: SH 32E CAL-B/C VEHICLE OPERATING COST SAVINGS BENEFITS

Year	AVERAGE VOLUME (vehicles/yr)		AVERAGE SPEED (mph)		TOTAL VMT (veh-miles/yr)		BENEFITS ($/yr)			
	No Build	Build	No Build	Build	No Build	Build	Fuel Costs	Non-Fuel Costs	Constant Dollars	Present Value at 7%
1	3,558,750	3,558,750	390.0	410.0	20,783,100	20,783,100	($97,632)	$0	($97,632)	($85,276)
20	4,836,250	4,836,250	390.0	410.0	28,243,700	28,243,700	($132,679)	$0	($132,679)	($32,044)
2	3,625,987	3,625,987	390.0	410.0	21,175,763	21,175,763	($99,477)	$0	($99,477)	($81,202)
3	3,693,224	3,693,224	390.0	410.0	21,568,426	21,568,426	($101,321)	$0	($101,321)	($77,297)
4	3,760,461	3,760,461	390.0	410.0	21,961,089	21,961,089	($103,166)	$0	($103,166)	($73,556)
5	3,827,697	3,827,697	390.0	410.0	22,353,753	22,353,753	($105,010)	$0	($105,010)	($69,973)
6	3,894,934	3,894,934	390.0	410.0	22,746,416	22,746,416	($106,855)	$0	($106,855)	($66,544)
7	3,962,171	3,962,171	390.0	410.0	23,139,079	23,139,079	($108,700)	$0	($108,700)	($63,264)
8	4,029,408	4,029,408	390.0	410.0	23,531,742	23,531,742	($110,544)	$0	($110,544)	($60,129)
9	4,096,645	4,096,645	390.0	410.0	23,924,405	23,924,405	($112,389)	$0	($112,389)	($57,133)
10	4,163,882	4,163,882	390.0	410.0	24,317,068	24,317,068	($114,233)	$0	($114,233)	($54,271)
11	4,231,118	4,231,118	390.0	410.0	24,709,732	24,709,732	($116,078)	$0	($116,078)	($51,540)
12	4,298,355	4,298,355	390.0	410.0	25,102,395	25,102,395	($117,923)	$0	($117,923)	($48,934)
13	4,365,592	4,365,592	390.0	410.0	25,495,058	25,495,058	($119,767)	$0	($119,767)	($46,448)
14	4,432,829	4,432,829	390.0	410.0	25,887,721	25,887,721	($121,612)	$0	($121,612)	($44,078)
15	4,500,066	4,500,066	390.0	410.0	26,280,384	26,280,384	($123,456)	$0	($123,456)	($41,819)
16	4,567,303	4,567,303	390.0	410.0	26,673,047	26,673,047	($125,301)	$0	($125,301)	($39,667)
17	4,634,539	4,634,539	390.0	410.0	27,065,711	27,065,711	($127,146)	$0	($127,146)	($37,618)
18	4,701,776	4,701,776	390.0	410.0	27,458,374	27,458,374	($128,990)	$0	($128,990)	($35,667)
19	4,769,013	4,769,013	390.0	410.0	27,851,037	27,851,037	($130,835)	$0	($130,835)	($33,810)
Total										**($1,100,268)**

3. 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 SH 32E project.

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

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

TABLE 8: SH 32E 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	3,558,750	3,558,750	20,783,100	20,783,100	$4,889,515	$647,773	$4,241,742	$3,704,902
20	4,836,250	4,836,250	28,243,700	28,243,700	$6,644,726	$880,307	$5,764,419	$1,392,183
2	3,625,987	3,625,987	21,175,763	21,175,763	$4,981,895	$660,012	$4,321,883	$3,527,944
3	3,693,224	3,693,224	21,568,426	21,568,426	$5,074,274	$672,250	$4,402,024	$3,358,283
4	3,760,461	3,760,461	21,961,089	21,961,089	$5,166,654	$684,489	$4,482,165	$3,195,722
5	3,827,697	3,827,697	22,353,753	22,353,753	$5,259,033	$696,728	$4,562,306	$3,040,057
6	3,894,934	3,894,934	22,746,416	22,746,416	$5,351,413	$708,966	$4,642,447	$2,891,082
7	3,962,171	3,962,171	23,139,079	23,139,079	$5,443,792	$721,205	$4,722,588	$2,748,589
8	4,029,408	4,029,408	23,531,742	23,531,742	$5,536,172	$733,443	$4,802,728	$2,612,366
9	4,096,645	4,096,645	23,924,405	23,924,405	$5,628,551	$745,682	$4,882,869	$2,482,203
10	4,163,882	4,163,882	24,317,068	24,317,068	$5,720,931	$757,921	$4,963,010	$2,357,890
11	4,231,118	4,231,118	24,709,732	24,709,732	$5,813,310	$770,159	$5,043,151	$2,239,219
12	4,298,355	4,298,355	25,102,395	25,102,395	$5,905,690	$782,398	$5,123,292	$2,125,984
13	4,365,592	4,365,592	25,495,058	25,495,058	$5,998,069	$794,637	$5,203,433	$2,017,981
14	4,432,829	4,432,829	25,887,721	25,887,721	$6,090,449	$806,875	$5,283,574	$1,915,010
15	4,500,066	4,500,066	26,280,384	26,280,384	$6,182,828	$819,114	$5,363,715	$1,816,876
16	4,567,303	4,567,303	26,673,047	26,673,047	$6,275,208	$831,352	$5,443,855	$1,723,385
17	4,634,539	4,634,539	27,065,711	27,065,711	$6,367,587	$843,591	$5,523,996	$1,634,351
18	4,701,776	4,701,776	27,458,374	27,458,374	$6,459,967	$855,830	$5,604,137	$1,549,591
19	4,769,013	4,769,013	27,851,037	27,851,037	$6,552,346	$868,068	$5,684,278	$1,468,925
Total								**$47,802,544**

4. 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 SH 32E project.

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

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

TABLE 9: SH 32E 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	3,558,750	3,558,750	395	415	20,783,100	20,783,100	$843,270	$876,674	$40,426	$40,426	($33,404)	($29,176)
20	4,836,250	4,836,250	395	415	28,243,700	28,243,700	$1,420,150	$1,487,614	$50,547	$50,547	($67,464)	($16,293)
2	3,625,987	3,625,987	395	415	21,175,763	21,175,763	$869,969	$904,817	$41,612	$41,612	($34,848)	($28,446)
3	3,693,224	3,693,224	395	415	21,568,426	21,568,426	$897,396	$933,742	$42,827	$42,827	($36,347)	($27,729)
4	3,760,461	3,760,461	395	415	21,961,089	21,961,089	$925,579	$963,482	$44,072	$44,072	($37,903)	($27,024)
5	3,827,697	3,827,697	395	415	22,353,753	22,353,753	$954,547	$994,066	$45,348	$45,348	($39,519)	($26,333)
6	3,894,934	3,894,934	395	415	22,746,416	22,746,416	$984,331	$1,025,527	$46,655	$46,655	($41,196)	($25,655)
7	3,962,171	3,962,171	395	415	23,139,079	23,139,079	$1,014,961	$1,057,898	$47,996	$47,996	($42,937)	($24,989)
8	4,029,408	4,029,408	395	415	23,531,742	23,531,742	$972,586	$1,012,819	$33,834	$33,834	($40,233)	($21,884)
9	4,096,645	4,096,645	395	415	23,924,405	23,924,405	$1,003,904	$1,045,953	$34,991	$34,991	($42,049)	($21,376)
10	4,163,882	4,163,882	395	415	24,317,068	24,317,068	$1,036,178	$1,080,116	$36,187	$36,187	($43,937)	($20,874)
11	4,231,118	4,231,118	395	415	24,709,732	24,709,732	$1,069,444	$1,115,345	$37,421	$37,421	($45,901)	($20,380)
12	4,298,355	4,298,355	395	415	25,102,395	25,102,395	$1,103,740	$1,151,682	$38,696	$38,696	($47,942)	($19,894)
13	4,365,592	4,365,592	395	415	25,495,058	25,495,058	$1,139,103	$1,189,168	$40,013	$40,013	($50,065)	($19,416)
14	4,432,829	4,432,829	395	415	25,887,721	25,887,721	$1,175,576	$1,227,847	$41,373	$41,373	($52,272)	($18,946)
15	4,500,066	4,500,066	395	415	26,280,384	26,280,384	$1,213,199	$1,267,765	$42,779	$42,779	($54,566)	($18,483)
16	4,567,303	4,567,303	395	415	26,673,047	26,673,047	$1,252,016	$1,308,966	$44,231	$44,231	($56,950)	($18,029)
17	4,634,539	4,634,539	395	415	27,065,711	27,065,711	$1,292,072	$1,351,501	$45,733	$45,733	($59,429)	($17,583)
18	4,701,776	4,701,776	395	415	27,458,374	27,458,374	$1,333,414	$1,395,419	$47,285	$47,285	($62,005)	($17,145)
19	4,769,013	4,769,013	395	415	27,851,037	27,851,037	$1,376,090	$1,440,772	$48,889	$48,889	($64,682)	($16,715)
Total												**($436,371)**