

Discounting of Future Benefits and Costs (2013 to 2030)

Calendar Year	Project Year	Total Value of Maintenance Costs Saved	Total Value of Travel Time Saved	Total Value of Reduction in Fatalities and Injuries	Pollution Costs	Project Construction, Operations and Maintenance Costs	Undiscounted Net Benefits of TIGER Funding	Net Benefits of Tiger II Funding Discounted at 7%	Net Benefits of Tiger II Funding Discounted at 3%
2013	1	N/A	N/A	N/A	N/A	\$5,707,800	(\$5,707,800)	(\$4,659,265)	(\$5,223,446)
2014	2	N/A	N/A	N/A	N/A	\$10,464,300	(\$10,464,300)	(\$7,983,164)	(\$9,297,395)
2015	3	\$78,052	-\$86,583	\$5,566,500	\$827,713	\$6,827,900	(\$2,097,645)	(\$1,495,592)	(\$1,809,447)
2016	4	\$87,486	\$9,133	\$5,678,100	\$918,010	\$594,970	\$4,261,739	\$2,839,777	\$3,569,140
2017	5	\$97,258	\$112,256	\$5,789,700	\$1,012,898	\$611,302	\$4,375,014	\$2,724,539	\$3,557,287
2018	6	\$107,377	\$223,215	\$5,873,400	\$1,112,573	\$647,833	\$4,443,586	\$2,586,207	\$3,507,808
2019	7	\$117,854	\$342,456	\$5,985,000	\$1,217,233	\$657,194	\$4,570,883	\$2,486,258	\$3,503,201
2020	8	\$128,698	\$470,453	\$6,068,700	\$1,327,088	\$795,046	\$4,545,718	\$2,310,812	\$3,382,441
2021	9	\$139,921	\$607,700	\$6,180,300	\$1,442,352	\$702,718	\$4,782,851	\$2,272,298	\$3,455,233
2022	10	\$151,533	\$754,719	\$6,291,900	\$1,563,251	\$925,906	\$4,708,994	\$2,090,850	\$3,302,794
2023	11	\$163,545	\$912,057	\$6,403,500	\$1,690,017	\$896,926	\$4,892,159	\$2,030,072	\$3,331,322
2024	12	\$175,970	\$1,080,288	\$8,343,000	\$1,822,892	\$789,471	\$6,986,895	\$2,709,638	\$4,619,161
2025	13	\$188,819	\$1,260,017	\$8,482,500	\$1,962,128	\$937,779	\$7,031,429	\$2,548,514	\$4,513,207
2026	14	\$202,105	\$1,451,877	\$8,566,200	\$2,107,983	\$780,417	\$7,331,782	\$2,483,528	\$4,568,924
2027	15	\$215,839	\$1,656,536	\$8,733,600	\$2,260,730	\$937,557	\$7,407,688	\$2,345,084	\$4,481,773
2028	16	\$230,035	\$1,874,692	\$8,845,200	\$2,420,649	\$823,940	\$7,705,339	\$2,279,732	\$4,526,075
2029	17	\$244,706	\$2,107,081	\$8,984,700	\$2,588,030	\$1,132,580	\$7,615,877	\$2,105,853	\$4,343,228
2030	18	\$260,175	\$1,996,481	\$9,096,300	\$2,759,024	\$1,080,167	\$7,513,764	\$1,941,699	\$4,160,189
NPV		\$2,589,374	\$14,772,377	\$114,888,600	\$27,032,572	\$35,313,806	\$69,903,973	\$21,616,841	\$42,491,494

For monetizing pollution (these numbers were copied from the VMT Calc sheet)

2015

Roadway	Limits	No-Build	Build	Annual VMT Change
		Annual VMT	Annual VMT	
SH 48/SH 4	Port of Brownsville to US 77/83	75,138,326	66,431,683	-8,706,643
FM 1419	SH 4 to FM 3068 (West)	38,141,134	33,721,535	-4,419,598
FM 1419	SH 4 to FM 3068 (East)	2,635,590	2,330,191	-305,399
FM 511	SH 48 to FM 3068	14,373,065	12,707,588	-1,665,477
FM 3068	FM 511 to FM 1419	1,079,394	954,320	-125,075
East Loop*	Port of Brownsville to Veteran's Intl. Bridge	N/A	28,360,500	28,360,500
Total		131,367,508		13,138,309

2030

Roadway	Limits	No-Build	Build	Annual VMT Change
		Annual VMT	Annual VMT	
SH 48/SH 4	Port of Brownsville to US 77/83	109,621,687	80,599,359	-29,022,328
FM 1419	SH 4 to FM 3068 (West)	55,645,310	40,913,221	-14,732,089
FM 1419	SH 4 to FM 3068 (East)	3,845,146	2,827,144	-1,018,002
FM 511	SH 48 to FM 3068	20,969,320	15,417,695	-5,551,625
FM 3068	FM 511 to FM 1419	1,574,762	1,157,844	-416,918
East Loop*	Port of Brownsville to Veteran's Intl. Bridge	N/A	94,535,000	94,535,000
Total		191,656,226	235,450,264	43,794,038

For monetizing roadway maintenance (these numbers were copied from the VMT Calc sheet)

2015

Roadway	Limits	No-Build	Build	VMT Change
		VMT	VMT	
SH 48/SH 4	Port of Brownsville to US 77/83	205,858	182,005	-23,854
FM 1419	SH 4 to FM 3068 (West)	104,496	92,388	-12,108
FM 1419	SH 4 to FM 3068 (East)	7,221	6,384	-837
FM 511	SH 48 to FM 3068	39,378	34,815	-4,563
FM 3068	FM 511 to FM 1419	2,957	2,615	-343
Total		359,911	318,206	-41,705

2030

Roadway	Limits	No-Build	Build	VMT Change
		VMT	VMT	
SH 48/SH 4	Port of Brownsville to US 77/83	300,333	220,820	-79,513
FM 1419	SH 4 to FM 3068 (West)	152,453	112,091	-40,362
FM 1419	SH 4 to FM 3068 (East)	10,535	7,746	-2,789
FM 511	SH 48 to FM 3068	57,450	42,240	-15,210
FM 3068	FM 511 to FM 1419	4,314	3,172	-1,142
Total		525,086	386,069	-139,016

Annual VMT Calculations (Used to Monetize Emissions)

Roadway Segment	Limits	Length	1999 No-Build (Without East Loop)			2015 No-Build (Without East Loop)		
			AADT	Daily VMT	Annual VMT	AADT	Daily VMT	Annual VMT
SH 48/SH 4	Port to Bridge	8.73	15,761	137,594	50,221,638	23,581	205,858	75,138,326
FM 1419	SH 4 (West) to FM 3068	6.29	11,104	69,844	25,493,118	16,613	104,496	38,141,134
FM 1419	FM 3068 to SH 4 (East)	5.78	835	4,826	1,761,600	1,249	7,221	2,635,590
FM 511	SH 48 to FM 3068	4.70	5,600	26,320	9,606,800	8,378	39,378	14,373,065
FM 3068	FM 511 to FM 1419	1.51	1,309	1,977	721,455	1,958	2,957	1,079,394
					87,804,612	51,780	131,367,508	

Roadway Segment	Limits	Length	2015 Build (With East Loop)		
			AADT	Daily VMT	Annual VMT
SH 48/SH 4	Port to Bridge	8.73	20,848	182,005	66,431,683
FM 1419	SH 4 (West) to FM 3068	6.29	14,688	92,388	33,721,535
FM 1419	FM 3068 to SH 4 (East)	5.78	1,105	6,384	2,330,191
FM 511	SH 48 to FM 3068	4.70	7,408	34,815	12,707,588
FM 3068	FM 511 to FM 1419	1.51	1,732	2,615	954,320
East Loop	Port of Brownsville to US 77/83	12.95	6,000	77,700	28,360,500
					144,505,817

Percentage of trucks VMT calc (based on AADT)
 AADT on network **51,780**
 5% trucks **2,589**
 Trucks as percent of 6000 **43.15**

Roadway Segment	Limits	Length	2030 No-Build (Without East Loop)		
			AADT	Daily VMT	Annual VMT
SH 48/SH 4	Port to Bridge	8.73	34,402	300,333	109,621,687
FM 1419	SH 4 (West) to FM 3068	6.29	24,237	152,453	55,645,310
FM 1419	FM 3068 to SH 4 (East)	5.78	1,823	10,535	3,845,146
FM 511	SH 48 to FM 3068	4.70	12,223	57,450	20,969,320
FM 3068	FM 511 to FM 1419	1.51	2,857	4,314	1,574,762
					75,543 191,656,226

Roadway Segment	Limits	Length	2030 Build (With East Loop)		
			AADT	Daily VMT	Annual VMT
SH 48/SH 4	Port to Bridge	8.73	25,294	220,820	80,599,359
FM 1419	SH 4 (West) to FM 3068	6.29	17,821	112,091	40,913,221
FM 1419	FM 3068 to SH 4 (East)	5.78	1,340	7,746	2,827,144
FM 511	SH 48 to FM 3068	4.70	8,987	42,240	15,417,695
FM 3068	FM 511 to FM 1419	1.51	2,101	3,172	1,157,844
East Loop	Port of Brownsville to US 77/83	12.95	20,000	259,000	94,535,000
					235,450,264

2015 Build Calculations

Segment	2015 AADT	% of Total	2015 AADT Red	2015 AADT (Build
SH 48/SH 4	23,581	0.455399299	2732.395797	20,848
FM 1419	16,613	0.320839656	1925.037937	14,688
FM 1419	1249	0.024126541	144.7592469	1,105
FM 511	8,378	0.161806743	970.8404582	7,408
FM 3068	1,958	0.037822326	226.9339571	1,732
East Loop	6,000			6000
				51,780

2030 Build Calculations

Segment	2030 AADT	% of Total	2015 AADT Red	2015 AADT (Build
SH 48/SH 4	34,402	0.455402224	9108.044478	25,294
FM 1419	24,237	0.320841717	6416.834331	17,821
FM 1419	1,823	0.024126696	482.5339217	1,340
FM 511	12,223	0.161807782	3236.155642	8,987
FM 3068	2,857	0.037822569	756.4513814	2,101
East Loop	20,000			20000
				75,543

SH 48/SH 4

LENGTH	TOT_VOL	
0.24	12484	
2.08	5486	
1.01	5486	
0.20	22835	
0.12	27700	
0.18	24587	
0.25	25815	
0.41	27081	
0.09	25863	
0.12	30925	
0.08	34114	
0.28	14568	
0.39	14916	
0.23	14983	
0.32	21276	
0.26	17163	
0.05	19837	
0.14	13943	
0.47	14516	
0.14	14044	
0.14	14639	
0.22	11384	
0.14	29101	
0.18	27211	
0.23	36136	
0.14	33742	
0.14	28640	
0.48	25177	
	15761	

FM 1419 (West)

LENGTH	TOT_VOL	
0.73	17902	
0.69	7709	
0.24	28677	
0.21	22271	
0.33	29705	
0.19	23215	
0.19	24528	
0.10	24600	
1.04	1330	
0.33	5407	
0.44	1403	
1.03	1885	
0.15	15703	
0.62	16904	
	11104	

FM 1419 (East)

LENGTH	TOT_VOL	
0.97	2	
0.75	2	
0.99	1843	
1.02	1015	
0.65	915	
1.05	993	
0.35	930	
	835	

FM 511

LENGTH	TOT_VOL	
0.62	5970	
1.00	6516	
0.51	5948	
0.49	3999	
0.88	5017	
0.50	5040	
0.51	6334	
0.19	4965	
	5600	

FM 3068

LENGTH	TOT_VOL	
0.38	2616	
1.13	870	
	1309	

Travel Time Calculations

Roadway Segment	Limits	2015 No-Build (Without East Loop)							
		Free-Flow Speed	V/C 1999	V/C 2015	Speed	Length	2015 ADT	Travel Time (Per Day)	Travel Time (Annual)
SH 48/SH 4	Port of Brownsville to Veteran's Intl. Bridge	41.5	0.65	1.03	35.5399252	8.73	23580	5792	2,114,143
FM 1419	SH 4 (West) to FM 3068	41.2	0.44	0.79	38.9352059	6.29	16613	2684	979,601
FM 1419	FM 3068 to SH 4 (East)	45.0	0.10	0.15	44.9965831	5.78	1249	160	58,560
FM 511	SH 48 to FM 3068	43.7	0.62	0.90	39.8028068	4.70	8378	989	361,092
FM 3068	FM 511 to FM 1419	45.0	0.16	0.23	44.9811187	1.51	1959	66	24,003
TOTAL							51779		3,537,399

Roadway Segment	Limits	2015 Build (With East Loop)							
		Free-Flow Speed	V/C 1999	V/C 2015	Speed	Length	2015 ADT	Travel Time (Per Day)	Travel Time (Annual)
SH 48/SH 4	Port of Brownsville to Veteran's Intl. Bridge	41.5		0.91	37.609813	8.73	20848	4839	1,766,291
FM 1419	SH 4 (West) to FM 3068	41.2		0.70	39.758423	6.29	14688	2324	848,155
FM 1419	FM 3068 to SH 4 (East)	45.0		0.13	44.998110	5.78	1104	142	51,773
FM 511	SH 48 to FM 3068	43.7		0.80	41.224706	4.70	7407	844	308,238
FM 3068	FM 511 to FM 1419	45.0		0.21	44.987803	1.51	1732	58	21,219
East Loop	Port of Brownsville to US 77/83	50.0	N/A	0.24	49.9751292	12.95	6000	1555	567,492
TOTAL							51779		3,563,168

Roadway Segment	Limits	2030 No-Build (Without East Loop)							
		Free-Flow Speed	V/C 2015	V/C 2030	Speed	Length	2030 ADT	Travel Time (Per Day)	Travel Time (Annual)
SH 48/SH 4	Port of Brownsville to Veteran's Intl. Bridge	41.5		1.41	26.0785292	8.73	34402	11516	4,203,468
FM 1419	SH 4 (West) to FM 3068	41.2		0.97	36.3790794	6.29	24237	4191	1,529,575
FM 1419	FM 3068 to SH 4 (East)	45.0		0.21	44.9868764	5.78	1823	234	85,491
FM 511	SH 48 to FM 3068	43.7		1.34	29.4683251	4.70	12223	1949	711,563
FM 3068	FM 511 to FM 1419	45.0		0.34	44.9099778	1.51	3805	128	46,696
TOTAL							76490		6,576,792

Roadway Segment	Limits	2030 Build (With East Loop)							
		Free-Flow Speed	V/C 2015	V/C 2030	Speed	Length	2030 ADT	Travel Time (Per Day)	Travel Time (Annual)
SH 48/SH 4	Port of Brownsville to Veteran's Intl. Bridge	41.5		1.11	33.758376	8.73	25407	6570	2,398,149
FM 1419	SH 4 (West) to FM 3068	41.2		0.86	38.138733	6.29	17900	2952	1,077,514
FM 1419	FM 3068 to SH 4 (East)	45.0		0.16	44.995825	5.78	1346	173	63,125
FM 511	SH 48 to FM 3068	43.7		0.97	38.570277	4.70	9027	1100	401,497
FM 3068	FM 511 to FM 1419	45.0		0.33	44.915616	1.51	2810	94	34,482
East Loop	Port of Brownsville to US 77/83	50.0	N/A	0.80	47.1058185	12.95	20000	5498	2,006,865
TOTAL							76490		5,981,632

Weighted Averages										
Roadway Segment	1999				Length		2015			
	TOT_VOL	TOT_CAP	V/C				TOT_VOL	TOT_CAP	V/C	Length
SH 48/SH 4	12484	18400	0.68	0.24		18678	18400	1.02	0.24	
	5486	18400	0.30	2.08		8208	18400	0.45	2.08	
	5486	18400	0.30	1.01		8208	18400	0.45	1.01	
	22835	24800	0.92	0.20		34164	24800	1.38	0.20	
	27700	22400	1.24	0.12		41443	22400	1.85	0.12	
	24587	24800	0.99	0.18		36785	24800	1.48	0.18	
	25815	24800	1.04	0.25		38623	24800	1.56	0.25	
	27081	24800	1.09	0.41		40517	24800	1.63	0.41	
	25863	22400	1.15	0.09		38695	22400	1.73	0.09	
	30925	24800	1.25	0.12		46268	24800	1.87	0.12	
	34114	24800	1.38	0.08		51039	24800	2.06	0.08	
	14568	24800	0.59	0.28		21796	24800	0.88	0.28	
	14916	24800	0.60	0.39		22316	24800	0.90	0.39	
	14983	24800	0.60	0.23		22417	24800	0.90	0.23	
	21276	24800	0.86	0.32		31832	24800	1.28	0.32	
	17163	24800	0.69	0.26		25678	24800	1.04	0.26	
	19837	24800	0.80	0.05		29679	24800	1.20	0.05	
	13943	24800	0.56	0.14		20861	24800	0.84	0.14	
	14516	24800	0.59	0.47		21718	24800	0.88	0.47	
	14044	24800	0.57	0.14		21012	24800	0.85	0.14	
14639	24800	0.59	0.14		21902	24800	0.88	0.14		
11384	22400	0.51	0.22		17032	22400	0.76	0.22		
29101	29600	0.98	0.14		43539	29600	1.47	0.14		
27211	28400	0.96	0.18		40711	28400	1.43	0.18		
36136	28400	1.27	0.23		54064	28400	1.90	0.23		
33742	28400	1.19	0.14		50483	28400	1.78	0.14		
28640	29600	0.97	0.14		42849	29600	1.45	0.14		
25177	28400	0.89	0.48		37668	28400	1.33	0.48		
			0.65			23580.09	22819.24	1.03		
Roadway Segment	1999				Length		2015			
	TOT_VOL	TOT_CAP	V/C				TOT_VOL	TOT_CAP	V/C	Length
FM 1419 (West)	17902	24800	0.72	0.73		26784	24800	1.08	0.73	
	7709	24800	0.31	0.69		11534	24800	0.47	0.69	
	28677	29600	0.97	0.24		42905	29600	1.45	0.24	
	22271	28400	0.78	0.21		33320	28400	1.17	0.21	
	29705	29600	1.00	0.33		44443	29600	1.50	0.33	
	23215	28400	0.82	0.19		34733	28400	1.22	0.19	
	24528	28400	0.86	0.19		36697	28400	1.29	0.19	
	24600	28400	0.87	0.10		36805	28400	1.30	0.10	
	1330	9200	0.14	1.04		1990	9200	0.22	1.04	
	5407	24800	0.22	0.33		8090	24800	0.33	0.33	
	1403	9200	0.15	0.44		2099	9200	0.23	0.44	
	1885	18400	0.10	1.03		2820	18400	0.15	1.03	
	15703	24800	0.63	0.15		23494	24800	0.95	0.15	
	16904	24800	0.68	0.62		25291	24800	1.02	0.62	
			0.44			16612.85	20911.29	0.79		
Roadway Segment	1999				Length		2015			
	TOT_VOL	TOT_CAP	V/C				TOT_VOL	TOT_CAP	V/C	Length
FM 1419 (East)	2	8400	0.00	0.97		3	8400	0.00	0.97	

	2	8400	0.00	0.75		3	8400	0.00	0.75
	1843	9200	0.20	0.99		2757	9200	0.30	0.99
	1015	8400	0.12	1.02		1519	8400	0.18	1.02
	915	8400	0.11	0.65		1369	8400	0.16	0.65
	993	8400	0.12	1.05		1486	8400	0.18	1.05
	930	8400	0.11	0.35		1391	8400	0.17	0.35
			0.10			1249.25	8537.02	0.15	
Roadway Segment	1999					2015			
	TOT_VOL	TOT_CAP	V/C	Length		TOT_VOL	TOT_CAP	V/C	Length
FM 511	5970	11200	0.53	0.62		8932	11200	0.80	0.62
	6516	8400	0.78	1.00		9749	8400	1.16	1.00
	5948	8400	0.71	0.51		8899	8400	1.06	0.51
	3999	8400	0.48	0.49		5983	8400	0.71	0.49
	5017	11200	0.45	0.88		7506	11200	0.67	0.88
	5040	8400	0.60	0.50		7541	8400	0.90	0.50
	6334	8400	0.75	0.51		9477	8400	1.13	0.51
	4965	8400	0.59	0.19		7428	8400	0.88	0.19
			0.62			8378.05	9293.62	0.90	
Roadway Segment	1999					2015			
	TOT_VOL	TOT_CAP	V/C	Length		TOT_VOL	TOT_CAP	V/C	Length
FM 3068	2616	8400	0.31	0.38		3914	8400	0.47	0.38
	870	8400	0.10	1.13		1302	8400	0.15	1.13
			0.16			1959.02	8400.00	0.23	

2015 Build Calculations

Segment	2015 ADT	% of Total	2015 ADT Reduction	ADT With East Loop	Capacity	V/C
SH 48/SH 4	23580	0.455396976	2732.381854	20848	22819.244	0.91
FM 1419	16613	0.320844358	1925.066147	14688	20911.2878	0.70
FM 1419	1249	0.024121748	144.7304892	1104	8537.02422	0.13
FM 511	8378	0.161803048	970.8182854	7407	9293.61702	0.80
FM 3068	1959	0.037833871	227.0032252	1732	8400.000	0.21
East Loop				6000		

2030 Build Calculations

Segment	2030 ADT	% of Total	2015 ADT Reduction	ADT With East Loop	Capacity	V/C
SH 48/SH 4	34402	0.449758138	8995.162766	25407	22819.244	1.11
FM 1419	24237	0.31686495	6337.298993	17900	20911.2878	0.86
FM 1419	1823	0.023833181	476.6636162	1346	8537.02422	0.16
FM 511	12223	0.159798666	3195.97333	9027	9293.61702	0.97
FM 3068	3805	0.049745065	994.9012943	2810	8400.000	0.33
East Loop				20000		

VMT Growth (1999 to 2030)

VMT 1999	VMT 2030	% Growth	% Annual Growth
2,304,512	5,029,232	118.23	2.55

Monetizing of Fatalities and Injuries (2013 to 2030)

Calendar Year	Project Year	Total Fatalities		Total Injuries		Reduction in Fatalities	Reduction in Injuries	Cost of Fatality	Cost of Injury	Total Value (Reduction of Fatalities)	Total Value (Reduction of Injuries)	Total Value (Reduction in Injuries and Fatalities)	Total Value of Tiger II Grant Portion
		No-Build	Build	No-Build	Build								
2013	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2015	3	2	1	271	136	1	135	\$6,000,000	\$93,000	\$6,000,000	\$12,555,000	\$18,555,000	\$5,566,500
2016	4	2	1	278	139	1	139	\$6,000,000	\$93,000	\$6,000,000	\$12,927,000	\$18,927,000	\$5,678,100
2017	5	2	1	285	142	1	143	\$6,000,000	\$93,000	\$6,000,000	\$13,299,000	\$19,299,000	\$5,789,700
2018	6	2	1	292	146	1	146	\$6,000,000	\$93,000	\$6,000,000	\$13,578,000	\$19,578,000	\$5,873,400
2019	7	2	1	300	150	1	150	\$6,000,000	\$93,000	\$6,000,000	\$13,950,000	\$19,950,000	\$5,985,000
2020	8	2	1	307	154	1	153	\$6,000,000	\$93,000	\$6,000,000	\$14,229,000	\$20,229,000	\$6,068,700
2021	9	2	1	315	158	1	157	\$6,000,000	\$93,000	\$6,000,000	\$14,601,000	\$20,601,000	\$6,180,300
2022	10	2	1	323	162	1	161	\$6,000,000	\$93,000	\$6,000,000	\$14,973,000	\$20,973,000	\$6,291,900
2023	11	2	1	331	166	1	165	\$6,000,000	\$93,000	\$6,000,000	\$15,345,000	\$21,345,000	\$6,403,500
2024	12	3	1	340	170	2	170	\$6,000,000	\$93,000	\$12,000,000	\$15,810,000	\$27,810,000	\$8,343,000
2025	13	3	1	349	174	2	175	\$6,000,000	\$93,000	\$12,000,000	\$16,275,000	\$28,275,000	\$8,482,500
2026	14	3	1	357	179	2	178	\$6,000,000	\$93,000	\$12,000,000	\$16,554,000	\$28,554,000	\$8,566,200
2027	15	3	1	367	183	2	184	\$6,000,000	\$93,000	\$12,000,000	\$17,112,000	\$29,112,000	\$8,733,600
2028	16	3	1	376	188	2	188	\$6,000,000	\$93,000	\$12,000,000	\$17,484,000	\$29,484,000	\$8,845,200
2029	17	3	1	386	193	2	193	\$6,000,000	\$93,000	\$12,000,000	\$17,949,000	\$29,949,000	\$8,984,700
2030	18	3	1	395	198	2	197	\$6,000,000	\$93,000	\$12,000,000	\$18,321,000	\$30,321,000	\$9,096,300
Total		39	16			23		\$96,000,000	\$1,488,000	\$138,000,000	\$244,962,000	\$382,962,000	\$114,888,600

Monetizing of Travel Time (2013 to 2030)

Calendar Year	Project Year	Affected Drivers	Travel Time (Hours)		Travel Time Saved (Build Scenario)	Total Value of Time Saved	Total Value of Tiger II Grant Portion
			No-Build	Build			
2013	1	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	N/A	N/A	N/A	N/A	N/A	N/A
2015	3	51,779	3,537,399	3,563,168	-25,769	-\$288,610	-\$86,583
2016	4	53,141	3,686,678	3,683,959	2,718	\$30,443	\$9,133
2017	5	54,538	3,842,255	3,808,846	33,410	\$374,188	\$112,256
2018	6	55,973	4,004,399	3,937,966	66,433	\$744,049	\$223,215
2019	7	57,445	4,173,384	4,071,463	101,922	\$1,141,521	\$342,456
2020	8	58,956	4,349,501	4,209,485	140,016	\$1,568,177	\$470,453
2021	9	60,506	4,533,050	4,352,187	180,863	\$2,025,668	\$607,700
2022	10	62,097	4,724,345	4,499,726	224,619	\$2,515,730	\$754,719
2023	11	63,731	4,923,712	4,652,267	271,445	\$3,040,188	\$912,057
2024	12	65,407	5,131,493	4,809,978	321,514	\$3,600,959	\$1,080,288
2025	13	67,127	5,348,042	4,973,037	375,005	\$4,200,055	\$1,260,017
2026	14	68,892	5,573,729	5,141,623	432,106	\$4,839,591	\$1,451,877
2027	15	70,704	5,808,940	5,315,924	493,017	\$5,521,787	\$1,656,536
2028	16	72,564	6,054,078	5,496,133	557,944	\$6,248,975	\$1,874,692
2029	17	74,472	6,309,560	5,682,452	627,107	\$7,023,602	\$2,107,081
2030	18	76,490	6,575,823	5,981,632	594,191	\$6,654,936	\$1,996,481
Total			78,576,386	74,179,846	4,396,541	\$49,241,258	\$14,772,377

3,537,399	6,576,792	85.92167841	4.4
3,563,168	5,981,632	67.87398954	3.39
51,779	76,490	47.72398076	2.63

Monetizing of Vehicle Emissions (2013 to 2030)

Calendar Year	Project Year	Annual VMT		Increase in Annual VMT	Cost of Pollution per Vehicle Mile Traveled (US Dollar)	Total Value of Cost of Pollution	Total Value of Tiger II Grant Portion
		No-Build	Build				
2013	1	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	N/A	N/A	N/A	N/A	N/A	N/A
2015	3	131,367,508	144,505,817	13,138,309	0.21	\$2,759,045	\$827,713
2016	4	134,717,380	149,288,960	14,571,580	0.21	\$3,060,032	\$918,010
2017	5	138,152,673	154,230,424	16,077,752	0.21	\$3,376,328	\$1,012,898
2018	6	141,675,566	159,335,451	17,659,885	0.21	\$3,708,576	\$1,112,573
2019	7	145,288,293	164,609,455	19,321,162	0.21	\$4,057,444	\$1,217,233
2020	8	148,993,144	170,058,028	21,064,883	0.21	\$4,423,626	\$1,327,088
2021	9	152,792,469	175,686,948	22,894,479	0.21	\$4,807,841	\$1,442,352
2022	10	156,688,677	181,502,186	24,813,509	0.21	\$5,210,837	\$1,563,251
2023	11	160,684,239	187,509,909	26,825,670	0.21	\$5,633,391	\$1,690,017
2024	12	164,781,687	193,716,487	28,934,800	0.21	\$6,076,308	\$1,822,892
2025	13	168,983,620	200,128,502	31,144,883	0.21	\$6,540,425	\$1,962,128
2026	14	173,292,702	206,752,756	33,460,054	0.21	\$7,026,611	\$2,107,983
2027	15	177,711,666	213,596,272	35,884,606	0.21	\$7,535,767	\$2,260,730
2028	16	182,243,314	220,666,309	38,422,995	0.21	\$8,068,829	\$2,420,649
2029	17	186,890,518	227,970,364	41,079,846	0.21	\$8,626,768	\$2,588,030
2030	18	191,656,226	235,450,264	43,794,038	0.21	\$9,196,748	\$2,759,024
Total		2,555,919,682	2,985,008,132	429,088,450		\$90,108,575	\$27,032,572

1990	2015	131,367,508	191,656,226	2.55
0.112	0.210	144,505,817	235,450,264	3.31

Monetizing of Vehicle Maintenance (2013 to 2030)

Calendar Year	Project Year	Daily Vehicle Miles Traveled (VMT)		Reduction in VMT	Truck VMT	Personal Vehicle VMT	Maintenance Costs (Trucks)	Maintenance Costs (Personal Vehicles)	Total Value of Maintenance Reductions (US Dollar)	Total (Tiger II Grant Portion)
		No-Build	Build							
2013	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2014	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2015	3	359,911	318,206	41,705	17,996	23,709	\$256,617	\$3,556	\$260,173	\$78,052
2016	4	369,089	322,343	46,746	20,171	26,575	\$287,635	\$3,986	\$291,621	\$87,486
2017	5	378,500	326,533	51,967	22,424	29,543	\$319,763	\$4,431	\$324,194	\$97,258
2018	6	388,152	330,778	57,374	24,757	32,617	\$353,032	\$4,893	\$357,925	\$107,377
2019	7	398,050	335,079	62,972	27,172	35,799	\$387,476	\$5,370	\$392,846	\$117,854
2020	8	408,200	339,435	68,766	29,672	39,093	\$423,129	\$5,864	\$428,993	\$128,698
2021	9	418,610	343,847	74,762	32,260	42,502	\$460,027	\$6,375	\$466,402	\$139,921
2022	10	429,284	348,317	80,967	34,937	46,030	\$498,204	\$6,904	\$505,109	\$151,533
2023	11	440,231	352,845	87,385	37,707	49,679	\$537,699	\$7,452	\$545,151	\$163,545
2024	12	451,457	357,432	94,024	40,571	53,453	\$578,550	\$8,018	\$586,568	\$175,970
2025	13	462,969	362,079	100,890	43,534	57,356	\$620,794	\$8,603	\$629,398	\$188,819
2026	14	474,775	366,786	107,989	46,597	61,391	\$664,474	\$9,209	\$673,683	\$202,105
2027	15	486,881	371,554	115,327	49,764	65,563	\$709,629	\$9,835	\$719,464	\$215,839
2028	16	499,297	376,384	122,912	53,037	69,876	\$756,303	\$10,481	\$766,784	\$230,035
2029	17	512,029	381,277	130,751	56,419	74,332	\$804,538	\$11,150	\$815,688	\$244,706
2030	18	525,086	386,069	139,016	59,986	79,031	\$855,394	\$11,855	\$867,249	\$260,175
Total		7,002,520	5,618,967	1,383,553	597,003	786,550	8,513,264	117,982	\$8,631,247	\$2,589,374

359,911	525,086
318,206	386,069

2.55
1.30

Schedule of Costs of the Project (2013 to 2030)

Calendar Year	Project Year	Construction Costs	Operations and Maintenance Costs*	Total (Proposed Project)	Total (Tiger II Grant Portion)*
2013	1	\$12,600,000	N/A	\$12,600,000	\$5,707,800
2014	2	\$23,100,000	N/A	\$23,100,000	\$10,464,300
2015	3	\$15,100,000	N/A	\$15,100,000	\$6,827,900
2016	4	N/A	\$1,313,400	\$1,313,400	\$594,970
2017	5	N/A	\$1,349,453	\$1,349,453	\$611,302
2018	6	N/A	\$1,430,096	\$1,430,096	\$647,833
2019	7	N/A	\$1,450,759	\$1,450,759	\$657,194
2020	8	N/A	\$1,755,068	\$1,755,068	\$795,046
2021	9	N/A	\$1,551,253	\$1,551,253	\$702,718
2022	10	N/A	\$2,043,943	\$2,043,943	\$925,906
2023	11	N/A	\$1,979,969	\$1,979,969	\$896,926
2024	12	N/A	\$1,742,761	\$1,742,761	\$789,471
2025	13	N/A	\$2,070,152	\$2,070,152	\$937,779
2026	14	N/A	\$1,722,775	\$1,722,775	\$780,417
2027	15	N/A	\$2,069,663	\$2,069,663	\$937,557
2028	16	N/A	\$1,818,852	\$1,818,852	\$823,940
2029	17	N/A	\$2,500,176	\$2,500,176	\$1,132,580
2030	18	N/A	\$2,384,474	\$2,384,474	\$1,080,167
Total		\$50,800,000	\$27,182,794	\$77,982,794	\$35,313,806

Fatalities and Injuries Calculations

Year	Total Fatalities		Total Injuries		Reduction in Fatalities	Reduction in Injuries
	No-Build	Build	No-Build	Build		
2015	2	1	271	136	1	135
2030	3	1	395	198	2	197

Total fatalities No-Build
 2006-2009 8
 2009 (Ave) 2
 2015 2

Total injuries No-Build
 2006-2009 931
 2009 (Ave) 233
 2015 2