

MEMORANDUM

Date: July 10, 2017

To: Ginger Koblasz and Josh Lee, SBCTA

From: Miguel Núñez and Steven Keith, Fehr & Peers

Subject: SBCTA Points of Interest Pedestrian Plan - Task 1.5 Cost-Effectiveness Model

OC15-0412

A cost-benefit analysis (CBA) has been conducted on the proposed SBCTA Points of Interest Pedestrian Plan (PIPP). The CBA helps to evaluate both the costs of a proposed project and its potential benefits. The costs are determined by looking at the capital and maintenance costs over a twenty-year period. The benefits consider the impact on environmental sustainability, quality of life, economic competitiveness, and safety for the same time period. The estimated benefits of constructing the proposed projects are then compared to the estimated costs of implementation, to get a benefit-cost ratio. A summary of the CBA is presented in Table 1, including estimated costs, estimated benefits, net present value, the internal rate of return, and benefit-cost ratio for each jurisdiction's investments (the proposed pedestrian improvements).

This data can be used by SBCTA and its member jurisdictions in the project planning, approval, and implementation process. The results of this analysis (summarized in Table 1 and detailed in the following pages) can help individual cities better understand and communicate the investments in and benefits from pedestrian improvements. There are several different output tables found in the Appendices of the CBA, each of which help explain how dollars are translated into various types of benefits for residents. Jurisdictions can use this information to inform stakeholders how pedestrian infrastructure can result in numerous and diverse benefits for the community.

Results in Table 1 show that there are wide ranges in estimated benefits and nearly every jurisdiction has a positive benefit-cost ratio, net present value, and internal rate of return when making an investment in pedestrian infrastructure improvements. This is the outcome of several factors. If a city has a higher annual vehicle miles traveled, then the potential for the amount of travel to shift

to active transportation modes is greater, resulting in higher monetary benefits. This can be seen in Ontario and San Bernardino. If the proposed improvements are less costly for the jurisdiction and generate similar benefits, the ratio will be more favorable, all else being constant, since the ratio will be compared to higher infrastructure costs with similar benefits in other jurisdictions. This can be seen in cities with low estimated costs such as Rancho Cucamonga and Victorville.

Cities with higher estimated future population growth also saw greater benefits in implementing pedestrian improvements. This is a result of the potential to shift more vehicle trips to bicycle trips and also a cumulative reduction in vehicle miles traveled. Rapid growth projections over the next 20 years explain the higher benefit-cost ratios for cities such as Ontario, Rancho Cucamonga, and Fontana. It also explains why locations with little or no forecasted growth, such as Needles and Big Bear Lake, exhibit lower benefit-cost ratios relative to other jurisdictions.

The CBA model utilized to develop these estimates is proprietary to Alta Planning + Design and is based on factors, assumptions, and monetary values established in a variety of sources such as the American Automobile Association, Victoria Transport Policy Institute, Environmental Protection Agency, Centers for Disease Control, and rigorous academic research. Several grants, such as the Active Transportation Program and Highway Safety Improvement Program require the application of specific cost-benefit calculators that are made available through the state for each funding source. This document and analysis should be used as a supplement to other resources, helping to make the case for a projects' benefits or additional considerations, a relevant and valuable tool in assessing projects. The benefit-cost models for funding sources are made available with the funding applications and can change over time. The Alta model can also be updated as new information is provided. If you would like more information regarding details or updates to the Alta CBA model, please contact analytics@altaplanning.com.

This CBA memo provides useful and detailed information to SBCTA and its member jurisdictions. It can be used as a tool to better understand investments in pedestrian infrastructure and the positive impact these types of investments can have for all residents of these jurisdictions.



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MEMORANDUM

To: Ginger Koblasz and Josh Lee, SBCTA

From: Josh Clark and Kyle James, Alta Planning + Design

Date: May 12, 2017

Re: SBCTA Points of Interest Pedestrian Plan - Task 1.5 Cost-Effectiveness Model

Summary

This cost-benefit analysis (CBA) weighs the costs (capital and maintenance) and benefits (environmental sustainability, quality of life, economic competitiveness, safety, and state of good repair) that would accrue during construction and over a 20-year evaluation period after completion of the proposed projects within the *SBCTA Points of Interest Pedestrian Plan*. While construction of the proposed projects will benefit residents and visitors to the region, this analysis considers only residents of the study communities.

Table 1 shows a summary of the discounted findings of the CBA (all values presented in 2017 constant dollars). The estimated benefits of constructing the proposed projects is compared to the estimated costs of implementation over a 20-year, post-construction period. The balance of these benefits and costs are summarized using three common economic terms: net present value, internal rate of return, and benefit-cost ratio. The net present value of a project shows whether the estimated benefits generated by a project (in present dollars) exceeds the anticipated costs (also in present dollars). Generally, any project with a positive net present value is likely to be profitable and one with a negative net present value may lead to a net loss. The estimated net present value for each of the jurisdictions ranged between approximately -\$3 million and \$383 million depending on the number of people in the study area and the estimated change mode share.

Internal rate of return is another common alternative to net present value, and it shows projected rate of growth of a project by representing the discount rate of an investment when the net present value is zero. This allows projects of different scales (i.e., a \$1.8 million investment in Rancho Cucamonga and a \$15.9 million investment in Highland) and different timelines (i.e., a project that would complete construction in 2018 and one that would complete construction in 2025) to be more readily compared. The estimated internal rate of return for each of the jurisdictions ranged between approximately -5 percent and 181 percent depending the relationship between the estimated costs and the magnitude of the estimated benefits.

A third common economic measure included in **Table 1** is the benefit-cost ratio, which is calculated by dividing the total discounted benefits by the total discounted costs. A benefit-cost ratio greater than 1 represents a project where the benefits are greater than the costs. The estimated benefit-cost ratios for each of the jurisdictions ranged between approximately 0.7 and 184.1 depending on the estimated costs, the magnitude of the estimated benefits, and how long it would take to construct the proposed project.

Taken together, the net present value, internal rate of return, and benefit-cost ratio offer multiple ways of understanding the cost effectiveness of a given project or set of projects. Collectively, the proposed projects for the SBCTA region show a net present value of \$1.9 billion (e.g., 20 years after the last projected is constructed, the benefits generated by the project will be worth \$1.9 billion compared to the \$125 million needed to construct and maintain the projects), an internal rate of return of 30 percent (e.g., over a 20-year period, the proposed projects are expected to generate 30% annual returns on the original investment), and a benefit-cost ratio of 16.5 (e.g., the benefits of the proposed projects are 16 times greater than their costs).

Table 1: 20-year Cost-Effectiveness Summary (20 years post-construction at 3% Discount Rate)

Jurisdiction	Estimated Costs	Estimated Benefits of Active Transportation (No Build)	Estimated Benefits of Active Transportation (Build)	Net Present Value	Internal Rate of Return	Benefit-Cost Ratio
Adelanto	\$2,783,000	\$7,230,000	\$52,320,000	\$23,520,000	32.76%	18.8
Apple Valley	\$3,294,000	\$11,953,000	\$61,563,000	\$58,270,000	45.41%	18.7
Barstow	\$3,255,000	\$19,433,000	\$32,539,000	\$29,290,000	38.70%	10.0
Big Bear Lake	\$11,242,000	\$3,180,000	\$8,220,000	-\$3,020,000	-5.20%	0.7
Chino	\$2,701,000	\$30,697,000	\$122,914,000	\$120,220,000	72.45%	45.5
Chino Hills	\$3,097,000	\$12,500,000	\$64,859,000	\$61,770,000	51.54%	21.0
Colton	\$3,288,000	\$12,049,000	\$58,989,000	\$55,700,000	44.91%	18.0
Crestline	\$779,000	\$2,100,000	\$5,844,000	\$5,060,000	57.08%	7.5
Fontana	\$5,309,000	\$72,795,000	\$224,007,000	\$218,700,000	64.27%	42.2
Grand Terrace	\$7,830,000	\$1,811,000	\$14,923,000	\$7,090,000	7.03%	1.9
Hesperia	\$7,082,000	\$9,691,000	\$81,198,000	\$74,120,000	30.98%	11.5
Highland	\$15,909,000	\$7,591,000	\$38,741,000	\$22,830,000	9.27%	2.4
Loma Linda	\$6,585,000	\$30,540,000	\$68,887,000	\$62,300,000	36.64%	10.5
Montclair	\$3,871,000	\$43,950,000	\$60,429,000	\$56,560,000	48.04%	15.6
Needles	\$5,209,000	\$5,806,000	\$10,956,000	\$3,260,000	0.87%	1.1
Ontario	\$4,268,000	\$257,270,000	\$387,713,000	\$383,450,000	95.28%	90.8
Rancho Cucamonga	\$1,836,000	\$127,200,000	\$337,515,000	\$335,680,000	181.32%	184.1
Redlands	\$2,350,000	\$58,308,000	\$144,808,000	\$142,460,000	97.92%	61.6
Rialto	\$9,019,000	\$43,892,000	\$90,388,000	\$81,370,000	28.44%	10.0
San Bernardino	\$5,416,000	\$58,052,000	\$245,639,000	\$240,220,000	78.36%	45.3
Twentynine Palms	\$6,172,000	\$64,626,000	\$64,626,000	\$58,460,000	50.08%	10.5
Upland	\$7,166,000	\$51,890,000	\$121,002,000	\$113,830,000	40.62%	16.9
Victorville	\$1,665,000	\$22,695,000	\$137,874,000	\$136,210,000	116.30%	82.7
Yucaipa	\$5,016,000	\$20,696,000	\$50,610,000	\$45,590,000	35.86%	10.1
Yucca Valley	\$2,555,000	\$16,979,000	\$28,663,000	\$26,110,000	41.51%	11.2
SBCTA Region	\$125,301,000	\$669,970,000	\$2,062,570,000	\$1,937,260,000	30.02%	16.5

At a 3 percent real discount rate, the net present value for the region is \$1.9 billion and the internal rate of return is 30 percent. At a 7 percent real discount rate, the net present value of the region is \$861,150,000, and the internal rate of return is 25 percent.

Method

This CBA approach expands on the methods suggested by the National Cooperative Highway Research Program (NCHRP) Report 552: *Guidelines for Analysis of Investments in Bicycle Facilities* by incorporating detailed local demographic information and using new data and research that has become available since *Guidelines for Analysis* was published in 2006.

One notable difference is the consideration of benefits from both bicycling and walking activity using different impact areas for each mode. By comparison, *Guidelines for Analysis* only provides guidance for measuring bicycling benefits and does not quantify pedestrian benefits for multi-use paths. Another difference is the estimate of utilitarian (non-commute) and school trips in addition to work commute trips. This addition helps capture the full range of bicycling and walking trips in the project area. The CBA also considers local travel patterns, trip distances, and public health to create a complete, detailed picture of benefits generated by the proposed facilities.

Demand

To forecast the change in travel using active transportation modes for each jurisdiction following completion of the proposed projects, a demand analysis was conducted for the region (see separate “Needs Analysis Process” memo). Walk trip mode at full project build-out for the region was estimated to be 11.60 percent and was applied to each jurisdiction.

Inputs

This CBA uses a series of factors and multipliers to quantify the costs and benefits of the proposed projects. It first looks at the mode share of active transportation trips within the study area by trip purpose that are expected to replace motor vehicle trips based on the forecasted change in mode share noted above. Second, the average trip length by trip purpose is estimated for the replaced trips. Finally, the estimate of vehicle-miles travelled (VMT) reduced is multiplied by a series of benefit factors to show how the reduction in VMT leads to environmental, quality of life, economic, safety, and roadway maintenance benefits, as discussed below:

- **Table 2:** Environmental Sustainability Factors – For each VMT reduced, a small amount of greenhouse gases and other criteria pollutants is prevented from entering the atmosphere. A dollar value representing how much it would cost to remove these pollutants from the atmosphere was estimated for each pollutant. All values were derived from Environmental Protection Agency and White House estimates.
- **Table 3:** Quality of Life Factors – California is a relatively healthy state with 81 percent of its adult population meeting the Centers for Disease Control and Prevention's (CDC) recommended minimum amount of physical activity per week. For the remaining 19 percent, improved walking infrastructure is likely to encourage more residents to meet that recommended minimum. And for each new person meeting the recommended minimum, the CDC estimates that the healthcare costs for the region are reduced by roughly \$1,400 per year.
- **Table 4:** Economic Competitiveness Factors – Each trip by motor vehicle takes a toll on the driver's pocket book and contributes to congestion on the roadway. The American Automobile Association (AAA) estimates that each mile traveled by motor vehicle costs the user \$0.69 in time, fuel, maintenance, insurance, and other household transportation costs.
- **Table 5:** Safety Factor – Fewer motor vehicle trips can also lead to a reduction in the number of collisions. AAA estimates that a region saves \$0.20 in avoided collision costs (i.e., motor vehicle damage, hospital bills, etc.) for every VMT reduced.
- **Table 6:** State of Good Repair Factors – A reduction in VMT also slows the degradation of pavement. Kitamura and Zhou (1989) found in their definitive study of pavement maintenance costs, that each motor vehicle trip reduced saves a region \$0.14 in roadway maintenance costs (inflation-adjusted).

In addition, the impact on travel time, delays from construction, noise, and property value were analyzed but found to have a negligible impact compared to a no build alternative.

Table 2: Environmental Sustainability Factors

	Value (metric tons/VMT)	Value (\$USD/VMT)
Particulate Matter (PM) ⁱ	0.0000001	\$0.02
Nitrous Oxides (NOx) ⁱⁱ	0.0000009	\$0.01
Sulfur Oxides (SOx) ⁱⁱⁱ	0.0000000	\$0.00
Volatile Organic Compounds (VOC) ^{iv}	0.0000012	\$0.00
Carbon Dioxide ^v	0.0004940	\$0.02

Table 3: Quality of Life Factors

	Value
Physically Inactive Adults in California	19% ^{vi}
Healthcare Cost Savings	\$1,444 per newly active person ^{vii}

Table 4: Economic Competitiveness Factors*

	Value
Household Transportation Cost Savings	\$0.63 per VMT ^{viii}
Congestion Cost Savings	\$0.06 per VMT ^x
Travel Times Savings – All Trip Purposes**	\$0 per VMT ^x

*This CBA analyzed changes in property value within the study area and found no evidence to support an increase or decrease in property values following completion of the project.

**The Victoria Transport Policy Institute found in their 2013 study “Transportation Cost and Benefit Analysis II – Travel Time Costs” that the user of an average car and a bicycle had the same “effective speed” after taking into account annual hours worked, average travel speed, travel time, and support time (maintenance, etc.). This CBA, therefore, excludes travel time as a cost or benefit.

Table 5: Safety Factor

	Value (metric tons/VMT)
Collision Cost Savings	\$0.20 per VMT ^{xi}

Table 6: State of Good Repair Factor

	Value (metric tons/VMT)
Roadway Maintenance Cost Savings	\$0.14 per VMT ^{xii}

Appendices

See Appendix A – Z for a more detailed cost-benefit breakdown for each jurisdiction.

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- [Appendix B: Apple Valley](#)
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Appendix A: Adelanto

Table 7: Estimated Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$195,203	\$0	\$0	\$195,203
Year -3	2019	\$260,270	\$0	\$0	\$260,270
Year -2	2020	\$520,540	\$0	\$0	\$520,540
Year -1	2021	\$195,203	\$0	\$0	\$195,203
Year 0	2022	\$130,135	\$0	\$0	\$130,135
Year 1	2023	\$0	\$130,135	\$0	\$130,135
Year 2	2024	\$0	\$130,135	\$0	\$130,135
Year 3	2025	\$0	\$130,135	\$0	\$130,135
Year 4	2026	\$0	\$130,135	\$0	\$130,135
Year 5	2027	\$0	\$130,135	\$0	\$130,135
Year 6	2028	\$0	\$130,135	\$0	\$130,135
Year 7	2029	\$0	\$130,135	\$0	\$130,135
Year 8	2030	\$0	\$130,135	\$0	\$130,135
Year 9	2031	\$0	\$130,135	\$0	\$130,135
Year 10	2032	\$0	\$130,135	\$0	\$130,135
Year 11	2033	\$0	\$130,135	\$0	\$130,135
Year 12	2034	\$0	\$130,135	\$0	\$130,135
Year 13	2035	\$0	\$130,135	\$0	\$130,135
Year 14	2036	\$0	\$130,135	\$0	\$130,135
Year 15	2037	\$0	\$130,135	\$0	\$130,135
Year 16	2038	\$0	\$130,135	\$0	\$130,135
Year 17	2039	\$0	\$130,135	\$0	\$130,135
Year 18	2040	\$0	\$130,135	\$0	\$130,135
Year 19	2041	\$0	\$130,135	\$0	\$130,135
Year 20	2042	\$0	\$130,135	\$0	\$130,135
	AVERAGE	\$48,000	\$96,000	\$0	\$145,000
	TOTAL	\$1,301,351	\$2,602,700	\$0	\$3,904,051

Table 8: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	447,000	285,000	188,000
Year -5	2017	495,000	315,000	208,000
Year -4	2018	543,000	346,000	229,000
Year -3	2019	591,000	376,000	249,000
Year -2	2020	639,000	407,000	269,000
Year -1	2021	687,000	437,000	289,000
Year 0	2022	735,000	467,000	310,000
Year 1	2023	1,196,000	758,000	508,000
Year 2	2024	1,710,000	1,081,000	729,000
Year 3	2025	2,275,000	1,437,000	973,000
Year 4	2026	2,893,000	1,826,000	1,238,000
Year 5	2027	3,562,000	2,247,000	1,526,000
Year 6	2028	4,282,000	2,701,000	1,836,000
Year 7	2029	5,055,000	3,188,000	2,169,000
Year 8	2030	5,880,000	3,707,000	2,524,000
Year 9	2031	6,756,000	4,259,000	2,901,000
Year 10	2032	7,685,000	4,843,000	3,301,000
Year 11	2033	8,665,000	5,460,000	3,723,000
Year 12	2034	9,697,000	6,110,000	4,167,000
Year 13	2035	10,780,000	6,792,000	4,633,000
Year 14	2036	11,916,000	7,507,000	5,122,000
Year 15	2037	13,103,000	8,255,000	5,633,000
Year 16	2038	14,343,000	9,035,000	6,167,000
Year 17	2039	15,634,000	9,848,000	6,723,000
Year 18	2040	16,977,000	10,693,000	7,301,000
Year 19	2041	18,372,000	11,572,000	7,901,000
Year 20	2042	19,818,000	12,482,000	8,524,000
	AVERAGE	6,842,000	4,312,000	2,939,000
	TOTAL	184,736,000	116,434,000	79,341,000

Table 9: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$26,000	\$0	\$347,000	\$169,000	\$74,000	\$615,000
Year 2	2024	\$37,000	\$0	\$497,000	\$242,000	\$106,000	\$882,000
Year 3	2025	\$49,000	\$0	\$663,000	\$323,000	\$141,000	\$1,176,000
Year 4	2026	\$63,000	\$0	\$844,000	\$411,000	\$179,000	\$1,497,000
Year 5	2027	\$77,000	\$0	\$1,041,000	\$507,000	\$221,000	\$1,846,000
Year 6	2028	\$93,000	\$0	\$1,252,000	\$610,000	\$266,000	\$2,221,000
Year 7	2029	\$110,000	\$0	\$1,479,000	\$720,000	\$314,000	\$2,623,000
Year 8	2030	\$128,000	\$0	\$1,721,000	\$838,000	\$365,000	\$3,052,000
Year 9	2031	\$147,000	\$0	\$1,979,000	\$963,000	\$420,000	\$3,509,000
Year 10	2032	\$167,000	\$0	\$2,251,000	\$1,096,000	\$478,000	\$3,992,000
Year 11	2033	\$189,000	\$0	\$2,539,000	\$1,236,000	\$539,000	\$4,502,000
Year 12	2034	\$211,000	\$0	\$2,842,000	\$1,383,000	\$603,000	\$5,039,000
Year 13	2035	\$235,000	\$0	\$3,160,000	\$1,538,000	\$670,000	\$5,604,000
Year 14	2036	\$260,000	\$0	\$3,494,000	\$1,701,000	\$741,000	\$6,195,000
Year 15	2037	\$286,000	\$0	\$3,842,000	\$1,870,000	\$815,000	\$6,813,000
Year 16	2038	\$313,000	\$0	\$4,210,000	\$2,047,000	\$892,000	\$7,458,000
Year 17	2039	\$341,000	\$0	\$4,585,000	\$2,232,000	\$973,000	\$8,131,000
Year 18	2040	\$370,000	\$0	\$4,980,000	\$2,424,000	\$1,056,000	\$8,830,000
Year 19	2041	\$401,000	\$0	\$5,389,000	\$2,623,000	\$1,143,000	\$9,556,000
Year 20	2042	\$432,000	\$0	\$5,814,000	\$2,830,000	\$1,233,000	\$10,310,000
	AVERAGE	\$146,000	\$0	\$1,960,000	\$954,000	\$416,000	\$3,476,000
	TOTAL	\$3,935,000	\$0	\$52,929,000	\$25,763,000	\$11,229,000	\$93,851,000

Table 10: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$184,000	-\$184,000	-\$184,000
Year -3	2019	\$0	\$238,000	-\$238,000	-\$422,000
Year -2	2020	\$0	\$462,000	-\$462,000	-\$885,000
Year -1	2021	\$0	\$168,000	-\$168,000	-\$1,053,000
Year 0	2022	\$0	\$109,000	-\$109,000	-\$1,162,000
Year 1	2023	\$500,000	\$106,000	\$394,000	-\$768,000
Year 2	2024	\$696,000	\$103,000	\$594,000	-\$174,000
Year 3	2025	\$901,000	\$100,000	\$802,000	\$627,000
Year 4	2026	\$1,114,000	\$97,000	\$1,017,000	\$1,645,000
Year 5	2027	\$1,333,000	\$94,000	\$1,239,000	\$2,884,000
Year 6	2028	\$1,558,000	\$91,000	\$1,466,000	\$4,351,000
Year 7	2029	\$1,786,000	\$89,000	\$1,698,000	\$6,048,000
Year 8	2030	\$2,018,000	\$86,000	\$1,932,000	\$7,980,000
Year 9	2031	\$2,252,000	\$84,000	\$2,169,000	\$10,149,000
Year 10	2032	\$2,488,000	\$81,000	\$2,407,000	\$12,555,000
Year 11	2033	\$2,724,000	\$79,000	\$2,645,000	\$15,200,000
Year 12	2034	\$2,960,000	\$76,000	\$2,884,000	\$18,084,000
Year 13	2035	\$3,196,000	\$74,000	\$3,121,000	\$21,206,000
Year 14	2036	\$3,430,000	\$72,000	\$3,358,000	\$24,563,000
Year 15	2037	\$3,662,000	\$70,000	\$3,592,000	\$28,156,000
Year 16	2038	\$3,893,000	\$68,000	\$3,825,000	\$31,981,000
Year 17	2039	\$4,120,000	\$66,000	\$4,054,000	\$36,034,000
Year 18	2040	\$4,344,000	\$64,000	\$4,280,000	\$40,314,000
Year 19	2041	\$4,564,000	\$62,000	\$4,502,000	\$44,816,000
Year 20	2042	\$4,781,000	\$60,000	\$4,720,000	\$49,536,000
INTERNAL RATE OF RETURN					37.92%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$49,540,000
BENEFIT - COST RATIO					19

Table 11: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$170,000	-\$170,000	-\$170,000
Year -3	2019	\$0	\$212,000	-\$212,000	-\$383,000
Year -2	2020	\$0	\$397,000	-\$397,000	-\$780,000
Year -1	2021	\$0	\$139,000	-\$139,000	-\$919,000
Year 0	2022	\$0	\$87,000	-\$87,000	-\$1,006,000
Year 1	2023	\$383,000	\$81,000	\$302,000	-\$704,000
Year 2	2024	\$513,000	\$76,000	\$438,000	-\$267,000
Year 3	2025	\$640,000	\$71,000	\$569,000	\$302,000
Year 4	2026	\$761,000	\$66,000	\$695,000	\$998,000
Year 5	2027	\$877,000	\$62,000	\$815,000	\$1,813,000
Year 6	2028	\$986,000	\$58,000	\$928,000	\$2,741,000
Year 7	2029	\$1,089,000	\$54,000	\$1,035,000	\$3,775,000
Year 8	2030	\$1,184,000	\$50,000	\$1,133,000	\$4,909,000
Year 9	2031	\$1,272,000	\$47,000	\$1,225,000	\$6,133,000
Year 10	2032	\$1,352,000	\$44,000	\$1,308,000	\$7,441,000
Year 11	2033	\$1,425,000	\$41,000	\$1,384,000	\$8,825,000
Year 12	2034	\$1,491,000	\$39,000	\$1,452,000	\$10,278,000
Year 13	2035	\$1,549,000	\$36,000	\$1,513,000	\$11,791,000
Year 14	2036	\$1,601,000	\$34,000	\$1,567,000	\$13,359,000
Year 15	2037	\$1,645,000	\$31,000	\$1,614,000	\$14,973,000
Year 16	2038	\$1,683,000	\$29,000	\$1,654,000	\$16,627,000
Year 17	2039	\$1,715,000	\$27,000	\$1,688,000	\$18,315,000
Year 18	2040	\$1,741,000	\$26,000	\$1,715,000	\$20,030,000
Year 19	2041	\$1,761,000	\$24,000	\$1,737,000	\$21,766,000
Year 20	2042	\$1,775,000	\$22,000	\$1,753,000	\$23,519,000
INTERNAL RATE OF RETURN					32.76%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$23,520,000
BENEFIT - COST RATIO					13

Appendix B: Apple Valley

Table 12: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$230,883	\$0	\$0	\$230,883
Year -3	2019	\$307,844	\$0	\$0	\$307,844
Year -2	2020	\$615,688	\$0	\$0	\$615,688
Year -1	2021	\$230,883	\$0	\$0	\$230,883
Year 0	2022	\$153,922	\$0	\$0	\$153,922
Year 1	2023	\$0	\$153,922	\$0	\$153,922
Year 2	2024	\$0	\$153,922	\$0	\$153,922
Year 3	2025	\$0	\$153,922	\$0	\$153,922
Year 4	2026	\$0	\$153,922	\$0	\$153,922
Year 5	2027	\$0	\$153,922	\$0	\$153,922
Year 6	2028	\$0	\$153,922	\$0	\$153,922
Year 7	2029	\$0	\$153,922	\$0	\$153,922
Year 8	2030	\$0	\$153,922	\$0	\$153,922
Year 9	2031	\$0	\$153,922	\$0	\$153,922
Year 10	2032	\$0	\$153,922	\$0	\$153,922
Year 11	2033	\$0	\$153,922	\$0	\$153,922
Year 12	2034	\$0	\$153,922	\$0	\$153,922
Year 13	2035	\$0	\$153,922	\$0	\$153,922
Year 14	2036	\$0	\$153,922	\$0	\$153,922
Year 15	2037	\$0	\$153,922	\$0	\$153,922
Year 16	2038	\$0	\$153,922	\$0	\$153,922
Year 17	2039	\$0	\$153,922	\$0	\$153,922
Year 18	2040	\$0	\$153,922	\$0	\$153,922
Year 19	2041	\$0	\$153,922	\$0	\$153,922
Year 20	2042	\$0	\$153,922	\$0	\$153,922
AVERAGE		\$57,000	\$114,000	\$0	\$171,000
TOTAL		\$1,539,220	\$3,078,442	\$0	\$4,617,662

Table 13: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	1,566,000	946,000	737,000
Year -5	2017	1,590,000	960,000	748,000
Year -4	2018	1,615,000	975,000	759,000
Year -3	2019	1,639,000	989,000	770,000
Year -2	2020	1,664,000	1,004,000	781,000
Year -1	2021	1,689,000	1,018,000	792,000
Year 0	2022	1,713,000	1,033,000	802,000
Year 1	2023	2,440,000	1,482,000	1,105,000
Year 2	2024	3,182,000	1,941,000	1,415,000
Year 3	2025	3,940,000	2,409,000	1,730,000
Year 4	2026	4,712,000	2,886,000	2,052,000
Year 5	2027	5,500,000	3,373,000	2,380,000
Year 6	2028	6,303,000	3,870,000	2,715,000
Year 7	2029	7,121,000	4,376,000	3,056,000
Year 8	2030	7,954,000	4,891,000	3,403,000
Year 9	2031	8,803,000	5,416,000	3,757,000
Year 10	2032	9,667,000	5,950,000	4,117,000
Year 11	2033	10,545,000	6,493,000	4,483,000
Year 12	2034	11,439,000	7,046,000	4,856,000
Year 13	2035	12,349,000	7,609,000	5,235,000
Year 14	2036	13,273,000	8,181,000	5,621,000
Year 15	2037	14,213,000	8,762,000	6,012,000
Year 16	2038	15,167,000	9,353,000	6,410,000
Year 17	2039	16,137,000	9,953,000	6,815,000
Year 18	2040	17,122,000	10,562,000	7,226,000
Year 19	2041	18,123,000	11,181,000	7,643,000
Year 20	2042	19,138,000	11,810,000	8,066,000
	AVERAGE	8,096,000	4,980,000	3,462,000
	TOTAL	218,604,000	134,469,000	93,486,000

Table 14: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$56,000	\$73,000	\$754,000	\$367,000	\$160,000	\$1,410,000
Year 2	2024	\$72,000	\$71,000	\$965,000	\$470,000	\$205,000	\$1,781,000
Year 3	2025	\$88,000	\$68,000	\$1,180,000	\$574,000	\$250,000	\$2,161,000
Year 4	2026	\$104,000	\$65,000	\$1,400,000	\$681,000	\$297,000	\$2,547,000
Year 5	2027	\$121,000	\$63,000	\$1,624,000	\$790,000	\$344,000	\$2,942,000
Year 6	2028	\$138,000	\$60,000	\$1,852,000	\$901,000	\$393,000	\$3,343,000
Year 7	2029	\$155,000	\$57,000	\$2,084,000	\$1,015,000	\$442,000	\$3,753,000
Year 8	2030	\$173,000	\$53,000	\$2,321,000	\$1,130,000	\$492,000	\$4,169,000
Year 9	2031	\$191,000	\$50,000	\$2,562,000	\$1,247,000	\$544,000	\$4,594,000
Year 10	2032	\$209,000	\$46,000	\$2,808,000	\$1,367,000	\$596,000	\$5,025,000
Year 11	2033	\$227,000	\$42,000	\$3,058,000	\$1,488,000	\$649,000	\$5,465,000
Year 12	2034	\$246,000	\$38,000	\$3,312,000	\$1,612,000	\$703,000	\$5,911,000
Year 13	2035	\$266,000	\$34,000	\$3,571,000	\$1,738,000	\$757,000	\$6,366,000
Year 14	2036	\$285,000	\$30,000	\$3,833,000	\$1,866,000	\$813,000	\$6,828,000
Year 15	2037	\$305,000	\$25,000	\$4,101,000	\$1,996,000	\$870,000	\$7,297,000
Year 16	2038	\$325,000	\$21,000	\$4,370,000	\$2,128,000	\$927,000	\$7,774,000
Year 17	2039	\$346,000	\$16,000	\$4,648,000	\$2,262,000	\$986,000	\$8,258,000
Year 18	2040	\$367,000	\$11,000	\$4,928,000	\$2,399,000	\$1,045,000	\$8,750,000
Year 19	2041	\$388,000	\$5,000	\$5,213,000	\$2,537,000	\$1,106,000	\$9,249,000
Year 20	2042	\$409,000	\$0	\$5,501,000	\$2,678,000	\$1,167,000	\$9,756,000
AVERAGE		\$166,000	\$31,000	\$2,225,000	\$1,083,000	\$472,000	\$3,977,000
TOTAL		\$4,471,000	\$828,000	\$60,085,000	\$29,246,000	\$12,746,000	\$107,379,000

Table 15: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$218,000	-\$218,000	-\$218,000
Year -3	2019	\$0	\$282,000	-\$282,000	-\$499,000
Year -2	2020	\$0	\$547,000	-\$547,000	-\$1,046,000
Year -1	2021	\$0	\$199,000	-\$199,000	-\$1,246,000
Year 0	2022	\$0	\$129,000	-\$129,000	-\$1,374,000
Year 1	2023	\$1,146,000	\$125,000	\$1,021,000	-\$353,000
Year 2	2024	\$1,406,000	\$122,000	\$1,285,000	\$931,000
Year 3	2025	\$1,656,000	\$118,000	\$1,538,000	\$2,469,000
Year 4	2026	\$1,896,000	\$115,000	\$1,781,000	\$4,250,000
Year 5	2027	\$2,125,000	\$111,000	\$2,014,000	\$6,264,000
Year 6	2028	\$2,345,000	\$108,000	\$2,237,000	\$8,501,000
Year 7	2029	\$2,555,000	\$105,000	\$2,451,000	\$10,952,000
Year 8	2030	\$2,757,000	\$102,000	\$2,655,000	\$13,607,000
Year 9	2031	\$2,949,000	\$99,000	\$2,850,000	\$16,457,000
Year 10	2032	\$3,132,000	\$96,000	\$3,036,000	\$19,492,000
Year 11	2033	\$3,306,000	\$93,000	\$3,213,000	\$22,705,000
Year 12	2034	\$3,472,000	\$90,000	\$3,382,000	\$26,087,000
Year 13	2035	\$3,630,000	\$88,000	\$3,543,000	\$29,630,000
Year 14	2036	\$3,780,000	\$85,000	\$3,695,000	\$33,325,000
Year 15	2037	\$3,922,000	\$83,000	\$3,840,000	\$37,165,000
Year 16	2038	\$4,057,000	\$80,000	\$3,977,000	\$41,141,000
Year 17	2039	\$4,184,000	\$78,000	\$4,106,000	\$45,247,000
Year 18	2040	\$4,304,000	\$76,000	\$4,228,000	\$49,476,000
Year 19	2041	\$4,417,000	\$74,000	\$4,344,000	\$53,820,000
Year 20	2042	\$4,524,000	\$71,000	\$4,452,000	\$58,272,000
INTERNAL RATE OF RETURN					45.41%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$58,270,000
BENEFIT - COST RATIO					19

Table 16: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$202,000	-\$202,000	-\$202,000
Year -3	2019	\$0	\$251,000	-\$251,000	-\$453,000
Year -2	2020	\$0	\$470,000	-\$470,000	-\$923,000
Year -1	2021	\$0	\$165,000	-\$165,000	-\$1,087,000
Year 0	2022	\$0	\$103,000	-\$103,000	-\$1,190,000
Year 1	2023	\$878,000	\$96,000	\$782,000	-\$408,000
Year 2	2024	\$1,037,000	\$90,000	\$947,000	\$539,000
Year 3	2025	\$1,175,000	\$84,000	\$1,092,000	\$1,631,000
Year 4	2026	\$1,295,000	\$78,000	\$1,217,000	\$2,848,000
Year 5	2027	\$1,398,000	\$73,000	\$1,324,000	\$4,172,000
Year 6	2028	\$1,485,000	\$68,000	\$1,416,000	\$5,588,000
Year 7	2029	\$1,557,000	\$64,000	\$1,493,000	\$7,082,000
Year 8	2030	\$1,617,000	\$60,000	\$1,557,000	\$8,639,000
Year 9	2031	\$1,665,000	\$56,000	\$1,609,000	\$10,248,000
Year 10	2032	\$1,702,000	\$52,000	\$1,650,000	\$11,898,000
Year 11	2033	\$1,730,000	\$49,000	\$1,681,000	\$13,580,000
Year 12	2034	\$1,749,000	\$46,000	\$1,703,000	\$15,283,000
Year 13	2035	\$1,760,000	\$43,000	\$1,718,000	\$17,001,000
Year 14	2036	\$1,764,000	\$40,000	\$1,725,000	\$18,725,000
Year 15	2037	\$1,762,000	\$37,000	\$1,725,000	\$20,450,000
Year 16	2038	\$1,755,000	\$35,000	\$1,720,000	\$22,170,000
Year 17	2039	\$1,742,000	\$32,000	\$1,709,000	\$23,880,000
Year 18	2040	\$1,725,000	\$30,000	\$1,695,000	\$25,574,000
Year 19	2041	\$1,704,000	\$28,000	\$1,676,000	\$27,250,000
Year 20	2042	\$1,680,000	\$27,000	\$1,653,000	\$28,903,000
INTERNAL RATE OF RETURN					39.98%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$28,900,000
BENEFIT - COST RATIO					14

Appendix C: Barstow

Table 17: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$228,069	\$0	\$0	\$228,069
Year -3	2019	\$304,092	\$0	\$0	\$304,092
Year -2	2020	\$608,184	\$0	\$0	\$608,184
Year -1	2021	\$228,069	\$0	\$0	\$228,069
Year 0	2022	\$152,046	\$0	\$0	\$152,046
Year 1	2023	\$0	\$152,046	\$0	\$152,046
Year 2	2024	\$0	\$152,046	\$0	\$152,046
Year 3	2025	\$0	\$152,046	\$0	\$152,046
Year 4	2026	\$0	\$152,046	\$0	\$152,046
Year 5	2027	\$0	\$152,046	\$0	\$152,046
Year 6	2028	\$0	\$152,046	\$0	\$152,046
Year 7	2029	\$0	\$152,046	\$0	\$152,046
Year 8	2030	\$0	\$152,046	\$0	\$152,046
Year 9	2031	\$0	\$152,046	\$0	\$152,046
Year 10	2032	\$0	\$152,046	\$0	\$152,046
Year 11	2033	\$0	\$152,046	\$0	\$152,046
Year 12	2034	\$0	\$152,046	\$0	\$152,046
Year 13	2035	\$0	\$152,046	\$0	\$152,046
Year 14	2036	\$0	\$152,046	\$0	\$152,046
Year 15	2037	\$0	\$152,046	\$0	\$152,046
Year 16	2038	\$0	\$152,046	\$0	\$152,046
Year 17	2039	\$0	\$152,046	\$0	\$152,046
Year 18	2040	\$0	\$152,046	\$0	\$152,046
Year 19	2041	\$0	\$152,046	\$0	\$152,046
Year 20	2042	\$0	\$152,046	\$0	\$152,046
	AVERAGE	\$56,000	\$113,000	\$0	\$169,000
	TOTAL	\$1,520,460	\$3,040,921	\$0	\$4,561,381

Table 18: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	1,949,000	1,077,000	832,000
Year -5	2017	1,996,000	1,103,000	851,000
Year -4	2018	2,043,000	1,129,000	871,000
Year -3	2019	2,090,000	1,155,000	891,000
Year -2	2020	2,137,000	1,180,000	910,000
Year -1	2021	2,183,000	1,206,000	930,000
Year 0	2022	2,230,000	1,232,000	949,000
Year 1	2023	2,467,000	1,365,000	1,048,000
Year 2	2024	2,711,000	1,502,000	1,150,000
Year 3	2025	2,961,000	1,643,000	1,254,000
Year 4	2026	3,219,000	1,788,000	1,362,000
Year 5	2027	3,484,000	1,937,000	1,473,000
Year 6	2028	3,755,000	2,090,000	1,586,000
Year 7	2029	4,034,000	2,247,000	1,703,000
Year 8	2030	4,320,000	2,408,000	1,822,000
Year 9	2031	4,612,000	2,573,000	1,944,000
Year 10	2032	4,912,000	2,742,000	2,070,000
Year 11	2033	5,218,000	2,915,000	2,198,000
Year 12	2034	5,532,000	3,092,000	2,329,000
Year 13	2035	5,853,000	3,273,000	2,463,000
Year 14	2036	6,180,000	3,458,000	2,600,000
Year 15	2037	6,515,000	3,647,000	2,740,000
Year 16	2038	6,856,000	3,839,000	2,883,000
Year 17	2039	7,205,000	4,036,000	3,029,000
Year 18	2040	7,560,000	4,237,000	3,178,000
Year 19	2041	7,922,000	4,442,000	3,330,000
Year 20	2042	8,292,000	4,650,000	3,485,000
	AVERAGE	4,379,000	2,443,000	1,847,000
	TOTAL	118,236,000	65,966,000	49,881,000

Table 19: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$53,000	\$99,000	\$715,000	\$348,000	\$152,000	\$1,367,000
Year 2	2024	\$58,000	\$102,000	\$784,000	\$382,000	\$166,000	\$1,493,000
Year 3	2025	\$64,000	\$105,000	\$856,000	\$416,000	\$181,000	\$1,622,000
Year 4	2026	\$69,000	\$108,000	\$929,000	\$452,000	\$197,000	\$1,755,000
Year 5	2027	\$75,000	\$111,000	\$1,004,000	\$489,000	\$213,000	\$1,892,000
Year 6	2028	\$80,000	\$114,000	\$1,082,000	\$527,000	\$229,000	\$2,032,000
Year 7	2029	\$86,000	\$117,000	\$1,161,000	\$565,000	\$246,000	\$2,176,000
Year 8	2030	\$92,000	\$119,000	\$1,243,000	\$605,000	\$264,000	\$2,323,000
Year 9	2031	\$99,000	\$122,000	\$1,326,000	\$646,000	\$281,000	\$2,474,000
Year 10	2032	\$105,000	\$125,000	\$1,412,000	\$687,000	\$299,000	\$2,628,000
Year 11	2033	\$112,000	\$127,000	\$1,499,000	\$730,000	\$318,000	\$2,786,000
Year 12	2034	\$118,000	\$130,000	\$1,589,000	\$773,000	\$337,000	\$2,947,000
Year 13	2035	\$125,000	\$133,000	\$1,680,000	\$818,000	\$356,000	\$3,112,000
Year 14	2036	\$132,000	\$135,000	\$1,774,000	\$863,000	\$376,000	\$3,280,000
Year 15	2037	\$139,000	\$138,000	\$1,869,000	\$910,000	\$396,000	\$3,452,000
Year 16	2038	\$146,000	\$140,000	\$1,970,000	\$957,000	\$417,000	\$3,627,000
Year 17	2039	\$154,000	\$142,000	\$2,066,000	\$1,006,000	\$438,000	\$3,806,000
Year 18	2040	\$161,000	\$145,000	\$2,168,000	\$1,055,000	\$460,000	\$3,989,000
Year 19	2041	\$169,000	\$147,000	\$2,271,000	\$1,105,000	\$482,000	\$4,174,000
Year 20	2042	\$177,000	\$149,000	\$2,377,000	\$1,157,000	\$504,000	\$4,364,000
	AVERAGE	\$82,000	\$93,000	\$1,103,000	\$537,000	\$234,000	\$2,048,000
	TOTAL	\$2,214,000	\$2,508,000	\$29,775,000	\$14,491,000	\$6,312,000	\$55,299,000

Table 20: Costs and Benefits (discounted 3%,by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$215,000	-\$215,000	-\$215,000
Year -3	2019	\$0	\$278,000	-\$278,000	-\$493,000
Year -2	2020	\$0	\$540,000	-\$540,000	-\$1,034,000
Year -1	2021	\$0	\$197,000	-\$197,000	-\$1,230,000
Year 0	2022	\$0	\$127,000	-\$127,000	-\$1,358,000
Year 1	2023	\$1,111,000	\$124,000	\$988,000	-\$370,000
Year 2	2024	\$1,178,000	\$120,000	\$1,058,000	\$688,000
Year 3	2025	\$1,243,000	\$117,000	\$1,127,000	\$1,815,000
Year 4	2026	\$1,306,000	\$113,000	\$1,193,000	\$3,008,000
Year 5	2027	\$1,367,000	\$110,000	\$1,257,000	\$4,265,000
Year 6	2028	\$1,425,000	\$107,000	\$1,319,000	\$5,584,000
Year 7	2029	\$1,482,000	\$104,000	\$1,378,000	\$6,962,000
Year 8	2030	\$1,536,000	\$101,000	\$1,435,000	\$8,397,000
Year 9	2031	\$1,588,000	\$98,000	\$1,490,000	\$9,887,000
Year 10	2032	\$1,638,000	\$95,000	\$1,543,000	\$11,430,000
Year 11	2033	\$1,685,000	\$92,000	\$1,593,000	\$13,023,000
Year 12	2034	\$1,731,000	\$89,000	\$1,642,000	\$14,665,000
Year 13	2035	\$1,775,000	\$87,000	\$1,688,000	\$16,353,000
Year 14	2036	\$1,816,000	\$84,000	\$1,732,000	\$18,085,000
Year 15	2037	\$1,856,000	\$82,000	\$1,774,000	\$19,858,000
Year 16	2038	\$1,893,000	\$79,000	\$1,814,000	\$21,672,000
Year 17	2039	\$1,929,000	\$77,000	\$1,851,000	\$23,524,000
Year 18	2040	\$1,962,000	\$75,000	\$1,887,000	\$25,411,000
Year 19	2041	\$1,994,000	\$73,000	\$1,921,000	\$27,332,000
Year 20	2042	\$2,024,000	\$71,000	\$1,953,000	\$29,285,000
INTERNAL RATE OF RETURN					38.70%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$29,290,000
BENEFIT - COST RATIO					10

Table 21: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$199,000	-\$199,000	-\$199,000
Year -3	2019	\$0	\$248,000	-\$248,000	-\$447,000
Year -2	2020	\$0	\$464,000	-\$464,000	-\$911,000
Year -1	2021	\$0	\$163,000	-\$163,000	-\$1,074,000
Year 0	2022	\$0	\$101,000	-\$101,000	-\$1,175,000
Year 1	2023	\$851,000	\$95,000	\$756,000	-\$419,000
Year 2	2024	\$869,000	\$88,000	\$780,000	\$361,000
Year 3	2025	\$882,000	\$83,000	\$800,000	\$1,161,000
Year 4	2026	\$892,000	\$77,000	\$815,000	\$1,976,000
Year 5	2027	\$899,000	\$72,000	\$827,000	\$2,803,000
Year 6	2028	\$902,000	\$68,000	\$835,000	\$3,637,000
Year 7	2029	\$903,000	\$63,000	\$840,000	\$4,477,000
Year 8	2030	\$901,000	\$59,000	\$842,000	\$5,319,000
Year 9	2031	\$897,000	\$55,000	\$841,000	\$6,161,000
Year 10	2032	\$890,000	\$52,000	\$839,000	\$6,999,000
Year 11	2033	\$882,000	\$48,000	\$834,000	\$7,833,000
Year 12	2034	\$872,000	\$45,000	\$827,000	\$8,660,000
Year 13	2035	\$860,000	\$42,000	\$818,000	\$9,478,000
Year 14	2036	\$848,000	\$39,000	\$808,000	\$10,287,000
Year 15	2037	\$834,000	\$37,000	\$797,000	\$11,084,000
Year 16	2038	\$819,000	\$34,000	\$784,000	\$11,868,000
Year 17	2039	\$803,000	\$32,000	\$771,000	\$12,639,000
Year 18	2040	\$786,000	\$30,000	\$756,000	\$13,395,000
Year 19	2041	\$769,000	\$28,000	\$741,000	\$14,136,000
Year 20	2042	\$751,000	\$26,000	\$725,000	\$14,861,000
INTERNAL RATE OF RETURN					33.51%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$14,860,000
BENEFIT - COST RATIO					8

Appendix D: Big Bear Lake

Table 22: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$805,324	\$0	\$0	\$805,324
Year -4	2019	\$1,342,207	\$0	\$0	\$1,342,207
Year -3	2020	\$1,073,766	\$0	\$0	\$1,073,766
Year -2	2021	\$805,324	\$0	\$0	\$805,324
Year -1	2022	\$805,324	\$0	\$0	\$805,324
Year 0	2023	\$536,883	\$0	\$0	\$536,883
Year 1	2024	\$0	\$536,883	\$0	\$536,883
Year 2	2025	\$0	\$536,883	\$0	\$536,883
Year 3	2026	\$0	\$536,883	\$0	\$536,883
Year 4	2027	\$0	\$536,883	\$0	\$536,883
Year 5	2028	\$0	\$536,883	\$0	\$536,883
Year 6	2029	\$0	\$536,883	\$0	\$536,883
Year 7	2030	\$0	\$536,883	\$0	\$536,883
Year 8	2031	\$0	\$536,883	\$0	\$536,883
Year 9	2032	\$0	\$536,883	\$0	\$536,883
Year 10	2033	\$0	\$536,883	\$0	\$536,883
Year 11	2034	\$0	\$536,883	\$0	\$536,883
Year 12	2035	\$0	\$536,883	\$0	\$536,883
Year 13	2036	\$0	\$536,883	\$0	\$536,883
Year 14	2037	\$0	\$536,883	\$0	\$536,883
Year 15	2038	\$0	\$536,883	\$0	\$536,883
Year 16	2039	\$0	\$536,883	\$0	\$536,883
Year 17	2040	\$0	\$536,883	\$0	\$536,883
Year 18	2041	\$0	\$536,883	\$0	\$536,883
Year 19	2042	\$0	\$536,883	\$0	\$536,883
Year 20	2043	\$0	\$536,883	\$0	\$536,883
	AVERAGE	\$192,000	\$383,000	\$0	\$575,000
	TOTAL	\$5,368,828	\$10,737,659	\$0	\$16,106,487

Table 23: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	733,000	444,000	301,000
Year -6	2017	751,000	454,000	309,000
Year -5	2018	769,000	465,000	316,000
Year -4	2019	786,000	476,000	323,000
Year -3	2020	804,000	487,000	330,000
Year -2	2021	822,000	497,000	337,000
Year -1	2022	839,000	508,000	345,000
Year 0	2023	857,000	519,000	352,000
Year 1	2024	903,000	547,000	371,000
Year 2	2025	951,000	575,000	391,000
Year 3	2026	1,000,000	605,000	411,000
Year 4	2027	1,050,000	635,000	432,000
Year 5	2028	1,101,000	666,000	453,000
Year 6	2029	1,153,000	697,000	474,000
Year 7	2030	1,207,000	729,000	496,000
Year 8	2031	1,261,000	762,000	519,000
Year 9	2032	1,317,000	796,000	542,000
Year 10	2033	1,374,000	830,000	565,000
Year 11	2034	1,432,000	865,000	589,000
Year 12	2035	1,491,000	900,000	614,000
Year 13	2036	1,551,000	936,000	639,000
Year 14	2037	1,612,000	973,000	664,000
Year 15	2038	1,674,000	1,011,000	690,000
Year 16	2039	1,738,000	1,049,000	716,000
Year 17	2040	1,803,000	1,088,000	743,000
Year 18	2041	1,869,000	1,128,000	770,000
Year 19	2042	1,935,000	1,168,000	798,000
Year 20	2043	2,004,000	1,209,000	826,000
	AVERAGE	1,242,000	751,000	511,000
	TOTAL	34,787,000	21,019,000	14,316,000

Table 24: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$19,000	\$0	\$253,000	\$123,000	\$54,000	\$449,000
Year 2	2025	\$20,000	\$0	\$267,000	\$130,000	\$57,000	\$473,000
Year 3	2026	\$21,000	\$0	\$280,000	\$136,000	\$59,000	\$497,000
Year 4	2027	\$22,000	\$0	\$294,000	\$143,000	\$62,000	\$522,000
Year 5	2028	\$23,000	\$0	\$309,000	\$150,000	\$65,000	\$547,000
Year 6	2029	\$24,000	\$0	\$323,000	\$157,000	\$69,000	\$574,000
Year 7	2030	\$25,000	\$0	\$339,000	\$165,000	\$72,000	\$600,000
Year 8	2031	\$26,000	\$0	\$354,000	\$172,000	\$75,000	\$628,000
Year 9	2032	\$27,000	\$0	\$370,000	\$180,000	\$78,000	\$655,000
Year 10	2033	\$29,000	\$0	\$386,000	\$188,000	\$82,000	\$684,000
Year 11	2034	\$30,000	\$0	\$402,000	\$196,000	\$85,000	\$713,000
Year 12	2035	\$31,000	\$0	\$419,000	\$204,000	\$89,000	\$742,000
Year 13	2036	\$32,000	\$0	\$436,000	\$212,000	\$92,000	\$772,000
Year 14	2037	\$34,000	\$0	\$453,000	\$220,000	\$96,000	\$803,000
Year 15	2038	\$35,000	\$0	\$470,000	\$229,000	\$100,000	\$834,000
Year 16	2039	\$36,000	\$0	\$488,000	\$238,000	\$104,000	\$866,000
Year 17	2040	\$38,000	\$0	\$507,000	\$247,000	\$107,000	\$898,000
Year 18	2041	\$39,000	\$0	\$525,000	\$256,000	\$111,000	\$931,000
Year 19	2042	\$40,000	\$0	\$544,000	\$265,000	\$115,000	\$965,000
Year 20	2043	\$42,000	\$0	\$563,000	\$274,000	\$119,000	\$999,000
AVERAGE		\$21,000	\$0	\$285,000	\$139,000	\$60,000	\$505,000
TOTAL		\$593,000	\$0	\$7,982,000	\$3,885,000	\$1,691,000	\$14,152,000

Table 25: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$759,000	-\$759,000	-\$759,000
Year -4	2019	\$0	\$1,228,000	-\$1,228,000	-\$1,987,000
Year -3	2020	\$0	\$954,000	-\$954,000	-\$2,941,000
Year -2	2021	\$0	\$695,000	-\$695,000	-\$3,636,000
Year -1	2022	\$0	\$674,000	-\$674,000	-\$4,311,000
Year 0	2023	\$0	\$437,000	-\$437,000	-\$4,747,000
Year 1	2024	\$354,000	\$424,000	-\$70,000	-\$4,817,000
Year 2	2025	\$362,000	\$411,000	-\$49,000	-\$4,866,000
Year 3	2026	\$370,000	\$399,000	-\$30,000	-\$4,896,000
Year 4	2027	\$377,000	\$388,000	-\$11,000	-\$4,906,000
Year 5	2028	\$384,000	\$377,000	\$7,000	-\$4,899,000
Year 6	2029	\$391,000	\$366,000	\$25,000	-\$4,874,000
Year 7	2030	\$397,000	\$355,000	\$42,000	-\$4,832,000
Year 8	2031	\$403,000	\$345,000	\$58,000	-\$4,774,000
Year 9	2032	\$408,000	\$335,000	\$74,000	-\$4,700,000
Year 10	2033	\$414,000	\$325,000	\$89,000	-\$4,611,000
Year 11	2034	\$419,000	\$315,000	\$103,000	-\$4,508,000
Year 12	2035	\$423,000	\$306,000	\$117,000	-\$4,391,000
Year 13	2036	\$428,000	\$297,000	\$130,000	-\$4,261,000
Year 14	2037	\$432,000	\$289,000	\$143,000	-\$4,118,000
Year 15	2038	\$435,000	\$280,000	\$155,000	-\$3,962,000
Year 16	2039	\$439,000	\$272,000	\$167,000	-\$3,796,000
Year 17	2040	\$442,000	\$264,000	\$178,000	-\$3,618,000
Year 18	2041	\$445,000	\$256,000	\$188,000	-\$3,429,000
Year 19	2042	\$447,000	\$249,000	\$198,000	-\$3,231,000
Year 20	2043	\$450,000	\$242,000	\$208,000	-\$3,023,000
				INTERNAL RATE OF RETURN	-5.20%
				NET PRESENT VALUE (3% DISCOUNT RATE)	-\$3,020,000
				BENEFIT - COST RATIO	0.73

Table 26: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$703,000	-\$703,000	-\$703,000
Year -4	2019	\$0	\$1,096,000	-\$1,096,000	-\$1,799,000
Year -3	2020	\$0	\$819,000	-\$819,000	-\$2,618,000
Year -2	2021	\$0	\$574,000	-\$574,000	-\$3,192,000
Year -1	2022	\$0	\$537,000	-\$537,000	-\$3,729,000
Year 0	2023	\$0	\$334,000	-\$334,000	-\$4,063,000
Year 1	2024	\$261,000	\$312,000	-\$51,000	-\$4,115,000
Year 2	2025	\$257,000	\$292,000	-\$35,000	-\$4,150,000
Year 3	2026	\$253,000	\$273,000	-\$20,000	-\$4,170,000
Year 4	2027	\$248,000	\$255,000	-\$7,000	-\$4,177,000
Year 5	2028	\$243,000	\$238,000	\$5,000	-\$4,172,000
Year 6	2029	\$238,000	\$223,000	\$15,000	-\$4,157,000
Year 7	2030	\$233,000	\$208,000	\$25,000	-\$4,132,000
Year 8	2031	\$227,000	\$195,000	\$33,000	-\$4,100,000
Year 9	2032	\$222,000	\$182,000	\$40,000	-\$4,059,000
Year 10	2033	\$216,000	\$170,000	\$46,000	-\$4,013,000
Year 11	2034	\$211,000	\$159,000	\$52,000	-\$3,961,000
Year 12	2035	\$205,000	\$148,000	\$57,000	-\$3,904,000
Year 13	2036	\$200,000	\$139,000	\$61,000	-\$3,843,000
Year 14	2037	\$194,000	\$130,000	\$64,000	-\$3,779,000
Year 15	2038	\$188,000	\$121,000	\$67,000	-\$3,712,000
Year 16	2039	\$183,000	\$113,000	\$69,000	-\$3,643,000
Year 17	2040	\$177,000	\$106,000	\$71,000	-\$3,571,000
Year 18	2041	\$172,000	\$99,000	\$73,000	-\$3,499,000
Year 19	2042	\$166,000	\$92,000	\$74,000	-\$3,425,000
				INTERNAL RATE OF RETURN	-8.75%
				NET PRESENT VALUE (7% DISCOUNT RATE)	-\$3,350,000
				BENEFIT - COST RATIO	0.56

Appendix E: Chino

Table 27: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$189,329	\$0	\$0	\$189,329
Year -3	2019	\$252,439	\$0	\$0	\$252,439
Year -2	2020	\$504,877	\$0	\$0	\$504,877
Year -1	2021	\$189,329	\$0	\$0	\$189,329
Year 0	2022	\$126,219	\$0	\$0	\$126,219
Year 1	2023	\$0	\$126,219	\$0	\$126,219
Year 2	2024	\$0	\$126,219	\$0	\$126,219
Year 3	2025	\$0	\$126,219	\$0	\$126,219
Year 4	2026	\$0	\$126,219	\$0	\$126,219
Year 5	2027	\$0	\$126,219	\$0	\$126,219
Year 6	2028	\$0	\$126,219	\$0	\$126,219
Year 7	2029	\$0	\$126,219	\$0	\$126,219
Year 8	2030	\$0	\$126,219	\$0	\$126,219
Year 9	2031	\$0	\$126,219	\$0	\$126,219
Year 10	2032	\$0	\$126,219	\$0	\$126,219
Year 11	2033	\$0	\$126,219	\$0	\$126,219
Year 12	2034	\$0	\$126,219	\$0	\$126,219
Year 13	2035	\$0	\$126,219	\$0	\$126,219
Year 14	2036	\$0	\$126,219	\$0	\$126,219
Year 15	2037	\$0	\$126,219	\$0	\$126,219
Year 16	2038	\$0	\$126,219	\$0	\$126,219
Year 17	2039	\$0	\$126,219	\$0	\$126,219
Year 18	2040	\$0	\$126,219	\$0	\$126,219
Year 19	2041	\$0	\$126,219	\$0	\$126,219
Year 20	2042	\$0	\$126,219	\$0	\$126,219
	AVERAGE	\$47,000	\$93,000	\$0	\$140,000
	TOTAL	\$1,262,193	\$2,524,385	\$0	\$3,786,578

Table 28: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	3,245,000	1,900,000	1,743,000
Year -5	2017	3,359,000	1,966,000	1,803,000
Year -4	2018	3,472,000	2,031,000	1,863,000
Year -3	2019	3,585,000	2,097,000	1,923,000
Year -2	2020	3,699,000	2,163,000	1,983,000
Year -1	2021	3,812,000	2,229,000	2,043,000
Year 0	2022	3,925,000	2,294,000	2,103,000
Year 1	2023	5,094,000	3,020,000	2,586,000
Year 2	2024	6,318,000	3,780,000	3,091,000
Year 3	2025	7,599,000	4,575,000	3,619,000
Year 4	2026	8,936,000	5,405,000	4,169,000
Year 5	2027	10,328,000	6,271,000	4,741,000
Year 6	2028	11,777,000	7,171,000	5,336,000
Year 7	2029	13,282,000	8,107,000	5,954,000
Year 8	2030	14,842,000	9,078,000	6,594,000
Year 9	2031	16,459,000	10,084,000	7,256,000
Year 10	2032	18,132,000	11,124,000	7,941,000
Year 11	2033	19,861,000	12,200,000	8,649,000
Year 12	2034	21,646,000	13,311,000	9,378,000
Year 13	2035	23,486,000	14,458,000	10,131,000
Year 14	2036	25,383,000	15,639,000	10,905,000
Year 15	2037	27,336,000	16,855,000	11,703,000
Year 16	2038	29,345,000	18,106,000	12,522,000
Year 17	2039	31,410,000	19,393,000	13,364,000
Year 18	2040	33,531,000	20,715,000	14,229,000
Year 19	2041	35,708,000	22,071,000	15,116,000
Year 20	2042	37,942,000	23,463,000	16,025,000
	AVERAGE	15,686,000	9,611,000	6,917,000
	TOTAL	423,512,000	259,506,000	186,770,000

Table 29: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$131,000	\$335,000	\$1,763,000	\$858,000	\$374,000	\$3,463,000
Year 2	2024	\$157,000	\$328,000	\$2,108,000	\$1,026,000	\$447,000	\$4,066,000
Year 3	2025	\$184,000	\$318,000	\$2,468,000	\$1,201,000	\$524,000	\$4,695,000
Year 4	2026	\$211,000	\$308,000	\$2,843,000	\$1,384,000	\$603,000	\$5,350,000
Year 5	2027	\$241,000	\$297,000	\$3,234,000	\$1,574,000	\$686,000	\$6,031,000
Year 6	2028	\$271,000	\$285,000	\$3,640,000	\$1,772,000	\$772,000	\$6,739,000
Year 7	2029	\$302,000	\$272,000	\$4,061,000	\$1,977,000	\$861,000	\$7,472,000
Year 8	2030	\$335,000	\$257,000	\$4,497,000	\$2,189,000	\$954,000	\$8,232,000
Year 9	2031	\$368,000	\$242,000	\$4,949,000	\$2,409,000	\$1,050,000	\$9,018,000
Year 10	2032	\$403,000	\$225,000	\$5,416,000	\$2,636,000	\$1,149,000	\$9,830,000
Year 11	2033	\$439,000	\$207,000	\$5,899,000	\$2,871,000	\$1,251,000	\$10,667,000
Year 12	2034	\$476,000	\$189,000	\$6,396,000	\$3,114,000	\$1,357,000	\$11,531,000
Year 13	2035	\$514,000	\$169,000	\$6,910,000	\$3,363,000	\$1,466,000	\$12,421,000
Year 14	2036	\$553,000	\$148,000	\$7,438,000	\$3,620,000	\$1,578,000	\$13,337,000
Year 15	2037	\$594,000	\$126,000	\$7,982,000	\$3,885,000	\$1,693,000	\$14,280,000
Year 16	2038	\$635,000	\$103,000	\$8,540,000	\$4,157,000	\$1,812,000	\$15,248,000
Year 17	2039	\$678,000	\$79,000	\$9,115,000	\$4,437,000	\$1,934,000	\$16,242,000
Year 18	2040	\$722,000	\$54,000	\$9,705,000	\$4,724,000	\$2,059,000	\$17,263,000
Year 19	2041	\$767,000	\$27,000	\$10,310,000	\$5,018,000	\$2,187,000	\$18,309,000
Year 20	2042	\$813,000	\$0	\$10,930,000	\$5,320,000	\$2,319,000	\$19,382,000
	AVERAGE	\$326,000	\$147,000	\$4,378,000	\$2,131,000	\$929,000	\$7,910,000
	TOTAL	\$8,794,000	\$3,969,000	\$118,204,000	\$57,535,000	\$25,076,000	\$213,576,000

Table 30: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$178,000	-\$178,000	-\$178,000
Year -3	2019	\$0	\$231,000	-\$231,000	-\$409,000
Year -2	2020	\$0	\$449,000	-\$449,000	-\$858,000
Year -1	2021	\$0	\$163,000	-\$163,000	-\$1,021,000
Year 0	2022	\$0	\$106,000	-\$106,000	-\$1,127,000
Year 1	2023	\$2,815,000	\$103,000	\$2,713,000	\$1,586,000
Year 2	2024	\$3,209,000	\$100,000	\$3,110,000	\$4,696,000
Year 3	2025	\$3,598,000	\$97,000	\$3,501,000	\$8,197,000
Year 4	2026	\$3,981,000	\$94,000	\$3,887,000	\$12,084,000
Year 5	2027	\$4,357,000	\$91,000	\$4,266,000	\$16,350,000
Year 6	2028	\$4,727,000	\$89,000	\$4,638,000	\$20,988,000
Year 7	2029	\$5,088,000	\$86,000	\$5,002,000	\$25,991,000
Year 8	2030	\$5,442,000	\$83,000	\$5,359,000	\$31,349,000
Year 9	2031	\$5,788,000	\$81,000	\$5,707,000	\$37,057,000
Year 10	2032	\$6,125,000	\$79,000	\$6,047,000	\$43,103,000
Year 11	2033	\$6,454,000	\$76,000	\$6,378,000	\$49,481,000
Year 12	2034	\$6,773,000	\$74,000	\$6,699,000	\$56,180,000
Year 13	2035	\$7,084,000	\$72,000	\$7,012,000	\$63,192,000
Year 14	2036	\$7,385,000	\$70,000	\$7,315,000	\$70,507,000
Year 15	2037	\$7,676,000	\$68,000	\$7,608,000	\$78,115,000
Year 16	2038	\$7,958,000	\$66,000	\$7,892,000	\$86,007,000
Year 17	2039	\$8,230,000	\$64,000	\$8,166,000	\$94,173,000
Year 18	2040	\$8,492,000	\$62,000	\$8,430,000	\$102,603,000
Year 19	2041	\$8,745,000	\$60,000	\$8,684,000	\$111,287,000
Year 20	2042	\$8,987,000	\$59,000	\$8,929,000	\$120,216,000
				INTERNAL RATE OF RETURN	72.45%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$120,220,000
				BENEFIT - COST RATIO	45.5

Table 31: Costs and Benefits (discounted 7%, by responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$165,000	-\$165,000	-\$165,000
Year -3	2019	\$0	\$206,000	-\$206,000	-\$371,000
Year -2	2020	\$0	\$385,000	-\$385,000	-\$757,000
Year -1	2021	\$0	\$135,000	-\$135,000	-\$892,000
Year 0	2022	\$0	\$84,000	-\$84,000	-\$976,000
Year 1	2023	\$2,156,000	\$79,000	\$2,078,000	\$1,102,000
Year 2	2024	\$2,366,000	\$73,000	\$2,293,000	\$3,395,000
Year 3	2025	\$2,554,000	\$69,000	\$2,485,000	\$5,880,000
Year 4	2026	\$2,720,000	\$64,000	\$2,656,000	\$8,535,000
Year 5	2027	\$2,866,000	\$60,000	\$2,806,000	\$11,341,000
Year 6	2028	\$2,992,000	\$56,000	\$2,936,000	\$14,277,000
Year 7	2029	\$3,101,000	\$52,000	\$3,048,000	\$17,325,000
Year 8	2030	\$3,193,000	\$49,000	\$3,144,000	\$20,469,000
Year 9	2031	\$3,268,000	\$46,000	\$3,223,000	\$23,692,000
Year 10	2032	\$3,330,000	\$43,000	\$3,287,000	\$26,979,000
Year 11	2033	\$3,377,000	\$40,000	\$3,337,000	\$30,316,000
Year 12	2034	\$3,412,000	\$37,000	\$3,374,000	\$33,690,000
Year 13	2035	\$3,435,000	\$35,000	\$3,400,000	\$37,090,000
Year 14	2036	\$3,447,000	\$33,000	\$3,414,000	\$40,504,000
Year 15	2037	\$3,449,000	\$30,000	\$3,418,000	\$43,922,000
Year 16	2038	\$3,442,000	\$28,000	\$3,413,000	\$47,335,000
Year 17	2039	\$3,426,000	\$27,000	\$3,400,000	\$50,735,000
Year 18	2040	\$3,403,000	\$25,000	\$3,378,000	\$54,113,000
Year 19	2041	\$3,373,000	\$23,000	\$3,350,000	\$57,463,000
Year 20	2042	\$3,337,000	\$22,000	\$3,316,000	\$60,779,000
INTERNAL RATE OF RETURN					66.00%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$60,780,000
BENEFIT - COST RATIO					33.6

Appendix F: Chino Hills

Table 32: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$217,001	\$0	\$0	\$217,001
Year -3	2019	\$289,335	\$0	\$0	\$289,335
Year -2	2020	\$578,670	\$0	\$0	\$578,670
Year -1	2021	\$217,001	\$0	\$0	\$217,001
Year 0	2022	\$144,667	\$0	\$0	\$144,667
Year 1	2023	\$0	\$144,667	\$0	\$144,667
Year 2	2024	\$0	\$144,667	\$0	\$144,667
Year 3	2025	\$0	\$144,667	\$0	\$144,667
Year 4	2026	\$0	\$144,667	\$0	\$144,667
Year 5	2027	\$0	\$144,667	\$0	\$144,667
Year 6	2028	\$0	\$144,667	\$0	\$144,667
Year 7	2029	\$0	\$144,667	\$0	\$144,667
Year 8	2030	\$0	\$144,667	\$0	\$144,667
Year 9	2031	\$0	\$144,667	\$0	\$144,667
Year 10	2032	\$0	\$144,667	\$0	\$144,667
Year 11	2033	\$0	\$144,667	\$0	\$144,667
Year 12	2034	\$0	\$144,667	\$0	\$144,667
Year 13	2035	\$0	\$144,667	\$0	\$144,667
Year 14	2036	\$0	\$144,667	\$0	\$144,667
Year 15	2037	\$0	\$144,667	\$0	\$144,667
Year 16	2038	\$0	\$144,667	\$0	\$144,667
Year 17	2039	\$0	\$144,667	\$0	\$144,667
Year 18	2040	\$0	\$144,667	\$0	\$144,667
Year 19	2041	\$0	\$144,667	\$0	\$144,667
Year 20	2042	\$0	\$144,667	\$0	\$144,667
	AVERAGE	\$54,000	\$107,000	\$0	\$161,000
	TOTAL	\$1,446,674	\$2,893,340	\$0	\$4,340,014

Table 33: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	1,626,000	946,000	966,000
Year -5	2017	1,615,000	939,000	959,000
Year -4	2018	1,604,000	932,000	952,000
Year -3	2019	1,593,000	926,000	945,000
Year -2	2020	1,583,000	919,000	938,000
Year -1	2021	1,572,000	912,000	931,000
Year 0	2022	1,561,000	906,000	924,000
Year 1	2023	2,525,000	1,508,000	1,317,000
Year 2	2024	3,470,000	2,098,000	1,703,000
Year 3	2025	4,397,000	2,676,000	2,081,000
Year 4	2026	5,304,000	3,243,000	2,451,000
Year 5	2027	6,192,000	3,798,000	2,813,000
Year 6	2028	7,062,000	4,341,000	3,168,000
Year 7	2029	7,912,000	4,872,000	3,515,000
Year 8	2030	8,744,000	5,392,000	3,854,000
Year 9	2031	9,557,000	5,899,000	4,185,000
Year 10	2032	10,351,000	6,396,000	4,509,000
Year 11	2033	11,126,000	6,880,000	4,825,000
Year 12	2034	11,882,000	7,353,000	5,133,000
Year 13	2035	12,619,000	7,813,000	5,433,000
Year 14	2036	13,337,000	8,263,000	5,725,000
Year 15	2037	14,036,000	8,700,000	6,010,000
Year 16	2038	14,717,000	9,126,000	6,287,000
Year 17	2039	15,378,000	9,539,000	6,556,000
Year 18	2040	16,021,000	9,942,000	6,817,000
Year 19	2041	16,644,000	10,332,000	7,071,000
Year 20	2042	17,249,000	10,711,000	7,316,000
	AVERAGE	8,136,000	5,013,000	3,607,000
	TOTAL	219,677,000	135,362,000	97,384,000

Table 34: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$67,000	\$169,000	\$898,000	\$437,000	\$191,000	\$1,762,000
Year 2	2024	\$86,000	\$160,000	\$1,161,000	\$565,000	\$246,000	\$2,219,000
Year 3	2025	\$106,000	\$150,000	\$1,419,000	\$691,000	\$301,000	\$2,667,000
Year 4	2026	\$124,000	\$141,000	\$1,672,000	\$814,000	\$355,000	\$3,105,000
Year 5	2027	\$143,000	\$132,000	\$1,919,000	\$934,000	\$407,000	\$3,534,000
Year 6	2028	\$161,000	\$123,000	\$2,161,000	\$1,052,000	\$458,000	\$3,954,000
Year 7	2029	\$178,000	\$114,000	\$2,397,000	\$1,167,000	\$509,000	\$4,365,000
Year 8	2030	\$196,000	\$105,000	\$2,629,000	\$1,279,000	\$558,000	\$4,766,000
Year 9	2031	\$212,000	\$96,000	\$2,855,000	\$1,389,000	\$606,000	\$5,157,000
Year 10	2032	\$229,000	\$87,000	\$3,075,000	\$1,497,000	\$652,000	\$5,540,000
Year 11	2033	\$245,000	\$78,000	\$3,291,000	\$1,602,000	\$698,000	\$5,913,000
Year 12	2034	\$260,000	\$69,000	\$3,501,000	\$1,704,000	\$743,000	\$6,276,000
Year 13	2035	\$276,000	\$60,000	\$3,705,000	\$1,804,000	\$786,000	\$6,631,000
Year 14	2036	\$290,000	\$51,000	\$3,905,000	\$1,901,000	\$828,000	\$6,976,000
Year 15	2037	\$305,000	\$43,000	\$4,099,000	\$1,995,000	\$869,000	\$7,311,000
Year 16	2038	\$319,000	\$34,000	\$4,290,000	\$2,087,000	\$910,000	\$7,637,000
Year 17	2039	\$333,000	\$25,000	\$4,471,000	\$2,176,000	\$948,000	\$7,954,000
Year 18	2040	\$346,000	\$17,000	\$4,650,000	\$2,263,000	\$986,000	\$8,262,000
Year 19	2041	\$359,000	\$8,000	\$4,822,000	\$2,347,000	\$1,023,000	\$8,560,000
Year 20	2042	\$371,000	\$0	\$4,990,000	\$2,429,000	\$1,058,000	\$8,849,000
	AVERAGE	\$171,000	\$62,000	\$2,293,000	\$1,116,000	\$486,000	\$4,127,000
	TOTAL	\$4,606,000	\$1,662,000	\$61,910,000	\$30,133,000	\$13,132,000	\$111,438,000

Table 35: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$205,000	-\$205,000	-\$205,000
Year -3	2019	\$0	\$265,000	-\$265,000	-\$469,000
Year -2	2020	\$0	\$514,000	-\$514,000	-\$983,000
Year -1	2021	\$0	\$187,000	-\$187,000	-\$1,171,000
Year 0	2022	\$0	\$121,000	-\$121,000	-\$1,292,000
Year 1	2023	\$1,433,000	\$118,000	\$1,315,000	\$23,000
Year 2	2024	\$1,752,000	\$114,000	\$1,638,000	\$1,661,000
Year 3	2025	\$2,044,000	\$111,000	\$1,933,000	\$3,594,000
Year 4	2026	\$2,311,000	\$108,000	\$2,203,000	\$5,797,000
Year 5	2027	\$2,553,000	\$105,000	\$2,449,000	\$8,246,000
Year 6	2028	\$2,773,000	\$101,000	\$2,672,000	\$10,918,000
Year 7	2029	\$2,972,000	\$99,000	\$2,874,000	\$13,791,000
Year 8	2030	\$3,151,000	\$96,000	\$3,055,000	\$16,846,000
Year 9	2031	\$3,310,000	\$93,000	\$3,217,000	\$20,064,000
Year 10	2032	\$3,452,000	\$90,000	\$3,362,000	\$23,426,000
Year 11	2033	\$3,577,000	\$88,000	\$3,490,000	\$26,916,000
Year 12	2034	\$3,687,000	\$85,000	\$3,602,000	\$30,517,000
Year 13	2035	\$3,781,000	\$83,000	\$3,699,000	\$34,216,000
Year 14	2036	\$3,862,000	\$80,000	\$3,782,000	\$37,998,000
Year 15	2037	\$3,930,000	\$78,000	\$3,852,000	\$41,851,000
Year 16	2038	\$3,986,000	\$76,000	\$3,910,000	\$45,761,000
Year 17	2039	\$4,030,000	\$73,000	\$3,957,000	\$49,718,000
Year 18	2040	\$4,064,000	\$71,000	\$3,993,000	\$53,711,000
Year 19	2041	\$4,088,000	\$69,000	\$4,019,000	\$57,730,000
Year 20	2042	\$4,103,000	\$67,000	\$4,036,000	\$61,766,000
INTERNAL RATE OF RETURN					51.54%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$61,770,000
BENEFIT - COST RATIO					21.0

Table 36: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$190,000	-\$190,000	-\$190,000
Year -3	2019	\$0	\$236,000	-\$236,000	-\$426,000
Year -2	2020	\$0	\$441,000	-\$441,000	-\$867,000
Year -1	2021	\$0	\$155,000	-\$155,000	-\$1,022,000
Year 0	2022	\$0	\$96,000	-\$96,000	-\$1,118,000
Year 1	2023	\$1,097,000	\$90,000	\$1,007,000	-\$111,000
Year 2	2024	\$1,292,000	\$84,000	\$1,207,000	\$1,096,000
Year 3	2025	\$1,451,000	\$79,000	\$1,372,000	\$2,468,000
Year 4	2026	\$1,579,000	\$74,000	\$1,505,000	\$3,973,000
Year 5	2027	\$1,679,000	\$69,000	\$1,610,000	\$5,584,000
Year 6	2028	\$1,756,000	\$64,000	\$1,691,000	\$7,275,000
Year 7	2029	\$1,811,000	\$60,000	\$1,751,000	\$9,026,000
Year 8	2030	\$1,848,000	\$56,000	\$1,792,000	\$10,819,000
Year 9	2031	\$1,869,000	\$52,000	\$1,817,000	\$12,635,000
Year 10	2032	\$1,876,000	\$49,000	\$1,827,000	\$14,463,000
Year 11	2033	\$1,872,000	\$46,000	\$1,826,000	\$16,289,000
Year 12	2034	\$1,857,000	\$43,000	\$1,814,000	\$18,103,000
Year 13	2035	\$1,833,000	\$40,000	\$1,793,000	\$19,896,000
Year 14	2036	\$1,803,000	\$37,000	\$1,765,000	\$21,662,000
Year 15	2037	\$1,766,000	\$35,000	\$1,731,000	\$23,392,000
Year 16	2038	\$1,724,000	\$33,000	\$1,691,000	\$25,084,000
Year 17	2039	\$1,678,000	\$31,000	\$1,647,000	\$26,731,000
Year 18	2040	\$1,629,000	\$29,000	\$1,600,000	\$28,331,000
Year 19	2041	\$1,577,000	\$27,000	\$1,550,000	\$29,882,000
Year 20	2042	\$1,524,000	\$25,000	\$1,499,000	\$31,381,000
				INTERNAL RATE OF RETURN	45.88%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$31,380,000
				BENEFIT - COST RATIO	15.7

Appendix G: Colton

Table 37: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$230,325	\$0	\$0	\$230,325
Year -3	2019	\$307,100	\$0	\$0	\$307,100
Year -2	2020	\$614,201	\$0	\$0	\$614,201
Year -1	2021	\$230,325	\$0	\$0	\$230,325
Year 0	2022	\$153,550	\$0	\$0	\$153,550
Year 1	2023	\$0	\$153,550	\$0	\$153,550
Year 2	2024	\$0	\$153,550	\$0	\$153,550
Year 3	2025	\$0	\$153,550	\$0	\$153,550
Year 4	2026	\$0	\$153,550	\$0	\$153,550
Year 5	2027	\$0	\$153,550	\$0	\$153,550
Year 6	2028	\$0	\$153,550	\$0	\$153,550
Year 7	2029	\$0	\$153,550	\$0	\$153,550
Year 8	2030	\$0	\$153,550	\$0	\$153,550
Year 9	2031	\$0	\$153,550	\$0	\$153,550
Year 10	2032	\$0	\$153,550	\$0	\$153,550
Year 11	2033	\$0	\$153,550	\$0	\$153,550
Year 12	2034	\$0	\$153,550	\$0	\$153,550
Year 13	2035	\$0	\$153,550	\$0	\$153,550
Year 14	2036	\$0	\$153,550	\$0	\$153,550
Year 15	2037	\$0	\$153,550	\$0	\$153,550
Year 16	2038	\$0	\$153,550	\$0	\$153,550
Year 17	2039	\$0	\$153,550	\$0	\$153,550
Year 18	2040	\$0	\$153,550	\$0	\$153,550
Year 19	2041	\$0	\$153,550	\$0	\$153,550
Year 20	2042	\$0	\$153,550	\$0	\$153,550
	AVERAGE	\$57,000	\$114,000	\$0	\$171,000
	TOTAL	\$1,535,501	\$3,071,000	\$0	\$4,606,501

Table 38: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	1,486,000	886,000	736,000
Year -5	2017	1,512,000	902,000	749,000
Year -4	2018	1,539,000	917,000	761,000
Year -3	2019	1,565,000	933,000	774,000
Year -2	2020	1,592,000	948,000	786,000
Year -1	2021	1,618,000	964,000	799,000
Year 0	2022	1,645,000	979,000	811,000
Year 1	2023	2,312,000	1,393,000	1,089,000
Year 2	2024	2,997,000	1,818,000	1,374,000
Year 3	2025	3,699,000	2,254,000	1,666,000
Year 4	2026	4,419,000	2,701,000	1,966,000
Year 5	2027	5,156,000	3,159,000	2,272,000
Year 6	2028	5,910,000	3,627,000	2,586,000
Year 7	2029	6,682,000	4,106,000	2,907,000
Year 8	2030	7,470,000	4,596,000	3,235,000
Year 9	2031	8,277,000	5,097,000	3,570,000
Year 10	2032	9,100,000	5,608,000	3,912,000
Year 11	2033	9,941,000	6,131,000	4,262,000
Year 12	2034	10,799,000	6,664,000	4,619,000
Year 13	2035	11,674,000	7,208,000	4,983,000
Year 14	2036	12,567,000	7,763,000	5,354,000
Year 15	2037	13,477,000	8,328,000	5,732,000
Year 16	2038	14,404,000	8,905,000	6,117,000
Year 17	2039	15,349,000	9,492,000	6,510,000
Year 18	2040	16,311,000	10,090,000	6,910,000
Year 19	2041	17,290,000	10,699,000	7,317,000
Year 20	2042	18,286,000	11,319,000	7,731,000
	AVERAGE	7,670,000	4,722,000	3,316,000
	TOTAL	207,077,000	127,487,000	89,528,000

Table 39: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$55,000	\$97,000	\$743,000	\$362,000	\$158,000	\$1,414,000
Year 2	2024	\$70,000	\$94,000	\$937,000	\$456,000	\$199,000	\$1,756,000
Year 3	2025	\$85,000	\$90,000	\$1,136,000	\$553,000	\$241,000	\$2,106,000
Year 4	2026	\$100,000	\$87,000	\$1,341,000	\$653,000	\$284,000	\$2,464,000
Year 5	2027	\$115,000	\$83,000	\$1,550,000	\$754,000	\$329,000	\$2,831,000
Year 6	2028	\$131,000	\$79,000	\$1,764,000	\$858,000	\$374,000	\$3,206,000
Year 7	2029	\$147,000	\$75,000	\$1,982,000	\$965,000	\$421,000	\$3,590,000
Year 8	2030	\$164,000	\$70,000	\$2,206,000	\$1,074,000	\$468,000	\$3,982,000
Year 9	2031	\$181,000	\$66,000	\$2,435,000	\$1,185,000	\$516,000	\$4,383,000
Year 10	2032	\$198,000	\$61,000	\$2,668,000	\$1,299,000	\$566,000	\$4,792,000
Year 11	2033	\$216,000	\$56,000	\$2,907,000	\$1,415,000	\$617,000	\$5,210,000
Year 12	2034	\$234,000	\$50,000	\$3,150,000	\$1,533,000	\$668,000	\$5,636,000
Year 13	2035	\$253,000	\$45,000	\$3,398,000	\$1,654,000	\$721,000	\$6,071,000
Year 14	2036	\$272,000	\$39,000	\$3,651,000	\$1,777,000	\$775,000	\$6,514,000
Year 15	2037	\$291,000	\$33,000	\$3,909,000	\$1,903,000	\$829,000	\$6,965,000
Year 16	2038	\$310,000	\$27,000	\$4,170,000	\$2,031,000	\$885,000	\$7,426,000
Year 17	2039	\$330,000	\$20,000	\$4,440,000	\$2,161,000	\$942,000	\$7,894,000
Year 18	2040	\$351,000	\$14,000	\$4,713,000	\$2,294,000	\$1,000,000	\$8,371,000
Year 19	2041	\$371,000	\$7,000	\$4,990,000	\$2,429,000	\$1,059,000	\$8,856,000
Year 20	2042	\$392,000	\$0	\$5,273,000	\$2,567,000	\$1,119,000	\$9,350,000
	AVERAGE	\$158,000	\$40,000	\$2,125,000	\$1,034,000	\$451,000	\$3,808,000
	TOTAL	\$4,266,000	\$1,093,000	\$57,363,000	\$27,923,000	\$12,171,000	\$102,817,000

Table 40: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$217,000	-\$217,000	-\$217,000
Year -3	2019	\$0	\$281,000	-\$281,000	-\$498,000
Year -2	2020	\$0	\$546,000	-\$546,000	-\$1,044,000
Year -1	2021	\$0	\$199,000	-\$199,000	-\$1,243,000
Year 0	2022	\$0	\$129,000	-\$129,000	-\$1,371,000
Year 1	2023	\$1,150,000	\$125,000	\$1,025,000	-\$346,000
Year 2	2024	\$1,386,000	\$121,000	\$1,265,000	\$918,000
Year 3	2025	\$1,614,000	\$118,000	\$1,496,000	\$2,414,000
Year 4	2026	\$1,833,000	\$114,000	\$1,719,000	\$4,134,000
Year 5	2027	\$2,045,000	\$111,000	\$1,934,000	\$6,068,000
Year 6	2028	\$2,249,000	\$108,000	\$2,141,000	\$8,209,000
Year 7	2029	\$2,445,000	\$105,000	\$2,340,000	\$10,549,000
Year 8	2030	\$2,633,000	\$102,000	\$2,531,000	\$13,080,000
Year 9	2031	\$2,813,000	\$99,000	\$2,715,000	\$15,795,000
Year 10	2032	\$2,986,000	\$96,000	\$2,891,000	\$18,686,000
Year 11	2033	\$3,152,000	\$93,000	\$3,059,000	\$21,745,000
Year 12	2034	\$3,311,000	\$90,000	\$3,220,000	\$24,965,000
Year 13	2035	\$3,462,000	\$88,000	\$3,375,000	\$28,340,000
Year 14	2036	\$3,607,000	\$85,000	\$3,522,000	\$31,861,000
Year 15	2037	\$3,744,000	\$83,000	\$3,662,000	\$35,523,000
Year 16	2038	\$3,875,000	\$80,000	\$3,795,000	\$39,318,000
Year 17	2039	\$4,000,000	\$78,000	\$3,922,000	\$43,240,000
Year 18	2040	\$4,118,000	\$76,000	\$4,042,000	\$47,283,000
Year 19	2041	\$4,230,000	\$73,000	\$4,157,000	\$51,439,000
Year 20	2042	\$4,336,000	\$71,000	\$4,265,000	\$55,704,000
INTERNAL RATE OF RETURN					44.91%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$55,700,000
BENEFIT - COST RATIO					18.0

Table 41: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$201,000	-\$201,000	-\$201,000
Year -3	2019	\$0	\$251,000	-\$251,000	-\$452,000
Year -2	2020	\$0	\$469,000	-\$469,000	-\$920,000
Year -1	2021	\$0	\$164,000	-\$164,000	-\$1,085,000
Year 0	2022	\$0	\$102,000	-\$102,000	-\$1,187,000
Year 1	2023	\$881,000	\$96,000	\$785,000	-\$402,000
Year 2	2024	\$1,022,000	\$89,000	\$932,000	\$530,000
Year 3	2025	\$1,145,000	\$84,000	\$1,062,000	\$1,592,000
Year 4	2026	\$1,253,000	\$78,000	\$1,174,000	\$2,767,000
Year 5	2027	\$1,345,000	\$73,000	\$1,272,000	\$4,039,000
Year 6	2028	\$1,424,000	\$68,000	\$1,355,000	\$5,394,000
Year 7	2029	\$1,490,000	\$64,000	\$1,426,000	\$6,820,000
Year 8	2030	\$1,544,000	\$60,000	\$1,485,000	\$8,305,000
Year 9	2031	\$1,589,000	\$56,000	\$1,533,000	\$9,838,000
Year 10	2032	\$1,623,000	\$52,000	\$1,571,000	\$11,409,000
Year 11	2033	\$1,649,000	\$49,000	\$1,601,000	\$13,010,000
Year 12	2034	\$1,668,000	\$45,000	\$1,622,000	\$14,632,000
Year 13	2035	\$1,679,000	\$42,000	\$1,636,000	\$16,268,000
Year 14	2036	\$1,683,000	\$40,000	\$1,644,000	\$17,912,000
Year 15	2037	\$1,682,000	\$37,000	\$1,645,000	\$19,557,000
Year 16	2038	\$1,676,000	\$35,000	\$1,641,000	\$21,198,000
Year 17	2039	\$1,665,000	\$32,000	\$1,633,000	\$22,831,000
Year 18	2040	\$1,650,000	\$30,000	\$1,620,000	\$24,451,000
Year 19	2041	\$1,632,000	\$28,000	\$1,604,000	\$26,055,000
Year 20	2042	\$1,610,000	\$26,000	\$1,584,000	\$27,638,000
				INTERNAL RATE OF RETURN	39.49%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$27,640,000
				BENEFIT - COST RATIO	13.2

Appendix H: Crestline

Table 42: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -3	2016	\$0	\$0	\$0	\$0
Year -2	2017	\$0	\$0	\$0	\$0
Year -1	2018	\$238,124	\$0	\$0	\$238,124
Year 0	2019	\$102,053	\$0	\$0	\$102,053
Year 1	2020	\$0	\$34,018	\$0	\$34,018
Year 2	2021	\$0	\$34,018	\$0	\$34,018
Year 3	2022	\$0	\$34,018	\$0	\$34,018
Year 4	2023	\$0	\$34,018	\$0	\$34,018
Year 5	2024	\$0	\$34,018	\$0	\$34,018
Year 6	2025	\$0	\$34,018	\$0	\$34,018
Year 7	2026	\$0	\$34,018	\$0	\$34,018
Year 8	2027	\$0	\$34,018	\$0	\$34,018
Year 9	2028	\$0	\$34,018	\$0	\$34,018
Year 10	2029	\$0	\$34,018	\$0	\$34,018
Year 11	2030	\$0	\$34,018	\$0	\$34,018
Year 12	2031	\$0	\$34,018	\$0	\$34,018
Year 13	2032	\$0	\$34,018	\$0	\$34,018
Year 14	2033	\$0	\$34,018	\$0	\$34,018
Year 15	2034	\$0	\$34,018	\$0	\$34,018
Year 16	2035	\$0	\$34,018	\$0	\$34,018
Year 17	2036	\$0	\$34,018	\$0	\$34,018
Year 18	2037	\$0	\$34,018	\$0	\$34,018
Year 19	2038	\$0	\$34,018	\$0	\$34,018
Year 20	2039	\$0	\$34,018	\$0	\$34,018
	AVERAGE	\$14,000	\$28,000	\$0	\$43,000
	TOTAL	\$340,177	\$680,360	\$0	\$1,020,537

Table 43: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -3	2016	521,000	292,000	223,000
Year -2	2017	513,000	288,000	219,000
Year -1	2018	505,000	283,000	215,000
Year 0	2019	498,000	279,000	212,000
Year 1	2020	558,000	314,000	234,000
Year 2	2021	615,000	346,000	255,000
Year 3	2022	669,000	377,000	274,000
Year 4	2023	719,000	406,000	292,000
Year 5	2024	765,000	432,000	309,000
Year 6	2025	808,000	457,000	324,000
Year 7	2026	847,000	479,000	338,000
Year 8	2027	883,000	500,000	351,000
Year 9	2028	915,000	518,000	363,000
Year 10	2029	944,000	535,000	373,000
Year 11	2030	969,000	549,000	382,000
Year 12	2031	991,000	562,000	389,000
Year 13	2032	1,009,000	572,000	395,000
Year 14	2033	1,023,000	581,000	400,000
Year 15	2034	1,034,000	587,000	404,000
Year 16	2035	1,041,000	592,000	406,000
Year 17	2036	1,045,000	594,000	407,000
Year 18	2037	1,045,000	595,000	407,000
Year 19	2038	1,042,000	593,000	405,000
Year 20	2039	1,035,000	589,000	402,000
	AVERAGE	833,000	472,000	332,000
	TOTAL	19,994,000	11,320,000	7,979,000

Table 44: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -3	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2020	\$12,000	\$17,000	\$159,000	\$78,000	\$34,000	\$300,000
Year 2	2021	\$13,000	\$17,000	\$174,000	\$84,000	\$37,000	\$324,000
Year 3	2022	\$14,000	\$16,000	\$187,000	\$91,000	\$40,000	\$347,000
Year 4	2023	\$15,000	\$15,000	\$199,000	\$97,000	\$42,000	\$368,000
Year 5	2024	\$16,000	\$14,000	\$211,000	\$103,000	\$45,000	\$388,000
Year 6	2025	\$16,000	\$13,000	\$221,000	\$108,000	\$47,000	\$405,000
Year 7	2026	\$17,000	\$13,000	\$231,000	\$112,000	\$49,000	\$422,000
Year 8	2027	\$18,000	\$12,000	\$239,000	\$117,000	\$51,000	\$436,000
Year 9	2028	\$18,000	\$11,000	\$247,000	\$120,000	\$52,000	\$449,000
Year 10	2029	\$19,000	\$10,000	\$254,000	\$124,000	\$54,000	\$461,000
Year 11	2030	\$19,000	\$9,000	\$260,000	\$127,000	\$55,000	\$471,000
Year 12	2031	\$20,000	\$8,000	\$265,000	\$129,000	\$56,000	\$479,000
Year 13	2032	\$20,000	\$7,000	\$270,000	\$131,000	\$57,000	\$485,000
Year 14	2033	\$20,000	\$6,000	\$273,000	\$133,000	\$58,000	\$490,000
Year 15	2034	\$20,000	\$5,000	\$275,000	\$134,000	\$58,000	\$494,000
Year 16	2035	\$21,000	\$4,000	\$277,000	\$135,000	\$59,000	\$495,000
Year 17	2036	\$21,000	\$3,000	\$278,000	\$135,000	\$59,000	\$496,000
Year 18	2037	\$21,000	\$2,000	\$277,000	\$135,000	\$59,000	\$494,000
Year 19	2038	\$21,000	\$1,000	\$280,000	\$134,000	\$59,000	\$491,000
Year 20	2039	\$20,000	\$0	\$274,000	\$133,000	\$58,000	\$486,000
	AVERAGE	\$15,000	\$8,000	\$202,000	\$98,000	\$43,000	\$366,000
	TOTAL	\$361,000	\$183,000	\$4,851,000	\$2,360,000	\$1,029,000	\$8,781,000

Table 45: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -3	2016	\$0	\$0	\$0	\$0
Year -2	2017	\$0	\$0	\$0	\$0
Year -1	2018	\$0	\$224,000	-\$224,000	-\$224,000
Year 0	2019	\$0	\$93,000	-\$93,000	-\$318,000
Year 1	2020	\$267,000	\$30,000	\$236,000	-\$82,000
Year 2	2021	\$280,000	\$29,000	\$250,000	\$169,000
Year 3	2022	\$291,000	\$28,000	\$262,000	\$431,000
Year 4	2023	\$299,000	\$28,000	\$272,000	\$703,000
Year 5	2024	\$306,000	\$27,000	\$279,000	\$982,000
Year 6	2025	\$311,000	\$26,000	\$285,000	\$1,267,000
Year 7	2026	\$314,000	\$25,000	\$289,000	\$1,555,000
Year 8	2027	\$315,000	\$25,000	\$291,000	\$1,846,000
Year 9	2028	\$315,000	\$24,000	\$291,000	\$2,137,000
Year 10	2029	\$314,000	\$23,000	\$291,000	\$2,428,000
Year 11	2030	\$311,000	\$22,000	\$289,000	\$2,716,000
Year 12	2031	\$307,000	\$22,000	\$286,000	\$3,002,000
Year 13	2032	\$302,000	\$21,000	\$281,000	\$3,283,000
Year 14	2033	\$297,000	\$21,000	\$276,000	\$3,559,000
Year 15	2034	\$290,000	\$20,000	\$270,000	\$3,829,000
Year 16	2035	\$283,000	\$19,000	\$263,000	\$4,093,000
Year 17	2036	\$274,000	\$19,000	\$256,000	\$4,348,000
Year 18	2037	\$266,000	\$18,000	\$247,000	\$4,595,000
Year 19	2038	\$256,000	\$18,000	\$239,000	\$4,834,000
Year 20	2039	\$246,000	\$17,000	\$229,000	\$5,063,000
INTERNAL RATE OF RETURN					57.08%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$5,060,000
BENEFIT - COST RATIO					7.5

Table 46: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -3	2016	\$0	\$0	\$0	\$0
Year -2	2017	\$0	\$0	\$0	\$0
Year -1	2018	\$0	\$208,000	-\$208,000	-\$208,000
Year 0	2019	\$0	\$83,000	-\$83,000	-\$291,000
Year 1	2020	\$229,000	\$26,000	\$203,000	-\$88,000
Year 2	2021	\$231,000	\$24,000	\$207,000	\$119,000
Year 3	2022	\$231,000	\$23,000	\$209,000	\$327,000
Year 4	2023	\$229,000	\$21,000	\$208,000	\$535,000
Year 5	2024	\$226,000	\$20,000	\$206,000	\$741,000
Year 6	2025	\$221,000	\$19,000	\$202,000	\$943,000
Year 7	2026	\$214,000	\$17,000	\$197,000	\$1,140,000
Year 8	2027	\$207,000	\$16,000	\$191,000	\$1,331,000
Year 9	2028	\$200,000	\$15,000	\$184,000	\$1,516,000
Year 10	2029	\$191,000	\$14,000	\$177,000	\$1,693,000
Year 11	2030	\$183,000	\$13,000	\$169,000	\$1,862,000
Year 12	2031	\$174,000	\$12,000	\$161,000	\$2,024,000
Year 13	2032	\$164,000	\$12,000	\$153,000	\$2,176,000
Year 14	2033	\$155,000	\$11,000	\$144,000	\$2,321,000
Year 15	2034	\$146,000	\$10,000	\$136,000	\$2,457,000
Year 16	2035	\$137,000	\$9,000	\$128,000	\$2,585,000
Year 17	2036	\$128,000	\$9,000	\$119,000	\$2,704,000
Year 18	2037	\$119,000	\$8,000	\$111,000	\$2,815,000
Year 19	2038	\$111,000	\$8,000	\$103,000	\$2,918,000
Year 20	2039	\$103,000	\$7,000	\$95,000	\$3,013,000
INTERNAL RATE OF RETURN					51.20%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$3,010,000
BENEFIT - COST RATIO					6.1

Appendix I: Fontana

Table 47: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$372,423	\$0	\$0	\$372,423
Year -3	2019	\$496,564	\$0	\$0	\$496,564
Year -2	2020	\$993,127	\$0	\$0	\$993,127
Year -1	2021	\$372,423	\$0	\$0	\$372,423
Year 0	2022	\$248,282	\$0	\$0	\$248,282
Year 1	2023	\$0	\$248,282	\$0	\$248,282
Year 2	2024	\$0	\$248,282	\$0	\$248,282
Year 3	2025	\$0	\$248,282	\$0	\$248,282
Year 4	2026	\$0	\$248,282	\$0	\$248,282
Year 5	2027	\$0	\$248,282	\$0	\$248,282
Year 6	2028	\$0	\$248,282	\$0	\$248,282
Year 7	2029	\$0	\$248,282	\$0	\$248,282
Year 8	2030	\$0	\$248,282	\$0	\$248,282
Year 9	2031	\$0	\$248,282	\$0	\$248,282
Year 10	2032	\$0	\$248,282	\$0	\$248,282
Year 11	2033	\$0	\$248,282	\$0	\$248,282
Year 12	2034	\$0	\$248,282	\$0	\$248,282
Year 13	2035	\$0	\$248,282	\$0	\$248,282
Year 14	2036	\$0	\$248,282	\$0	\$248,282
Year 15	2037	\$0	\$248,282	\$0	\$248,282
Year 16	2038	\$0	\$248,282	\$0	\$248,282
Year 17	2039	\$0	\$248,282	\$0	\$248,282
Year 18	2040	\$0	\$248,282	\$0	\$248,282
Year 19	2041	\$0	\$248,282	\$0	\$248,282
Year 20	2042	\$0	\$248,282	\$0	\$248,282
	AVERAGE	\$92,000	\$184,000	\$0	\$276,000
	TOTAL	\$2,482,819	\$4,965,640	\$0	\$7,448,459

Table 48: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	4,429,000	2,696,000	2,204,000
Year -5	2017	4,494,000	2,735,000	2,236,000
Year -4	2018	4,560,000	2,775,000	2,268,000
Year -3	2019	4,625,000	2,814,000	2,300,000
Year -2	2020	4,691,000	2,854,000	2,332,000
Year -1	2021	4,756,000	2,893,000	2,364,000
Year 0	2022	4,822,000	2,933,000	2,395,000
Year 1	2023	7,493,000	4,614,000	3,529,000
Year 2	2024	10,229,000	6,336,000	4,690,000
Year 3	2025	13,028,000	8,099,000	5,878,000
Year 4	2026	15,893,000	9,903,000	7,093,000
Year 5	2027	18,821,000	11,747,000	8,335,000
Year 6	2028	21,814,000	13,632,000	9,605,000
Year 7	2029	24,872,000	15,557,000	10,902,000
Year 8	2030	27,994,000	17,523,000	12,226,000
Year 9	2031	31,180,000	19,530,000	13,578,000
Year 10	2032	34,431,000	21,577,000	14,957,000
Year 11	2033	37,746,000	23,665,000	16,363,000
Year 12	2034	41,125,000	25,794,000	17,796,000
Year 13	2035	44,569,000	27,963,000	19,257,000
Year 14	2036	48,077,000	30,173,000	20,745,000
Year 15	2037	51,650,000	32,423,000	22,260,000
Year 16	2038	55,287,000	34,714,000	23,802,000
Year 17	2039	58,988,000	37,046,000	25,372,000
Year 18	2040	62,754,000	39,419,000	26,969,000
Year 19	2041	66,585,000	41,832,000	28,593,000
Year 20	2042	70,479,000	44,285,000	30,244,000
	AVERAGE	28,718,000	17,983,000	12,529,000
	TOTAL	775,392,000	485,532,000	338,293,000

Table 49: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$179,000	\$251,000	\$2,407,000	\$1,172,000	\$511,000	\$4,519,000
Year 2	2024	\$238,000	\$241,000	\$3,199,000	\$1,557,000	\$678,000	\$5,913,000
Year 3	2025	\$298,000	\$232,000	\$4,009,000	\$1,951,000	\$850,000	\$7,340,000
Year 4	2026	\$360,000	\$221,000	\$4,838,000	\$2,355,000	\$1,026,000	\$8,800,000
Year 5	2027	\$423,000	\$211,000	\$5,685,000	\$2,767,000	\$1,206,000	\$10,292,000
Year 6	2028	\$487,000	\$200,000	\$6,551,000	\$3,189,000	\$1,390,000	\$11,816,000
Year 7	2029	\$553,000	\$188,000	\$7,436,000	\$3,619,000	\$1,577,000	\$13,374,000
Year 8	2030	\$620,000	\$176,000	\$8,339,000	\$4,059,000	\$1,769,000	\$14,963,000
Year 9	2031	\$689,000	\$164,000	\$9,261,000	\$4,508,000	\$1,964,000	\$16,586,000
Year 10	2032	\$759,000	\$151,000	\$10,201,000	\$4,966,000	\$2,164,000	\$18,240,000
Year 11	2033	\$830,000	\$138,000	\$11,160,000	\$5,432,000	\$2,367,000	\$19,928,000
Year 12	2034	\$903,000	\$124,000	\$12,138,000	\$5,908,000	\$2,575,000	\$21,648,000
Year 13	2035	\$977,000	\$110,000	\$13,134,000	\$6,393,000	\$2,786,000	\$23,400,000
Year 14	2036	\$1,052,000	\$96,000	\$14,149,000	\$6,887,000	\$3,001,000	\$25,185,000
Year 15	2037	\$1,129,000	\$81,000	\$15,182,000	\$7,390,000	\$3,220,000	\$27,003,000
Year 16	2038	\$1,208,000	\$66,000	\$16,230,000	\$7,902,000	\$3,444,000	\$28,853,000
Year 17	2039	\$1,287,000	\$50,000	\$17,305,000	\$8,423,000	\$3,671,000	\$30,735,000
Year 18	2040	\$1,368,000	\$34,000	\$18,394,000	\$8,953,000	\$3,902,000	\$32,651,000
Year 19	2041	\$1,451,000	\$17,000	\$19,502,000	\$9,493,000	\$4,137,000	\$34,598,000
Year 20	2042	\$1,534,000	\$0	\$20,628,000	\$10,041,000	\$4,376,000	\$36,579,000
	AVERAGE	\$605,000	\$102,000	\$8,139,000	\$3,962,000	\$1,726,000	\$14,534,000
	TOTAL	\$16,345,000	\$2,751,000	\$219,748,000	\$106,965,000	\$46,614,000	\$392,423,000

Table 50: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$351,000	-\$351,000	-\$351,000
Year -3	2019	\$0	\$454,000	-\$454,000	-\$805,000
Year -2	2020	\$0	\$882,000	-\$882,000	-\$1,688,000
Year -1	2021	\$0	\$321,000	-\$321,000	-\$2,009,000
Year 0	2022	\$0	\$208,000	-\$208,000	-\$2,217,000
Year 1	2023	\$3,674,000	\$202,000	\$3,472,000	\$1,255,000
Year 2	2024	\$4,668,000	\$196,000	\$4,472,000	\$5,727,000
Year 3	2025	\$5,626,000	\$190,000	\$5,435,000	\$11,162,000
Year 4	2026	\$6,548,000	\$185,000	\$6,363,000	\$17,525,000
Year 5	2027	\$7,435,000	\$179,000	\$7,256,000	\$24,781,000
Year 6	2028	\$8,288,000	\$174,000	\$8,114,000	\$32,895,000
Year 7	2029	\$9,107,000	\$169,000	\$8,938,000	\$41,832,000
Year 8	2030	\$9,893,000	\$164,000	\$9,728,000	\$51,561,000
Year 9	2031	\$10,646,000	\$159,000	\$10,486,000	\$62,047,000
Year 10	2032	\$11,367,000	\$155,000	\$11,212,000	\$73,259,000
Year 11	2033	\$12,057,000	\$150,000	\$11,906,000	\$85,166,000
Year 12	2034	\$12,716,000	\$146,000	\$12,570,000	\$97,736,000
Year 13	2035	\$13,345,000	\$142,000	\$13,203,000	\$110,939,000
Year 14	2036	\$13,944,000	\$137,000	\$13,807,000	\$124,746,000
Year 15	2037	\$14,515,000	\$133,000	\$14,382,000	\$139,128,000
Year 16	2038	\$15,058,000	\$130,000	\$14,929,000	\$154,056,000
Year 17	2039	\$15,573,000	\$126,000	\$15,448,000	\$169,504,000
Year 18	2040	\$16,062,000	\$122,000	\$15,940,000	\$185,444,000
Year 19	2041	\$16,524,000	\$119,000	\$16,406,000	\$201,849,000
Year 20	2042	\$16,961,000	\$115,000	\$16,846,000	\$218,696,000
INTERNAL RATE OF RETURN					64.27%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$218,700,000
BENEFIT - COST RATIO					42.2

Table 51: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$325,000	-\$325,000	-\$325,000
Year -3	2019	\$0	\$405,000	-\$405,000	-\$731,000
Year -2	2020	\$0	\$758,000	-\$758,000	-\$1,488,000
Year -1	2021	\$0	\$266,000	-\$266,000	-\$1,754,000
Year 0	2022	\$0	\$165,000	-\$165,000	-\$1,919,000
Year 1	2023	\$2,814,000	\$155,000	\$2,659,000	\$740,000
Year 2	2024	\$3,441,000	\$145,000	\$3,297,000	\$4,037,000
Year 3	2025	\$3,993,000	\$135,000	\$3,857,000	\$7,895,000
Year 4	2026	\$4,473,000	\$126,000	\$4,347,000	\$12,242,000
Year 5	2027	\$4,890,000	\$118,000	\$4,772,000	\$17,013,000
Year 6	2028	\$5,247,000	\$110,000	\$5,136,000	\$22,150,000
Year 7	2029	\$5,550,000	\$103,000	\$5,447,000	\$27,596,000
Year 8	2030	\$5,803,000	\$96,000	\$5,707,000	\$33,303,000
Year 9	2031	\$6,011,000	\$90,000	\$5,921,000	\$39,224,000
Year 10	2032	\$6,179,000	\$84,000	\$6,095,000	\$45,319,000
Year 11	2033	\$6,309,000	\$79,000	\$6,230,000	\$51,549,000
Year 12	2034	\$6,405,000	\$73,000	\$6,331,000	\$57,880,000
Year 13	2035	\$6,470,000	\$69,000	\$6,402,000	\$64,282,000
Year 14	2036	\$6,508,000	\$64,000	\$6,444,000	\$70,726,000
Year 15	2037	\$6,522,000	\$60,000	\$6,462,000	\$77,188,000
Year 16	2038	\$6,512,000	\$56,000	\$6,456,000	\$83,644,000
Year 17	2039	\$6,484,000	\$52,000	\$6,431,000	\$90,075,000
Year 18	2040	\$6,437,000	\$49,000	\$6,388,000	\$96,463,000
Year 19	2041	\$6,375,000	\$46,000	\$6,329,000	\$102,792,000
Year 20	2042	\$6,299,000	\$43,000	\$6,256,000	\$109,048,000
INTERNAL RATE OF RETURN					58.13%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$109,050,000
BENEFIT - COST RATIO					30.7

Appendix J: Grand Terrace

Table 52: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$560,971	\$0	\$0	\$560,971
Year -4	2019	\$934,952	\$0	\$0	\$934,952
Year -3	2020	\$747,961	\$0	\$0	\$747,961
Year -2	2021	\$560,971	\$0	\$0	\$560,971
Year -1	2022	\$560,971	\$0	\$0	\$560,971
Year 0	2023	\$373,981	\$0	\$0	\$373,981
Year 1	2024	\$0	\$373,981	\$0	\$373,981
Year 2	2025	\$0	\$373,981	\$0	\$373,981
Year 3	2026	\$0	\$373,981	\$0	\$373,981
Year 4	2027	\$0	\$373,981	\$0	\$373,981
Year 5	2028	\$0	\$373,981	\$0	\$373,981
Year 6	2029	\$0	\$373,981	\$0	\$373,981
Year 7	2030	\$0	\$373,981	\$0	\$373,981
Year 8	2031	\$0	\$373,981	\$0	\$373,981
Year 9	2032	\$0	\$373,981	\$0	\$373,981
Year 10	2033	\$0	\$373,981	\$0	\$373,981
Year 11	2034	\$0	\$373,981	\$0	\$373,981
Year 12	2035	\$0	\$373,981	\$0	\$373,981
Year 13	2036	\$0	\$373,981	\$0	\$373,981
Year 14	2037	\$0	\$373,981	\$0	\$373,981
Year 15	2038	\$0	\$373,981	\$0	\$373,981
Year 16	2039	\$0	\$373,981	\$0	\$373,981
Year 17	2040	\$0	\$373,981	\$0	\$373,981
Year 18	2041	\$0	\$373,981	\$0	\$373,981
Year 19	2042	\$0	\$373,981	\$0	\$373,981
Year 20	2043	\$0	\$373,981	\$0	\$373,981
	AVERAGE	\$134,000	\$267,000	\$0	\$401,000
	TOTAL	\$3,739,807	\$7,479,620	\$0	\$11,219,427

Table 53: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	95,000	61,000	59,000
Year -6	2017	97,000	62,000	60,000
Year -5	2018	98,000	63,000	61,000
Year -4	2019	100,000	64,000	62,000
Year -3	2020	102,000	65,000	62,000
Year -2	2021	103,000	66,000	63,000
Year -1	2022	105,000	67,000	64,000
Year 0	2023	106,000	68,000	65,000
Year 1	2024	298,000	197,000	153,000
Year 2	2025	493,000	329,000	242,000
Year 3	2026	693,000	464,000	334,000
Year 4	2027	898,000	602,000	427,000
Year 5	2028	1,107,000	744,000	523,000
Year 6	2029	1,321,000	888,000	621,000
Year 7	2030	1,540,000	1,036,000	720,000
Year 8	2031	1,763,000	1,187,000	822,000
Year 9	2032	1,990,000	1,340,000	926,000
Year 10	2033	2,222,000	1,497,000	1,032,000
Year 11	2034	2,458,000	1,657,000	1,140,000
Year 12	2035	2,700,000	1,820,000	1,250,000
Year 13	2036	2,945,000	1,986,000	1,363,000
Year 14	2037	3,195,000	2,155,000	1,477,000
Year 15	2038	3,450,000	2,327,000	1,593,000
Year 16	2039	3,709,000	2,503,000	1,712,000
Year 17	2040	3,973,000	2,681,000	1,832,000
Year 18	2041	4,241,000	2,862,000	1,955,000
Year 19	2042	4,514,000	3,047,000	2,080,000
Year 20	2043	4,792,000	3,235,000	2,206,000
	AVERAGE	1,754,000	1,181,000	818,000
	TOTAL	49,108,000	33,073,000	22,904,000

Table 54: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$8,000	\$10,000	\$104,000	\$51,000	\$22,000	\$194,000
Year 2	2025	\$12,000	\$9,000	\$165,000	\$80,000	\$35,000	\$302,000
Year 3	2026	\$17,000	\$9,000	\$228,000	\$111,000	\$48,000	\$413,000
Year 4	2027	\$22,000	\$9,000	\$291,000	\$142,000	\$62,000	\$525,000
Year 5	2028	\$27,000	\$8,000	\$357,000	\$174,000	\$76,000	\$641,000
Year 6	2029	\$31,000	\$8,000	\$423,000	\$206,000	\$90,000	\$758,000
Year 7	2030	\$37,000	\$8,000	\$491,000	\$239,000	\$104,000	\$879,000
Year 8	2031	\$42,000	\$7,000	\$561,000	\$273,000	\$119,000	\$1,002,000
Year 9	2032	\$47,000	\$7,000	\$632,000	\$307,000	\$134,000	\$1,127,000
Year 10	2033	\$52,000	\$6,000	\$704,000	\$343,000	\$149,000	\$1,254,000
Year 11	2034	\$58,000	\$6,000	\$778,000	\$379,000	\$165,000	\$1,385,000
Year 12	2035	\$63,000	\$5,000	\$853,000	\$415,000	\$181,000	\$1,517,000
Year 13	2036	\$69,000	\$4,000	\$929,000	\$452,000	\$197,000	\$1,653,000
Year 14	2037	\$75,000	\$4,000	\$1,007,000	\$490,000	\$214,000	\$1,790,000
Year 15	2038	\$81,000	\$3,000	\$1,090,000	\$529,000	\$231,000	\$1,930,000
Year 16	2039	\$87,000	\$3,000	\$1,168,000	\$568,000	\$248,000	\$2,073,000
Year 17	2040	\$93,000	\$2,000	\$1,250,000	\$608,000	\$265,000	\$2,218,000
Year 18	2041	\$99,000	\$1,000	\$1,333,000	\$649,000	\$283,000	\$2,366,000
Year 19	2042	\$106,000	\$1,000	\$1,418,000	\$690,000	\$301,000	\$2,516,000
Year 20	2043	\$112,000	\$0	\$1,505,000	\$733,000	\$319,000	\$2,669,000
	AVERAGE	\$41,000	\$4,000	\$546,000	\$266,000	\$116,000	\$972,000
	TOTAL	\$1,138,000	\$110,000	\$15,287,000	\$7,439,000	\$3,243,000	\$27,212,000

Table 55: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$529,000	-\$529,000	-\$529,000
Year -4	2019	\$0	\$856,000	-\$856,000	-\$1,384,000
Year -3	2020	\$0	\$665,000	-\$665,000	-\$2,049,000
Year -2	2021	\$0	\$484,000	-\$484,000	-\$2,533,000
Year -1	2022	\$0	\$470,000	-\$470,000	-\$3,003,000
Year 0	2023	\$0	\$304,000	-\$304,000	-\$3,307,000
Year 1	2024	\$153,000	\$295,000	-\$142,000	-\$3,448,000
Year 2	2025	\$232,000	\$287,000	-\$55,000	-\$3,503,000
Year 3	2026	\$307,000	\$278,000	\$29,000	-\$3,475,000
Year 4	2027	\$380,000	\$270,000	\$109,000	-\$3,365,000
Year 5	2028	\$449,000	\$262,000	\$187,000	-\$3,178,000
Year 6	2029	\$516,000	\$255,000	\$262,000	-\$2,917,000
Year 7	2030	\$581,000	\$247,000	\$334,000	-\$2,583,000
Year 8	2031	\$643,000	\$240,000	\$403,000	-\$2,180,000
Year 9	2032	\$702,000	\$233,000	\$469,000	-\$1,711,000
Year 10	2033	\$759,000	\$226,000	\$533,000	-\$1,178,000
Year 11	2034	\$813,000	\$220,000	\$594,000	-\$585,000
Year 12	2035	\$865,000	\$213,000	\$652,000	\$68,000
Year 13	2036	\$915,000	\$207,000	\$708,000	\$776,000
Year 14	2037	\$962,000	\$201,000	\$761,000	\$1,537,000
Year 15	2038	\$1,007,000	\$195,000	\$812,000	\$2,349,000
Year 16	2039	\$1,050,000	\$189,000	\$861,000	\$3,210,000
Year 17	2040	\$1,091,000	\$184,000	\$907,000	\$4,117,000
Year 18	2041	\$1,130,000	\$179,000	\$951,000	\$5,069,000
Year 19	2042	\$1,167,000	\$173,000	\$993,000	\$6,062,000
Year 20	2043	\$1,201,000	\$168,000	\$1,033,000	\$7,095,000
				INTERNAL RATE OF RETURN	7.03%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$7,090,000
				BENEFIT - COST RATIO	1.9

Table 56: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$490,000	-\$490,000	-\$490,000
Year -4	2019	\$0	\$763,000	-\$763,000	-\$1,253,000
Year -3	2020	\$0	\$571,000	-\$571,000	-\$1,824,000
Year -2	2021	\$0	\$400,000	-\$400,000	-\$2,224,000
Year -1	2022	\$0	\$374,000	-\$374,000	-\$2,598,000
Year 0	2023	\$0	\$233,000	-\$233,000	-\$2,830,000
Year 1	2024	\$113,000	\$218,000	-\$105,000	-\$2,935,000
Year 2	2025	\$164,000	\$203,000	-\$39,000	-\$2,974,000
Year 3	2026	\$210,000	\$190,000	\$20,000	-\$2,954,000
Year 4	2027	\$250,000	\$178,000	\$72,000	-\$2,882,000
Year 5	2028	\$284,000	\$166,000	\$118,000	-\$2,764,000
Year 6	2029	\$315,000	\$155,000	\$160,000	-\$2,605,000
Year 7	2030	\$341,000	\$145,000	\$196,000	-\$2,409,000
Year 8	2031	\$363,000	\$136,000	\$227,000	-\$2,181,000
Year 9	2032	\$382,000	\$127,000	\$255,000	-\$1,926,000
Year 10	2033	\$397,000	\$118,000	\$279,000	-\$1,648,000
Year 11	2034	\$410,000	\$111,000	\$299,000	-\$1,349,000
Year 12	2035	\$420,000	\$103,000	\$316,000	-\$1,032,000
Year 13	2036	\$427,000	\$97,000	\$330,000	-\$702,000
Year 14	2037	\$432,000	\$90,000	\$342,000	-\$360,000
Year 15	2038	\$436,000	\$84,000	\$351,000	-\$9,000
Year 16	2039	\$437,000	\$79,000	\$358,000	\$350,000
Year 17	2040	\$437,000	\$74,000	\$364,000	\$713,000
Year 18	2041	\$436,000	\$69,000	\$367,000	\$1,080,000
Year 19	2042	\$433,000	\$64,000	\$369,000	\$1,449,000
Year 20	2043	\$429,000	\$60,000	\$369,000	\$1,819,000
				INTERNAL RATE OF RETURN	3.03%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$1,820,000
				BENEFIT - COST RATIO	1.3

Appendix J: Hesperia

Table 57: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$507,285	\$0	\$0	\$507,285
Year -4	2019	\$845,475	\$0	\$0	\$845,475
Year -3	2020	\$676,380	\$0	\$0	\$676,380
Year -2	2021	\$507,285	\$0	\$0	\$507,285
Year -1	2022	\$507,285	\$0	\$0	\$507,285
Year 0	2023	\$338,190	\$0	\$0	\$338,190
Year 1	2024	\$0	\$338,190	\$0	\$338,190
Year 2	2025	\$0	\$338,190	\$0	\$338,190
Year 3	2026	\$0	\$338,190	\$0	\$338,190
Year 4	2027	\$0	\$338,190	\$0	\$338,190
Year 5	2028	\$0	\$338,190	\$0	\$338,190
Year 6	2029	\$0	\$338,190	\$0	\$338,190
Year 7	2030	\$0	\$338,190	\$0	\$338,190
Year 8	2031	\$0	\$338,190	\$0	\$338,190
Year 9	2032	\$0	\$338,190	\$0	\$338,190
Year 10	2033	\$0	\$338,190	\$0	\$338,190
Year 11	2034	\$0	\$338,190	\$0	\$338,190
Year 12	2035	\$0	\$338,190	\$0	\$338,190
Year 13	2036	\$0	\$338,190	\$0	\$338,190
Year 14	2037	\$0	\$338,190	\$0	\$338,190
Year 15	2038	\$0	\$338,190	\$0	\$338,190
Year 16	2039	\$0	\$338,190	\$0	\$338,190
Year 17	2040	\$0	\$338,190	\$0	\$338,190
Year 18	2041	\$0	\$338,190	\$0	\$338,190
Year 19	2042	\$0	\$338,190	\$0	\$338,190
Year 20	2043	\$0	\$338,190	\$0	\$338,190
	AVERAGE	\$121,000	\$242,000	\$0	\$362,000
	TOTAL	\$3,381,900	\$6,763,800	\$0	\$10,145,700

Table 58: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	1,574,000	892,000	879,000
Year -6	2017	1,601,000	906,000	894,000
Year -5	2018	1,629,000	921,000	908,000
Year -4	2019	1,656,000	936,000	922,000
Year -3	2020	1,683,000	951,000	937,000
Year -2	2021	1,710,000	965,000	951,000
Year -1	2022	1,737,000	980,000	965,000
Year 0	2023	1,765,000	995,000	980,000
Year 1	2024	2,750,000	1,608,000	1,388,000
Year 2	2025	3,761,000	2,237,000	1,806,000
Year 3	2026	4,797,000	2,881,000	2,234,000
Year 4	2027	5,857,000	3,541,000	2,673,000
Year 5	2028	6,943,000	4,217,000	3,122,000
Year 6	2029	8,053,000	4,909,000	3,581,000
Year 7	2030	9,189,000	5,616,000	4,051,000
Year 8	2031	10,349,000	6,338,000	4,531,000
Year 9	2032	11,534,000	7,077,000	5,021,000
Year 10	2033	12,745,000	7,831,000	5,521,000
Year 11	2034	13,980,000	8,601,000	6,032,000
Year 12	2035	15,240,000	9,386,000	6,553,000
Year 13	2036	16,525,000	10,187,000	7,084,000
Year 14	2037	17,835,000	11,004,000	7,625,000
Year 15	2038	19,170,000	11,836,000	8,177,000
Year 16	2039	20,530,000	12,684,000	8,739,000
Year 17	2040	21,915,000	13,547,000	9,311,000
Year 18	2041	23,325,000	14,427,000	9,894,000
Year 19	2042	24,759,000	15,322,000	10,486,000
Year 20	2043	26,219,000	16,232,000	11,089,000
	AVERAGE	10,315,000	6,322,000	4,513,000
	TOTAL	288,831,000	177,027,000	126,354,000

Table 59: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$70,000	\$202,000	\$946,000	\$461,000	\$201,000	\$1,880,000
Year 2	2025	\$92,000	\$195,000	\$1,232,000	\$599,000	\$261,000	\$2,379,000
Year 3	2026	\$113,000	\$187,000	\$1,524,000	\$742,000	\$323,000	\$2,889,000
Year 4	2027	\$136,000	\$179,000	\$1,823,000	\$887,000	\$387,000	\$3,412,000
Year 5	2028	\$158,000	\$171,000	\$2,129,000	\$1,036,000	\$452,000	\$3,947,000
Year 6	2029	\$182,000	\$162,000	\$2,443,000	\$1,189,000	\$518,000	\$4,494,000
Year 7	2030	\$206,000	\$153,000	\$2,763,000	\$1,345,000	\$586,000	\$5,053,000
Year 8	2031	\$230,000	\$144,000	\$3,090,000	\$1,504,000	\$655,000	\$5,623,000
Year 9	2032	\$255,000	\$134,000	\$3,424,000	\$1,667,000	\$726,000	\$6,206,000
Year 10	2033	\$280,000	\$124,000	\$3,766,000	\$1,833,000	\$799,000	\$6,801,000
Year 11	2034	\$306,000	\$113,000	\$4,114,000	\$2,002,000	\$873,000	\$7,408,000
Year 12	2035	\$332,000	\$102,000	\$4,469,000	\$2,175,000	\$948,000	\$8,027,000
Year 13	2036	\$359,000	\$91,000	\$4,831,000	\$2,352,000	\$1,025,000	\$8,658,000
Year 14	2037	\$387,000	\$79,000	\$5,201,000	\$2,531,000	\$1,103,000	\$9,301,000
Year 15	2038	\$415,000	\$67,000	\$5,580,000	\$2,715,000	\$1,183,000	\$9,956,000
Year 16	2039	\$443,000	\$54,000	\$5,960,000	\$2,901,000	\$1,264,000	\$10,623,000
Year 17	2040	\$472,000	\$41,000	\$6,351,000	\$3,091,000	\$1,347,000	\$11,302,000
Year 18	2041	\$502,000	\$28,000	\$6,748,000	\$3,285,000	\$1,431,000	\$11,994,000
Year 19	2042	\$532,000	\$14,000	\$7,152,000	\$3,481,000	\$1,517,000	\$12,697,000
Year 20	2043	\$563,000	\$0	\$7,563,000	\$3,682,000	\$1,604,000	\$13,412,000
AVERAGE		\$215,000	\$80,000	\$2,897,000	\$1,410,000	\$614,000	\$5,217,000
TOTAL		\$6,033,000	\$2,240,000	\$81,109,000	\$39,478,000	\$17,203,000	\$146,062,000

Table 60: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$478,000	-\$478,000	-\$478,000
Year -4	2019	\$0	\$774,000	-\$774,000	-\$1,252,000
Year -3	2020	\$0	\$601,000	-\$601,000	-\$1,853,000
Year -2	2021	\$0	\$438,000	-\$438,000	-\$2,290,000
Year -1	2022	\$0	\$425,000	-\$425,000	-\$2,715,000
Year 0	2023	\$0	\$275,000	-\$275,000	-\$2,990,000
Year 1	2024	\$1,484,000	\$267,000	\$1,217,000	-\$1,773,000
Year 2	2025	\$1,823,000	\$259,000	\$1,564,000	-\$209,000
Year 3	2026	\$2,150,000	\$252,000	\$1,898,000	\$1,689,000
Year 4	2027	\$2,465,000	\$244,000	\$2,221,000	\$3,910,000
Year 5	2028	\$2,768,000	\$237,000	\$2,531,000	\$6,441,000
Year 6	2029	\$3,060,000	\$230,000	\$2,830,000	\$9,270,000
Year 7	2030	\$3,340,000	\$224,000	\$3,117,000	\$12,387,000
Year 8	2031	\$3,609,000	\$217,000	\$3,392,000	\$15,780,000
Year 9	2032	\$3,868,000	\$211,000	\$3,657,000	\$19,436,000
Year 10	2033	\$4,115,000	\$205,000	\$3,910,000	\$23,347,000
Year 11	2034	\$4,352,000	\$199,000	\$4,153,000	\$27,499,000
Year 12	2035	\$4,578,000	\$193,000	\$4,385,000	\$31,884,000
Year 13	2036	\$4,794,000	\$187,000	\$4,607,000	\$36,491,000
Year 14	2037	\$5,000,000	\$182,000	\$4,818,000	\$41,309,000
Year 15	2038	\$5,196,000	\$176,000	\$5,020,000	\$46,329,000
Year 16	2039	\$5,383,000	\$171,000	\$5,211,000	\$51,540,000
Year 17	2040	\$5,560,000	\$166,000	\$5,394,000	\$56,934,000
Year 18	2041	\$5,728,000	\$162,000	\$5,567,000	\$62,500,000
Year 19	2042	\$5,887,000	\$157,000	\$5,731,000	\$68,231,000
Year 20	2043	\$6,038,000	\$152,000	\$5,886,000	\$74,117,000
				INTERNAL RATE OF RETURN	30.98%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$74,120,000
				BENEFIT - COST RATIO	11.5

Table 61: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$443,000	-\$443,000	-\$443,000
Year -4	2019	\$0	\$690,000	-\$690,000	-\$1,133,000
Year -3	2020	\$0	\$516,000	-\$516,000	-\$1,649,000
Year -2	2021	\$0	\$362,000	-\$362,000	-\$2,011,000
Year -1	2022	\$0	\$338,000	-\$338,000	-\$2,349,000
Year 0	2023	\$0	\$211,000	-\$211,000	-\$2,560,000
Year 1	2024	\$1,094,000	\$197,000	\$897,000	-\$1,662,000
Year 2	2025	\$1,294,000	\$184,000	\$1,110,000	-\$552,000
Year 3	2026	\$1,469,000	\$172,000	\$1,297,000	\$744,000
Year 4	2027	\$1,621,000	\$161,000	\$1,460,000	\$2,205,000
Year 5	2028	\$1,752,000	\$150,000	\$1,602,000	\$3,807,000
Year 6	2029	\$1,865,000	\$140,000	\$1,724,000	\$5,532,000
Year 7	2030	\$1,959,000	\$131,000	\$1,828,000	\$7,360,000
Year 8	2031	\$2,038,000	\$123,000	\$1,916,000	\$9,276,000
Year 9	2032	\$2,102,000	\$115,000	\$1,988,000	\$11,263,000
Year 10	2033	\$2,153,000	\$107,000	\$2,046,000	\$13,309,000
Year 11	2034	\$2,192,000	\$100,000	\$2,092,000	\$15,401,000
Year 12	2035	\$2,220,000	\$94,000	\$2,126,000	\$17,527,000
Year 13	2036	\$2,237,000	\$87,000	\$2,150,000	\$19,677,000
Year 14	2037	\$2,246,000	\$82,000	\$2,165,000	\$21,842,000
Year 15	2038	\$2,247,000	\$76,000	\$2,171,000	\$24,013,000
Year 16	2039	\$2,241,000	\$71,000	\$2,170,000	\$26,182,000
Year 17	2040	\$2,228,000	\$67,000	\$2,162,000	\$28,344,000
Year 18	2041	\$2,210,000	\$62,000	\$2,147,000	\$30,491,000
Year 19	2042	\$2,186,000	\$58,000	\$2,128,000	\$32,620,000
Year 20	2043	\$2,158,000	\$54,000	\$2,104,000	\$34,723,000
				INTERNAL RATE OF RETURN	26.09%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$34,720,000
				BENEFIT - COST RATIO	8.2

Appendix L: Highland

Table 62: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$1,577,040	\$0	\$0	\$1,577,040
Year -6	2019	\$1,577,040	\$0	\$0	\$1,577,040
Year -5	2020	\$1,182,780	\$0	\$0	\$1,182,780
Year -4	2021	\$1,182,780	\$0	\$0	\$1,182,780
Year -3	2022	\$788,520	\$0	\$0	\$788,520
Year -2	2023	\$788,520	\$0	\$0	\$788,520
Year -1	2024	\$394,260	\$0	\$0	\$394,260
Year 0	2025	\$394,260	\$0	\$0	\$394,260
Year 1	2026	\$0	\$788,520	\$0	\$788,520
Year 2	2027	\$0	\$788,520	\$0	\$788,520
Year 3	2028	\$0	\$788,520	\$0	\$788,520
Year 4	2029	\$0	\$788,520	\$0	\$788,520
Year 5	2030	\$0	\$788,520	\$0	\$788,520
Year 6	2031	\$0	\$788,520	\$0	\$788,520
Year 7	2032	\$0	\$788,520	\$0	\$788,520
Year 8	2033	\$0	\$788,520	\$0	\$788,520
Year 9	2034	\$0	\$788,520	\$0	\$788,520
Year 10	2035	\$0	\$788,520	\$0	\$788,520
Year 11	2036	\$0	\$788,520	\$0	\$788,520
Year 12	2037	\$0	\$788,520	\$0	\$788,520
Year 13	2038	\$0	\$788,520	\$0	\$788,520
Year 14	2039	\$0	\$788,520	\$0	\$788,520
Year 15	2040	\$0	\$788,520	\$0	\$788,520
Year 16	2041	\$0	\$788,520	\$0	\$788,520
Year 17	2042	\$0	\$788,520	\$0	\$788,520
Year 18	2043	\$0	\$788,520	\$0	\$788,520
Year 19	2044	\$0	\$788,520	\$0	\$788,520
Year 20	2045	\$0	\$788,520	\$0	\$788,520
	AVERAGE	\$263,000	\$526,000	\$0	\$789,000
	TOTAL	\$7,885,200	\$15,770,400	\$0	\$23,655,600

Table 63: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -9	2016	1,287,000	792,000	620,000
Year -8	2017	1,287,000	792,000	619,000
Year -7	2018	1,286,000	791,000	618,000
Year -6	2019	1,286,000	791,000	617,000
Year -5	2020	1,285,000	790,000	617,000
Year -4	2021	1,285,000	789,000	616,000
Year -3	2022	1,284,000	789,000	615,000
Year -2	2023	1,284,000	788,000	614,000
Year -1	2024	1,283,000	787,000	613,000
Year 0	2025	1,283,000	787,000	612,000
Year 1	2026	1,847,000	1,144,000	852,000
Year 2	2027	2,407,000	1,498,000	1,090,000
Year 3	2028	2,962,000	1,850,000	1,326,000
Year 4	2029	3,512,000	2,198,000	1,559,000
Year 5	2030	4,057,000	2,543,000	1,791,000
Year 6	2031	4,598,000	2,885,000	2,021,000
Year 7	2032	5,134,000	3,225,000	2,249,000
Year 8	2033	5,665,000	3,561,000	2,475,000
Year 9	2034	6,191,000	3,895,000	2,698,000
Year 10	2035	6,713,000	4,225,000	2,920,000
Year 11	2036	7,229,000	4,552,000	3,140,000
Year 12	2037	7,741,000	4,877,000	3,358,000
Year 13	2038	8,249,000	5,198,000	3,574,000
Year 14	2039	8,751,000	5,517,000	3,787,000
Year 15	2040	9,249,000	5,832,000	3,999,000
Year 16	2041	9,742,000	6,145,000	4,209,000
Year 17	2042	10,230,000	6,455,000	4,417,000
Year 18	2043	10,713,000	6,761,000	4,623,000
Year 19	2044	11,192,000	7,065,000	4,826,000
Year 20	2045	11,666,000	7,365,000	5,028,000
	AVERAGE	5,023,000	3,156,000	2,203,000
	TOTAL	150,698,000	94,687,000	66,103,000

Table 64: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -9	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2024	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2025	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2026	\$43,000	\$57,000	\$581,000	\$283,000	\$123,000	\$1,087,000
Year 2	2027	\$55,000	\$54,000	\$743,000	\$362,000	\$158,000	\$1,372,000
Year 3	2028	\$67,000	\$52,000	\$904,000	\$440,000	\$192,000	\$1,655,000
Year 4	2029	\$79,000	\$49,000	\$1,064,000	\$518,000	\$226,000	\$1,935,000
Year 5	2030	\$91,000	\$46,000	\$1,222,000	\$595,000	\$259,000	\$2,213,000
Year 6	2031	\$103,000	\$44,000	\$1,378,000	\$671,000	\$292,000	\$2,488,000
Year 7	2032	\$114,000	\$41,000	\$1,534,000	\$747,000	\$325,000	\$2,761,000
Year 8	2033	\$126,000	\$38,000	\$1,688,000	\$822,000	\$358,000	\$3,031,000
Year 9	2034	\$137,000	\$35,000	\$1,840,000	\$896,000	\$390,000	\$3,299,000
Year 10	2035	\$148,000	\$32,000	\$1,992,000	\$969,000	\$422,000	\$3,564,000
Year 11	2036	\$159,000	\$29,000	\$2,142,000	\$1,042,000	\$454,000	\$3,827,000
Year 12	2037	\$170,000	\$26,000	\$2,290,000	\$1,115,000	\$486,000	\$4,087,000
Year 13	2038	\$181,000	\$23,000	\$2,440,000	\$1,186,000	\$517,000	\$4,345,000
Year 14	2039	\$192,000	\$20,000	\$2,583,000	\$1,257,000	\$548,000	\$4,601,000
Year 15	2040	\$203,000	\$17,000	\$2,728,000	\$1,328,000	\$579,000	\$4,854,000
Year 16	2041	\$214,000	\$14,000	\$2,871,000	\$1,397,000	\$609,000	\$5,104,000
Year 17	2042	\$224,000	\$10,000	\$3,012,000	\$1,466,000	\$639,000	\$5,352,000
Year 18	2043	\$224,000	\$7,000	\$3,153,000	\$1,535,000	\$669,000	\$5,598,000
Year 19	2044	\$224,000	\$3,000	\$3,292,000	\$1,602,000	\$698,000	\$5,841,000
Year 20	2045	\$224,000	\$0	\$3,430,000	\$1,669,000	\$727,000	\$6,081,000
AVERAGE		\$85,000	\$22,000	\$1,149,000	\$559,000	\$244,000	\$2,058,000
TOTAL		\$2,306,000	\$587,000	\$31,012,000	\$15,094,000	\$6,577,000	\$55,575,000

Table 65: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$1,487,000	-\$1,487,000	-\$1,487,000
Year -6	2019	\$0	\$1,443,000	-\$1,443,000	-\$2,930,000
Year -5	2020	\$0	\$1,051,000	-\$1,051,000	-\$3,981,000
Year -4	2021	\$0	\$1,020,000	-\$1,020,000	-\$5,001,000
Year -3	2022	\$0	\$660,000	-\$660,000	-\$5,661,000
Year -2	2023	\$0	\$641,000	-\$641,000	-\$6,302,000
Year -1	2024	\$0	\$311,000	-\$311,000	-\$6,614,000
Year 0	2025	\$0	\$302,000	-\$302,000	-\$6,916,000
Year 1	2026	\$809,000	\$587,000	\$222,000	-\$6,694,000
Year 2	2027	\$991,000	\$570,000	\$422,000	-\$6,272,000
Year 3	2028	\$1,161,000	\$553,000	\$608,000	-\$5,664,000
Year 4	2029	\$1,318,000	\$537,000	\$781,000	-\$4,883,000
Year 5	2030	\$1,463,000	\$521,000	\$942,000	-\$3,942,000
Year 6	2031	\$1,597,000	\$506,000	\$1,091,000	-\$2,851,000
Year 7	2032	\$1,720,000	\$491,000	\$1,229,000	-\$1,622,000
Year 8	2033	\$1,834,000	\$477,000	\$1,357,000	-\$265,000
Year 9	2034	\$1,938,000	\$463,000	\$1,475,000	\$1,209,000
Year 10	2035	\$2,033,000	\$450,000	\$1,583,000	\$2,792,000
Year 11	2036	\$2,119,000	\$437,000	\$1,682,000	\$4,474,000
Year 12	2037	\$2,197,000	\$424,000	\$1,773,000	\$6,248,000
Year 13	2038	\$2,268,000	\$412,000	\$1,856,000	\$8,104,000
Year 14	2039	\$2,331,000	\$400,000	\$1,932,000	\$10,035,000
Year 15	2040	\$2,388,000	\$388,000	\$2,000,000	\$12,035,000
Year 16	2041	\$2,438,000	\$377,000	\$2,061,000	\$14,096,000
Year 17	2042	\$2,482,000	\$366,000	\$2,116,000	\$16,213,000
Year 18	2043	\$2,520,000	\$355,000	\$2,165,000	\$18,378,000
Year 19	2044	\$2,553,000	\$345,000	\$2,208,000	\$20,586,000
Year 20	2045	\$2,581,000	\$335,000	\$2,246,000	\$22,832,000
				INTERNAL RATE OF RETURN	9.27%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$22,830,000
				BENEFIT - COST RATIO	2.4

Table 66: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$1,377,000	-\$1,377,000	-\$1,377,000
Year -6	2019	\$0	\$1,287,000	-\$1,287,000	-\$2,665,000
Year -5	2020	\$0	\$902,000	-\$902,000	-\$3,567,000
Year -4	2021	\$0	\$843,000	-\$843,000	-\$4,410,000
Year -3	2022	\$0	\$525,000	-\$525,000	-\$4,936,000
Year -2	2023	\$0	\$491,000	-\$491,000	-\$5,427,000
Year -1	2024	\$0	\$229,000	-\$229,000	-\$5,656,000
Year 0	2025	\$0	\$214,000	-\$214,000	-\$5,871,000
Year 1	2026	\$553,000	\$401,000	\$152,000	-\$5,719,000
Year 2	2027	\$652,000	\$375,000	\$277,000	-\$5,442,000
Year 3	2028	\$735,000	\$350,000	\$385,000	-\$5,057,000
Year 4	2029	\$803,000	\$327,000	\$476,000	-\$4,581,000
Year 5	2030	\$858,000	\$306,000	\$552,000	-\$4,029,000
Year 6	2031	\$902,000	\$286,000	\$616,000	-\$3,413,000
Year 7	2032	\$935,000	\$267,000	\$668,000	-\$2,745,000
Year 8	2033	\$960,000	\$250,000	\$710,000	-\$2,035,000
Year 9	2034	\$976,000	\$233,000	\$743,000	-\$1,292,000
Year 10	2035	\$985,000	\$218,000	\$767,000	-\$525,000
Year 11	2036	\$989,000	\$204,000	\$785,000	\$260,000
Year 12	2037	\$987,000	\$190,000	\$797,000	\$1,057,000
Year 13	2038	\$981,000	\$178,000	\$803,000	\$1,860,000
Year 14	2039	\$970,000	\$166,000	\$804,000	\$2,664,000
Year 15	2040	\$957,000	\$155,000	\$801,000	\$3,466,000
Year 16	2041	\$940,000	\$145,000	\$795,000	\$4,261,000
Year 17	2042	\$922,000	\$136,000	\$786,000	\$5,047,000
Year 18	2043	\$901,000	\$127,000	\$774,000	\$5,820,000
Year 19	2044	\$878,000	\$119,000	\$760,000	\$6,580,000
Year 20	2045	\$855,000	\$111,000	\$744,000	\$7,324,000
				INTERNAL RATE OF RETURN	5.18%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$7,320,000
				BENEFIT - COST RATIO	1.7

Appendix M: Loma Linda

Table 67: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$471,636	\$0	\$0	\$471,636
Year -4	2019	\$786,061	\$0	\$0	\$786,061
Year -3	2020	\$628,849	\$0	\$0	\$628,849
Year -2	2021	\$471,636	\$0	\$0	\$471,636
Year -1	2022	\$471,636	\$0	\$0	\$471,636
Year 0	2023	\$314,424	\$0	\$0	\$314,424
Year 1	2024	\$0	\$314,424	\$0	\$314,424
Year 2	2025	\$0	\$314,424	\$0	\$314,424
Year 3	2026	\$0	\$314,424	\$0	\$314,424
Year 4	2027	\$0	\$314,424	\$0	\$314,424
Year 5	2028	\$0	\$314,424	\$0	\$314,424
Year 6	2029	\$0	\$314,424	\$0	\$314,424
Year 7	2030	\$0	\$314,424	\$0	\$314,424
Year 8	2031	\$0	\$314,424	\$0	\$314,424
Year 9	2032	\$0	\$314,424	\$0	\$314,424
Year 10	2033	\$0	\$314,424	\$0	\$314,424
Year 11	2034	\$0	\$314,424	\$0	\$314,424
Year 12	2035	\$0	\$314,424	\$0	\$314,424
Year 13	2036	\$0	\$314,424	\$0	\$314,424
Year 14	2037	\$0	\$314,424	\$0	\$314,424
Year 15	2038	\$0	\$314,424	\$0	\$314,424
Year 16	2039	\$0	\$314,424	\$0	\$314,424
Year 17	2040	\$0	\$314,424	\$0	\$314,424
Year 18	2041	\$0	\$314,424	\$0	\$314,424
Year 19	2042	\$0	\$314,424	\$0	\$314,424
Year 20	2043	\$0	\$314,424	\$0	\$314,424
	AVERAGE	\$112,000	\$225,000	\$0	\$337,000
	TOTAL	\$3,144,242	\$6,288,480	\$0	\$9,432,722

Table 68: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	4,368,000	2,594,000	1,856,000
Year -6	2017	4,637,000	2,755,000	1,969,000
Year -5	2018	4,906,000	2,915,000	2,082,000
Year -4	2019	5,175,000	3,076,000	2,196,000
Year -3	2020	5,444,000	3,236,000	2,309,000
Year -2	2021	5,714,000	3,397,000	2,422,000
Year -1	2022	5,983,000	3,558,000	2,536,000
Year 0	2023	6,252,000	3,718,000	2,649,000
Year 1	2024	6,696,000	3,983,000	2,827,000
Year 2	2025	7,154,000	4,255,000	3,011,000
Year 3	2026	7,625,000	4,535,000	3,199,000
Year 4	2027	8,109,000	4,823,000	3,392,000
Year 5	2028	8,607,000	5,119,000	3,590,000
Year 6	2029	9,118,000	5,423,000	3,793,000
Year 7	2030	9,642,000	5,734,000	4,000,000
Year 8	2031	10,179,000	6,054,000	4,213,000
Year 9	2032	10,730,000	6,381,000	4,431,000
Year 10	2033	11,293,000	6,716,000	4,654,000
Year 11	2034	11,870,000	7,059,000	4,881,000
Year 12	2035	12,461,000	7,410,000	5,114,000
Year 13	2036	13,064,000	7,768,000	5,351,000
Year 14	2037	13,681,000	8,135,000	5,593,000
Year 15	2038	14,311,000	8,509,000	5,841,000
Year 16	2039	14,955,000	8,891,000	6,093,000
Year 17	2040	15,611,000	9,281,000	6,350,000
Year 18	2041	16,281,000	9,678,000	6,612,000
Year 19	2042	16,964,000	10,084,000	6,879,000
Year 20	2043	17,661,000	10,497,000	7,151,000
	AVERAGE	9,946,000	5,914,000	4,107,000
	TOTAL	278,491,000	165,584,000	114,994,000

Table 69: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$143,000	\$144,000	\$1,928,000	\$939,000	\$409,000	\$3,564,000
Year 2	2025	\$153,000	\$143,000	\$2,053,000	\$999,000	\$436,000	\$3,784,000
Year 3	2026	\$162,000	\$140,000	\$2,182,000	\$1,062,000	\$463,000	\$4,009,000
Year 4	2027	\$172,000	\$137,000	\$2,313,000	\$1,126,000	\$491,000	\$4,240,000
Year 5	2028	\$182,000	\$134,000	\$2,448,000	\$1,192,000	\$519,000	\$4,475,000
Year 6	2029	\$192,000	\$130,000	\$2,587,000	\$1,259,000	\$549,000	\$4,717,000
Year 7	2030	\$203,000	\$125,000	\$2,729,000	\$1,328,000	\$579,000	\$4,963,000
Year 8	2031	\$214,000	\$119,000	\$2,874,000	\$1,399,000	\$610,000	\$5,215,000
Year 9	2032	\$225,000	\$113,000	\$3,022,000	\$1,471,000	\$641,000	\$5,472,000
Year 10	2033	\$236,000	\$106,000	\$3,174,000	\$1,545,000	\$673,000	\$5,734,000
Year 11	2034	\$248,000	\$98,000	\$3,329,000	\$1,620,000	\$706,000	\$6,002,000
Year 12	2035	\$259,000	\$90,000	\$3,488,000	\$1,698,000	\$740,000	\$6,275,000
Year 13	2036	\$271,000	\$81,000	\$3,650,000	\$1,776,000	\$774,000	\$6,553,000
Year 14	2037	\$284,000	\$72,000	\$3,815,000	\$1,857,000	\$809,000	\$6,836,000
Year 15	2038	\$296,000	\$61,000	\$3,980,000	\$1,939,000	\$845,000	\$7,125,000
Year 16	2039	\$309,000	\$50,000	\$4,156,000	\$2,023,000	\$881,000	\$7,419,000
Year 17	2040	\$322,000	\$39,000	\$4,331,000	\$2,108,000	\$919,000	\$7,719,000
Year 18	2041	\$335,000	\$27,000	\$4,510,000	\$2,195,000	\$957,000	\$8,023,000
Year 19	2042	\$349,000	\$14,000	\$4,692,000	\$2,284,000	\$995,000	\$8,333,000
Year 20	2043	\$363,000	\$0	\$4,877,000	\$2,374,000	\$1,035,000	\$8,649,000
AVERAGE		\$176,000	\$65,000	\$2,362,000	\$1,150,000	\$501,000	\$4,254,000
TOTAL		\$4,918,000	\$1,823,000	\$66,138,000	\$32,194,000	\$14,031,000	\$119,107,000

Table 70: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$445,000	-\$445,000	-\$445,000
Year -4	2019	\$0	\$719,000	-\$719,000	-\$1,164,000
Year -3	2020	\$0	\$559,000	-\$559,000	-\$1,723,000
Year -2	2021	\$0	\$407,000	-\$407,000	-\$2,129,000
Year -1	2022	\$0	\$395,000	-\$395,000	-\$2,524,000
Year 0	2023	\$0	\$256,000	-\$256,000	-\$2,780,000
Year 1	2024	\$2,813,000	\$248,000	\$2,565,000	-\$215,000
Year 2	2025	\$2,900,000	\$241,000	\$2,659,000	\$2,444,000
Year 3	2026	\$2,983,000	\$234,000	\$2,749,000	\$5,193,000
Year 4	2027	\$3,063,000	\$227,000	\$2,836,000	\$8,029,000
Year 5	2028	\$3,139,000	\$221,000	\$2,918,000	\$10,947,000
Year 6	2029	\$3,212,000	\$214,000	\$2,998,000	\$13,945,000
Year 7	2030	\$3,281,000	\$208,000	\$3,073,000	\$17,018,000
Year 8	2031	\$3,347,000	\$202,000	\$3,145,000	\$20,163,000
Year 9	2032	\$3,410,000	\$196,000	\$3,214,000	\$23,377,000
Year 10	2033	\$3,469,000	\$190,000	\$3,279,000	\$26,656,000
Year 11	2034	\$3,525,000	\$185,000	\$3,341,000	\$29,997,000
Year 12	2035	\$3,578,000	\$179,000	\$3,399,000	\$33,396,000
Year 13	2036	\$3,628,000	\$174,000	\$3,454,000	\$36,850,000
Year 14	2037	\$3,675,000	\$169,000	\$3,506,000	\$40,356,000
Year 15	2038	\$3,719,000	\$164,000	\$3,554,000	\$43,910,000
Year 16	2039	\$3,759,000	\$159,000	\$3,600,000	\$47,510,000
Year 17	2040	\$3,797,000	\$155,000	\$3,642,000	\$51,153,000
Year 18	2041	\$3,832,000	\$150,000	\$3,682,000	\$54,835,000
Year 19	2042	\$3,864,000	\$146,000	\$3,718,000	\$58,553,000
Year 20	2043	\$3,893,000	\$142,000	\$3,752,000	\$62,305,000
				INTERNAL RATE OF RETURN	36.64%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$62,300,000
				BENEFIT - COST RATIO	10.5

Table 71: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$412,000	-\$412,000	-\$412,000
Year -4	2019	\$0	\$642,000	-\$642,000	-\$1,054,000
Year -3	2020	\$0	\$480,000	-\$480,000	-\$1,533,000
Year -2	2021	\$0	\$336,000	-\$336,000	-\$1,870,000
Year -1	2022	\$0	\$314,000	-\$314,000	-\$2,184,000
Year 0	2023	\$0	\$196,000	-\$196,000	-\$2,380,000
Year 1	2024	\$2,074,000	\$183,000	\$1,891,000	-\$489,000
Year 2	2025	\$2,058,000	\$171,000	\$1,887,000	\$1,399,000
Year 3	2026	\$2,038,000	\$160,000	\$1,878,000	\$3,277,000
Year 4	2027	\$2,014,000	\$149,000	\$1,865,000	\$5,142,000
Year 5	2028	\$1,987,000	\$140,000	\$1,848,000	\$6,989,000
Year 6	2029	\$1,957,000	\$130,000	\$1,827,000	\$8,816,000
Year 7	2030	\$1,925,000	\$122,000	\$1,803,000	\$10,619,000
Year 8	2031	\$1,890,000	\$114,000	\$1,776,000	\$12,395,000
Year 9	2032	\$1,853,000	\$107,000	\$1,747,000	\$14,142,000
Year 10	2033	\$1,815,000	\$100,000	\$1,716,000	\$15,857,000
Year 11	2034	\$1,776,000	\$93,000	\$1,683,000	\$17,540,000
Year 12	2035	\$1,735,000	\$87,000	\$1,648,000	\$19,188,000
Year 13	2036	\$1,693,000	\$81,000	\$1,612,000	\$20,800,000
Year 14	2037	\$1,651,000	\$76,000	\$1,575,000	\$22,375,000
Year 15	2038	\$1,608,000	\$71,000	\$1,537,000	\$23,913,000
Year 16	2039	\$1,565,000	\$66,000	\$1,499,000	\$25,411,000
Year 17	2040	\$1,522,000	\$62,000	\$1,460,000	\$26,871,000
Year 18	2041	\$1,478,000	\$58,000	\$1,420,000	\$28,292,000
Year 19	2042	\$1,435,000	\$54,000	\$1,381,000	\$29,672,000
Year 20	2043	\$1,392,000	\$51,000	\$1,341,000	\$31,014,000
INTERNAL RATE OF RETURN					31.53%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$31,010,000
BENEFIT - COST RATIO					8.0

Appendix N: Montclair

Table 72: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$271,511	\$0	\$0	\$271,511
Year -3	2019	\$362,015	\$0	\$0	\$362,015
Year -2	2020	\$724,030	\$0	\$0	\$724,030
Year -1	2021	\$271,511	\$0	\$0	\$271,511
Year 0	2022	\$181,008	\$0	\$0	\$181,008
Year 1	2023	\$0	\$181,008	\$0	\$181,008
Year 2	2024	\$0	\$181,008	\$0	\$181,008
Year 3	2025	\$0	\$181,008	\$0	\$181,008
Year 4	2026	\$0	\$181,008	\$0	\$181,008
Year 5	2027	\$0	\$181,008	\$0	\$181,008
Year 6	2028	\$0	\$181,008	\$0	\$181,008
Year 7	2029	\$0	\$181,008	\$0	\$181,008
Year 8	2030	\$0	\$181,008	\$0	\$181,008
Year 9	2031	\$0	\$181,008	\$0	\$181,008
Year 10	2032	\$0	\$181,008	\$0	\$181,008
Year 11	2033	\$0	\$181,008	\$0	\$181,008
Year 12	2034	\$0	\$181,008	\$0	\$181,008
Year 13	2035	\$0	\$181,008	\$0	\$181,008
Year 14	2036	\$0	\$181,008	\$0	\$181,008
Year 15	2037	\$0	\$181,008	\$0	\$181,008
Year 16	2038	\$0	\$181,008	\$0	\$181,008
Year 17	2039	\$0	\$181,008	\$0	\$181,008
Year 18	2040	\$0	\$181,008	\$0	\$181,008
Year 19	2041	\$0	\$181,008	\$0	\$181,008
Year 20	2042	\$0	\$181,008	\$0	\$181,008
	AVERAGE	\$67,000	\$134,000	\$0	\$201,000
	TOTAL	\$1,810,075	\$3,620,160	\$0	\$5,430,235

Table 73: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	2,528,000	1,453,000	1,342,000
Year -5	2017	2,569,000	1,476,000	1,363,000
Year -4	2018	2,610,000	1,499,000	1,385,000
Year -3	2019	2,651,000	1,522,000	1,406,000
Year -2	2020	2,692,000	1,545,000	1,427,000
Year -1	2021	2,733,000	1,568,000	1,448,000
Year 0	2022	2,774,000	1,592,000	1,469,000
Year 1	2023	3,262,000	1,891,000	1,683,000
Year 2	2024	3,761,000	2,197,000	1,902,000
Year 3	2025	4,272,000	2,511,000	2,125,000
Year 4	2026	4,795,000	2,832,000	2,354,000
Year 5	2027	5,329,000	3,160,000	2,588,000
Year 6	2028	5,874,000	3,496,000	2,827,000
Year 7	2029	6,431,000	3,838,000	3,071,000
Year 8	2030	7,000,000	4,188,000	3,320,000
Year 9	2031	7,580,000	4,545,000	3,573,000
Year 10	2032	8,172,000	4,909,000	3,832,000
Year 11	2033	8,775,000	5,281,000	4,096,000
Year 12	2034	9,390,000	5,659,000	4,365,000
Year 13	2035	10,016,000	6,045,000	4,639,000
Year 14	2036	10,654,000	6,438,000	4,918,000
Year 15	2037	11,303,000	6,838,000	5,201,000
Year 16	2038	11,964,000	7,246,000	5,490,000
Year 17	2039	12,637,000	7,660,000	5,784,000
Year 18	2040	13,321,000	8,082,000	6,083,000
Year 19	2041	14,016,000	8,511,000	6,387,000
Year 20	2042	14,723,000	8,947,000	6,696,000
	AVERAGE	7,105,000	4,257,000	3,362,000
	TOTAL	191,832,000	114,929,000	90,774,000

Table 74: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$85,000	\$259,000	\$1,148,000	\$559,000	\$243,000	\$2,294,000
Year 2	2024	\$96,000	\$260,000	\$1,297,000	\$631,000	\$275,000	\$2,560,000
Year 3	2025	\$108,000	\$262,000	\$1,450,000	\$706,000	\$307,000	\$2,833,000
Year 4	2026	\$119,000	\$264,000	\$1,606,000	\$782,000	\$341,000	\$3,111,000
Year 5	2027	\$131,000	\$265,000	\$1,765,000	\$859,000	\$374,000	\$3,395,000
Year 6	2028	\$143,000	\$266,000	\$1,928,000	\$939,000	\$409,000	\$3,685,000
Year 7	2029	\$156,000	\$267,000	\$2,094,000	\$1,019,000	\$444,000	\$3,981,000
Year 8	2030	\$168,000	\$268,000	\$2,264,000	\$1,102,000	\$480,000	\$4,283,000
Year 9	2031	\$181,000	\$269,000	\$2,437,000	\$1,186,000	\$517,000	\$4,591,000
Year 10	2032	\$194,000	\$269,000	\$2,614,000	\$1,272,000	\$554,000	\$4,904,000
Year 11	2033	\$208,000	\$270,000	\$2,794,000	\$1,360,000	\$593,000	\$5,224,000
Year 12	2034	\$221,000	\$270,000	\$2,977,000	\$1,449,000	\$631,000	\$5,549,000
Year 13	2035	\$235,000	\$270,000	\$3,164,000	\$1,540,000	\$671,000	\$5,880,000
Year 14	2036	\$249,000	\$270,000	\$3,354,000	\$1,633,000	\$711,000	\$6,217,000
Year 15	2037	\$264,000	\$270,000	\$3,548,000	\$1,727,000	\$753,000	\$6,560,000
Year 16	2038	\$279,000	\$269,000	\$3,740,000	\$1,823,000	\$794,000	\$6,909,000
Year 17	2039	\$293,000	\$269,000	\$3,945,000	\$1,920,000	\$837,000	\$7,264,000
Year 18	2040	\$309,000	\$268,000	\$4,149,000	\$2,019,000	\$880,000	\$7,625,000
Year 19	2041	\$324,000	\$267,000	\$4,356,000	\$2,120,000	\$924,000	\$7,991,000
Year 20	2042	\$340,000	\$266,000	\$4,567,000	\$2,223,000	\$969,000	\$8,364,000
	AVERAGE	\$152,000	\$198,000	\$2,044,000	\$995,000	\$434,000	\$3,823,000
	TOTAL	\$4,103,000	\$5,338,000	\$55,197,000	\$26,869,000	\$11,707,000	\$103,220,000

Table 75: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$256,000	-\$256,000	-\$256,000
Year -3	2019	\$0	\$331,000	-\$331,000	-\$587,000
Year -2	2020	\$0	\$643,000	-\$643,000	-\$1,231,000
Year -1	2021	\$0	\$234,000	-\$234,000	-\$1,465,000
Year 0	2022	\$0	\$152,000	-\$152,000	-\$1,616,000
Year 1	2023	\$1,865,000	\$147,000	\$1,718,000	\$102,000
Year 2	2024	\$2,021,000	\$143,000	\$1,878,000	\$1,980,000
Year 3	2025	\$2,171,000	\$139,000	\$2,032,000	\$4,012,000
Year 4	2026	\$2,315,000	\$135,000	\$2,180,000	\$6,192,000
Year 5	2027	\$2,453,000	\$131,000	\$2,322,000	\$8,514,000
Year 6	2028	\$2,585,000	\$127,000	\$2,458,000	\$10,972,000
Year 7	2029	\$2,711,000	\$123,000	\$2,588,000	\$13,560,000
Year 8	2030	\$2,831,000	\$120,000	\$2,712,000	\$16,271,000
Year 9	2031	\$2,947,000	\$116,000	\$2,830,000	\$19,102,000
Year 10	2032	\$3,056,000	\$113,000	\$2,943,000	\$22,045,000
Year 11	2033	\$3,160,000	\$110,000	\$3,051,000	\$25,096,000
Year 12	2034	\$3,259,000	\$106,000	\$3,153,000	\$28,249,000
Year 13	2035	\$3,353,000	\$103,000	\$3,250,000	\$31,499,000
Year 14	2036	\$3,442,000	\$100,000	\$3,342,000	\$34,841,000
Year 15	2037	\$3,527,000	\$97,000	\$3,429,000	\$38,271,000
Year 16	2038	\$3,606,000	\$94,000	\$3,511,000	\$41,782,000
Year 17	2039	\$3,681,000	\$92,000	\$3,589,000	\$45,371,000
Year 18	2040	\$3,751,000	\$89,000	\$3,662,000	\$49,033,000
Year 19	2041	\$3,817,000	\$86,000	\$3,730,000	\$52,763,000
Year 20	2042	\$3,878,000	\$84,000	\$3,794,000	\$56,557,000
INTERNAL RATE OF RETURN					48.04%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$56,560,000
BENEFIT - COST RATIO					15.6

Table 76: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$237,000	-\$237,000	-\$237,000
Year -3	2019	\$0	\$296,000	-\$296,000	-\$533,000
Year -2	2020	\$0	\$552,000	-\$552,000	-\$1,085,000
Year -1	2021	\$0	\$194,000	-\$194,000	-\$1,279,000
Year 0	2022	\$0	\$121,000	-\$121,000	-\$1,399,000
Year 1	2023	\$1,429,000	\$113,000	\$1,316,000	-\$83,000
Year 2	2024	\$1,490,000	\$105,000	\$1,385,000	\$1,301,000
Year 3	2025	\$1,541,000	\$98,000	\$1,442,000	\$2,744,000
Year 4	2026	\$1,581,000	\$92,000	\$1,489,000	\$4,233,000
Year 5	2027	\$1,613,000	\$86,000	\$1,527,000	\$5,760,000
Year 6	2028	\$1,636,000	\$80,000	\$1,556,000	\$7,316,000
Year 7	2029	\$1,652,000	\$75,000	\$1,577,000	\$8,893,000
Year 8	2030	\$1,661,000	\$70,000	\$1,591,000	\$10,484,000
Year 9	2031	\$1,664,000	\$66,000	\$1,598,000	\$12,082,000
Year 10	2032	\$1,661,000	\$61,000	\$1,600,000	\$13,682,000
Year 11	2033	\$1,654,000	\$57,000	\$1,596,000	\$15,278,000
Year 12	2034	\$1,642,000	\$54,000	\$1,588,000	\$16,866,000
Year 13	2035	\$1,626,000	\$50,000	\$1,576,000	\$18,442,000
Year 14	2036	\$1,607,000	\$47,000	\$1,560,000	\$20,002,000
Year 15	2037	\$1,584,000	\$44,000	\$1,541,000	\$21,543,000
Year 16	2038	\$1,560,000	\$41,000	\$1,519,000	\$23,061,000
Year 17	2039	\$1,532,000	\$38,000	\$1,494,000	\$24,556,000
Year 18	2040	\$1,503,000	\$36,000	\$1,468,000	\$26,023,000
Year 19	2041	\$1,472,000	\$33,000	\$1,439,000	\$27,462,000
Year 20	2042	\$1,440,000	\$31,000	\$1,409,000	\$28,871,000
INTERNAL RATE OF RETURN					42.51%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$28,870,000
BENEFIT - COST RATIO					11.8

Appendix O: Needles

Table 77: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$551,498	\$0	\$0	\$551,498
Year -4	2019	\$919,164	\$0	\$0	\$919,164
Year -3	2020	\$735,331	\$0	\$0	\$735,331
Year -2	2021	\$551,498	\$0	\$0	\$551,498
Year -1	2022	\$551,498	\$0	\$0	\$551,498
Year 0	2023	\$367,666	\$0	\$0	\$367,666
Year 1	2024	\$0	\$367,666	\$0	\$367,666
Year 2	2025	\$0	\$367,666	\$0	\$367,666
Year 3	2026	\$0	\$367,666	\$0	\$367,666
Year 4	2027	\$0	\$367,666	\$0	\$367,666
Year 5	2028	\$0	\$367,666	\$0	\$367,666
Year 6	2029	\$0	\$367,666	\$0	\$367,666
Year 7	2030	\$0	\$367,666	\$0	\$367,666
Year 8	2031	\$0	\$367,666	\$0	\$367,666
Year 9	2032	\$0	\$367,666	\$0	\$367,666
Year 10	2033	\$0	\$367,666	\$0	\$367,666
Year 11	2034	\$0	\$367,666	\$0	\$367,666
Year 12	2035	\$0	\$367,666	\$0	\$367,666
Year 13	2036	\$0	\$367,666	\$0	\$367,666
Year 14	2037	\$0	\$367,666	\$0	\$367,666
Year 15	2038	\$0	\$367,666	\$0	\$367,666
Year 16	2039	\$0	\$367,666	\$0	\$367,666
Year 17	2040	\$0	\$367,666	\$0.00	\$367,666
Year 18	2041	\$0	\$367,666	\$0.00	\$367,666
Year 19	2042	\$0	\$367,666	\$0.00	\$367,666
Year 20	2043	\$0	\$367,666	\$0.00	\$367,666
	AVERAGE	\$131,000	\$263,000	\$0	\$394,000
	TOTAL	\$3,676,655	\$7,353,320	\$0	\$11,029,975

Table 78: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	662,000	391,000	285,000
Year -6	2017	692,000	409,000	298,000
Year -5	2018	723,000	427,000	311,000
Year -4	2019	753,000	445,000	325,000
Year -3	2020	784,000	463,000	338,000
Year -2	2021	814,000	481,000	351,000
Year -1	2022	844,000	499,000	365,000
Year 0	2023	875,000	517,000	378,000
Year 1	2024	941,000	556,000	407,000
Year 2	2025	1,009,000	597,000	438,000
Year 3	2026	1,080,000	639,000	470,000
Year 4	2027	1,154,000	683,000	502,000
Year 5	2028	1,230,000	728,000	536,000
Year 6	2029	1,308,000	775,000	572,000
Year 7	2030	1,389,000	823,000	608,000
Year 8	2031	1,473,000	873,000	645,000
Year 9	2032	1,559,000	924,000	684,000
Year 10	2033	1,648,000	977,000	724,000
Year 11	2034	1,739,000	1,031,000	764,000
Year 12	2035	1,833,000	1,087,000	806,000
Year 13	2036	1,929,000	1,144,000	849,000
Year 14	2037	2,028,000	1,203,000	894,000
Year 15	2038	2,129,000	1,263,000	939,000
Year 16	2039	2,233,000	1,325,000	986,000
Year 17	2040	2,339,000	1,388,000	1,033,000
Year 18	2041	2,448,000	1,453,000	1,082,000
Year 19	2042	2,560,000	1,519,000	1,132,000
Year 20	2043	2,674,000	1,587,000	1,183,000
	AVERAGE	1,459,000	865,000	639,000
	TOTAL	40,850,000	24,207,000	17,905,000

Table 79: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$21,000	\$20,000	\$278,000	\$135,000	\$59,000	\$512,000
Year 2	2025	\$22,000	\$21,000	\$299,000	\$145,000	\$63,000	\$550,000
Year 3	2026	\$24,000	\$22,000	\$320,000	\$156,000	\$68,000	\$590,000
Year 4	2027	\$25,000	\$23,000	\$343,000	\$167,000	\$73,000	\$631,000
Year 5	2028	\$27,000	\$24,000	\$366,000	\$178,000	\$78,000	\$673,000
Year 6	2029	\$29,000	\$25,000	\$390,000	\$190,000	\$83,000	\$717,000
Year 7	2030	\$31,000	\$27,000	\$415,000	\$202,000	\$88,000	\$762,000
Year 8	2031	\$33,000	\$28,000	\$440,000	\$214,000	\$93,000	\$809,000
Year 9	2032	\$35,000	\$30,000	\$466,000	\$227,000	\$99,000	\$857,000
Year 10	2033	\$37,000	\$31,000	\$493,000	\$240,000	\$105,000	\$906,000
Year 11	2034	\$39,000	\$32,000	\$521,000	\$254,000	\$111,000	\$957,000
Year 12	2035	\$41,000	\$34,000	\$550,000	\$268,000	\$117,000	\$1,009,000
Year 13	2036	\$43,000	\$36,000	\$579,000	\$282,000	\$123,000	\$1,063,000
Year 14	2037	\$45,000	\$37,000	\$610,000	\$297,000	\$129,000	\$1,118,000
Year 15	2038	\$48,000	\$39,000	\$640,000	\$312,000	\$136,000	\$1,175,000
Year 16	2039	\$50,000	\$41,000	\$672,000	\$327,000	\$143,000	\$1,233,000
Year 17	2040	\$52,000	\$42,000	\$705,000	\$343,000	\$149,000	\$1,292,000
Year 18	2041	\$55,000	\$44,000	\$738,000	\$359,000	\$157,000	\$1,353,000
Year 19	2042	\$57,000	\$46,000	\$772,000	\$376,000	\$164,000	\$1,415,000
Year 20	2043	\$60,000	\$48,000	\$807,000	\$393,000	\$171,000	\$1,479,000
AVERAGE		\$28,000	\$23,000	\$372,000	\$181,000	\$79,000	\$682,000
TOTAL		\$774,000	\$650,000	\$10,404,000	\$5,065,000	\$2,209,000	\$19,101,000

Table 80: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$520,000	-\$520,000	-\$520,000
Year -4	2019	\$0	\$841,000	-\$841,000	-\$1,361,000
Year -3	2020	\$0	\$653,000	-\$653,000	-\$2,014,000
Year -2	2021	\$0	\$476,000	-\$476,000	-\$2,490,000
Year -1	2022	\$0	\$462,000	-\$462,000	-\$2,952,000
Year 0	2023	\$0	\$299,000	-\$299,000	-\$3,251,000
Year 1	2024	\$404,000	\$290,000	\$114,000	-\$3,137,000
Year 2	2025	\$422,000	\$282,000	\$140,000	-\$2,997,000
Year 3	2026	\$439,000	\$274,000	\$165,000	-\$2,831,000
Year 4	2027	\$456,000	\$266,000	\$190,000	-\$2,641,000
Year 5	2028	\$472,000	\$258,000	\$214,000	-\$2,427,000
Year 6	2029	\$488,000	\$250,000	\$238,000	-\$2,190,000
Year 7	2030	\$504,000	\$243,000	\$261,000	-\$1,929,000
Year 8	2031	\$519,000	\$236,000	\$283,000	-\$1,646,000
Year 9	2032	\$534,000	\$229,000	\$305,000	-\$1,341,000
Year 10	2033	\$548,000	\$222,000	\$326,000	-\$1,015,000
Year 11	2034	\$562,000	\$216,000	\$346,000	-\$669,000
Year 12	2035	\$576,000	\$210,000	\$366,000	-\$303,000
Year 13	2036	\$589,000	\$204,000	\$385,000	\$81,000
Year 14	2037	\$601,000	\$198,000	\$403,000	\$485,000
Year 15	2038	\$613,000	\$192,000	\$421,000	\$906,000
Year 16	2039	\$625,000	\$186,000	\$438,000	\$1,344,000
Year 17	2040	\$636,000	\$181,000	\$455,000	\$1,799,000
Year 18	2041	\$646,000	\$176,000	\$471,000	\$2,270,000
Year 19	2042	\$656,000	\$170,000	\$486,000	\$2,755,000
Year 20	2043	\$666,000	\$166,000	\$500,000	\$3,256,000
				INTERNAL RATE OF RETURN	4.79%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$3,260,000
				BENEFIT - COST RATIO	1.4

Table 81: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$482,000	-\$482,000	-\$482,000
Year -4	2019	\$0	\$750,000	-\$750,000	-\$1,232,000
Year -3	2020	\$0	\$561,000	-\$561,000	-\$1,793,000
Year -2	2021	\$0	\$393,000	-\$393,000	-\$2,186,000
Year -1	2022	\$0	\$367,000	-\$367,000	-\$2,554,000
Year 0	2023	\$0	\$229,000	-\$229,000	-\$2,783,000
Year 1	2024	\$298,000	\$214,000	\$84,000	-\$2,698,000
Year 2	2025	\$299,000	\$200,000	\$99,000	-\$2,599,000
Year 3	2026	\$300,000	\$187,000	\$113,000	-\$2,486,000
Year 4	2027	\$300,000	\$175,000	\$125,000	-\$2,361,000
Year 5	2028	\$299,000	\$163,000	\$136,000	-\$2,226,000
Year 6	2029	\$297,000	\$153,000	\$145,000	-\$2,081,000
Year 7	2030	\$295,000	\$143,000	\$153,000	-\$1,928,000
Year 8	2031	\$293,000	\$133,000	\$160,000	-\$1,768,000
Year 9	2032	\$290,000	\$125,000	\$166,000	-\$1,602,000
Year 10	2033	\$287,000	\$116,000	\$170,000	-\$1,432,000
Year 11	2034	\$283,000	\$109,000	\$174,000	-\$1,258,000
Year 12	2035	\$279,000	\$102,000	\$177,000	-\$1,080,000
Year 13	2036	\$275,000	\$95,000	\$180,000	-\$901,000
Year 14	2037	\$270,000	\$89,000	\$181,000	-\$719,000
Year 15	2038	\$265,000	\$83,000	\$182,000	-\$537,000
Year 16	2039	\$260,000	\$78,000	\$182,000	-\$355,000
Year 17	2040	\$255,000	\$72,000	\$182,000	-\$173,000
Year 18	2041	\$249,000	\$68,000	\$182,000	\$9,000
Year 19	2042	\$244,000	\$63,000	\$180,000	\$189,000
Year 20	2043	\$238,000	\$59,000	\$179,000	\$368,000
				INTERNAL RATE OF RETURN	0.87%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$370,000
				BENEFIT - COST RATIO	1.1

Appendix P: Ontario

Table 82: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$299,396	\$0	\$0	\$299,396
Year -3	2019	\$399,195	\$0	\$0	\$399,195
Year -2	2020	\$798,390	\$0	\$0	\$798,390
Year -1	2021	\$299,396	\$0	\$0	\$299,396
Year 0	2022	\$199,597	\$0	\$0	\$199,597
Year 1	2023	\$0	\$199,597	\$0	\$199,597
Year 2	2024	\$0	\$199,597	\$0	\$199,597
Year 3	2025	\$0	\$199,597	\$0	\$199,597
Year 4	2026	\$0	\$199,597	\$0	\$199,597
Year 5	2027	\$0	\$199,597	\$0	\$199,597
Year 6	2028	\$0	\$199,597	\$0	\$199,597
Year 7	2029	\$0	\$199,597	\$0	\$199,597
Year 8	2030	\$0	\$199,597	\$0	\$199,597
Year 9	2031	\$0	\$199,597	\$0	\$199,597
Year 10	2032	\$0	\$199,597	\$0	\$199,597
Year 11	2033	\$0	\$199,597	\$0	\$199,597
Year 12	2034	\$0	\$199,597	\$0	\$199,597
Year 13	2035	\$0	\$199,597	\$0	\$199,597
Year 14	2036	\$0	\$199,597	\$0	\$199,597
Year 15	2037	\$0	\$199,597	\$0	\$199,597
Year 16	2038	\$0	\$199,597	\$0	\$199,597
Year 17	2039	\$0	\$199,597	\$0	\$199,597
Year 18	2040	\$0	\$199,597	\$0	\$199,597
Year 19	2041	\$0	\$199,597	\$0	\$199,597
Year 20	2042	\$0	\$199,597	\$0	\$199,597
	AVERAGE	\$74,000	\$148,000	\$0	\$222,000
	TOTAL	\$1,995,974	\$3,991,940	\$0	\$5,987,914

Table 83: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	9,520,000	5,441,000	4,863,000
Year -5	2017	10,090,000	5,770,000	5,159,000
Year -4	2018	10,660,000	6,099,000	5,456,000
Year -3	2019	11,230,000	6,428,000	5,752,000
Year -2	2020	11,800,000	6,757,000	6,048,000
Year -1	2021	12,370,000	7,086,000	6,344,000
Year 0	2022	12,940,000	7,416,000	6,640,000
Year 1	2023	16,305,000	9,448,000	8,018,000
Year 2	2024	19,918,000	11,630,000	9,492,000
Year 3	2025	23,776,000	13,963,000	11,061,000
Year 4	2026	27,882,000	16,446,000	12,725,000
Year 5	2027	32,235,000	19,078,000	14,485,000
Year 6	2028	36,834,000	21,861,000	16,341,000
Year 7	2029	41,680,000	24,794,000	18,291,000
Year 8	2030	46,774,000	27,877,000	20,338,000
Year 9	2031	52,113,000	31,110,000	22,480,000
Year 10	2032	57,700,000	34,493,000	24,717,000
Year 11	2033	63,534,000	38,026,000	27,050,000
Year 12	2034	69,614,000	41,709,000	29,478,000
Year 13	2035	75,941,000	45,542,000	32,002,000
Year 14	2036	82,515,000	49,526,000	34,621,000
Year 15	2037	89,336,000	53,659,000	37,336,000
Year 16	2038	96,404,000	57,943,000	40,146,000
Year 17	2039	103,718,000	62,376,000	43,051,000
Year 18	2040	111,280,000	66,960,000	46,052,000
Year 19	2041	119,088,000	71,694,000	49,149,000
Year 20	2042	127,143,000	76,577,000	52,341,000
	AVERAGE	50,830,000	30,360,000	21,831,000
	TOTAL	1,372,400,000	819,709,000	589,436,000

Table 84: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$407,000	\$966,000	\$5,469,000	\$2,662,000	\$1,160,000	\$10,664,000
Year 2	2024	\$482,000	\$950,000	\$6,474,000	\$3,151,000	\$1,373,000	\$12,430,000
Year 3	2025	\$561,000	\$931,000	\$7,544,000	\$3,672,000	\$1,600,000	\$14,308,000
Year 4	2026	\$646,000	\$907,000	\$8,679,000	\$4,225,000	\$1,841,000	\$16,297,000
Year 5	2027	\$735,000	\$879,000	\$9,880,000	\$4,809,000	\$2,096,000	\$18,398,000
Year 6	2028	\$829,000	\$848,000	\$11,145,000	\$5,425,000	\$2,364,000	\$20,611,000
Year 7	2029	\$928,000	\$813,000	\$12,476,000	\$6,073,000	\$2,646,000	\$22,935,000
Year 8	2030	\$1,032,000	\$774,000	\$13,871,000	\$6,752,000	\$2,942,000	\$25,371,000
Year 9	2031	\$1,140,000	\$731,000	\$15,332,000	\$7,463,000	\$3,252,000	\$27,918,000
Year 10	2032	\$1,254,000	\$684,000	\$16,858,000	\$8,206,000	\$3,576,000	\$30,577,000
Year 11	2033	\$1,372,000	\$633,000	\$18,449,000	\$8,980,000	\$3,913,000	\$33,348,000
Year 12	2034	\$1,496,000	\$578,000	\$20,105,000	\$9,786,000	\$4,265,000	\$36,230,000
Year 13	2035	\$1,624,000	\$519,000	\$21,827,000	\$10,624,000	\$4,630,000	\$39,224,000
Year 14	2036	\$1,756,000	\$457,000	\$23,613,000	\$11,494,000	\$5,009,000	\$42,329,000
Year 15	2037	\$1,894,000	\$390,000	\$25,465,000	\$12,395,000	\$5,402,000	\$45,546,000
Year 16	2038	\$2,037,000	\$320,000	\$27,380,000	\$13,328,000	\$5,808,000	\$48,874,000
Year 17	2039	\$2,184,000	\$246,000	\$29,363,000	\$14,293,000	\$6,228,000	\$52,314,000
Year 18	2040	\$2,336,000	\$168,000	\$31,410,000	\$15,289,000	\$6,663,000	\$55,866,000
Year 19	2041	\$2,493,000	\$86,000	\$33,522,000	\$16,317,000	\$7,111,000	\$59,529,000
Year 20	2042	\$2,655,000	\$0	\$35,699,000	\$17,377,000	\$7,572,000	\$63,303,000
AVERAGE		\$1,032,000	\$440,000	\$13,873,000	\$6,753,000	\$2,943,000	\$25,040,000
TOTAL		\$27,861,000	\$11,880,000	\$374,561,000	\$182,321,000	\$79,451,000	\$676,072,000

Table 85: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$282,000	-\$282,000	-\$282,000
Year -3	2019	\$0	\$365,000	-\$365,000	-\$648,000
Year -2	2020	\$0	\$709,000	-\$709,000	-\$1,357,000
Year -1	2021	\$0	\$258,000	-\$258,000	-\$1,615,000
Year 0	2022	\$0	\$167,000	-\$167,000	-\$1,782,000
Year 1	2023	\$8,670,000	\$162,000	\$8,508,000	\$6,726,000
Year 2	2024	\$9,812,000	\$158,000	\$9,655,000	\$16,381,000
Year 3	2025	\$10,966,000	\$153,000	\$10,813,000	\$27,193,000
Year 4	2026	\$12,127,000	\$149,000	\$11,978,000	\$39,172,000
Year 5	2027	\$13,291,000	\$144,000	\$13,147,000	\$52,319,000
Year 6	2028	\$14,456,000	\$140,000	\$14,316,000	\$66,635,000
Year 7	2029	\$15,618,000	\$136,000	\$15,482,000	\$82,117,000
Year 8	2030	\$16,773,000	\$132,000	\$16,641,000	\$98,758,000
Year 9	2031	\$17,920,000	\$128,000	\$17,792,000	\$116,550,000
Year 10	2032	\$19,055,000	\$124,000	\$18,930,000	\$135,481,000
Year 11	2033	\$20,176,000	\$121,000	\$20,055,000	\$155,536,000
Year 12	2034	\$21,281,000	\$117,000	\$21,164,000	\$176,700,000
Year 13	2035	\$22,369,000	\$114,000	\$22,255,000	\$198,955,000
Year 14	2036	\$23,436,000	\$111,000	\$23,326,000	\$222,281,000
Year 15	2037	\$24,483,000	\$107,000	\$24,376,000	\$246,657,000
Year 16	2038	\$25,507,000	\$104,000	\$25,403,000	\$272,059,000
Year 17	2039	\$26,507,000	\$101,000	\$26,406,000	\$298,465,000
Year 18	2040	\$27,482,000	\$98,000	\$27,384,000	\$325,849,000
Year 19	2041	\$28,431,000	\$95,000	\$28,336,000	\$354,185,000
Year 20	2042	\$29,353,000	\$93,000	\$29,261,000	\$383,446,000
INTERNAL RATE OF RETURN					95.28%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$383,450,000
BENEFIT - COST RATIO					90.8

Table 86: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$262,000	-\$262,000	-\$262,000
Year -3	2019	\$0	\$326,000	-\$326,000	-\$587,000
Year -2	2020	\$0	\$609,000	-\$609,000	-\$1,196,000
Year -1	2021	\$0	\$213,000	-\$213,000	-\$1,410,000
Year 0	2022	\$0	\$133,000	-\$133,000	-\$1,543,000
Year 1	2023	\$6,641,000	\$124,000	\$6,516,000	\$4,974,000
Year 2	2024	\$7,234,000	\$116,000	\$7,118,000	\$12,092,000
Year 3	2025	\$7,783,000	\$109,000	\$7,674,000	\$19,766,000
Year 4	2026	\$8,285,000	\$101,000	\$8,183,000	\$27,949,000
Year 5	2027	\$8,741,000	\$95,000	\$8,646,000	\$36,595,000
Year 6	2028	\$9,152,000	\$89,000	\$9,063,000	\$45,658,000
Year 7	2029	\$9,517,000	\$83,000	\$9,435,000	\$55,093,000
Year 8	2030	\$9,839,000	\$77,000	\$9,762,000	\$64,855,000
Year 9	2031	\$10,119,000	\$72,000	\$10,047,000	\$74,901,000
Year 10	2032	\$10,358,000	\$68,000	\$10,290,000	\$85,191,000
Year 11	2033	\$10,557,000	\$63,000	\$10,494,000	\$95,685,000
Year 12	2034	\$10,719,000	\$59,000	\$10,660,000	\$106,345,000
Year 13	2035	\$10,846,000	\$55,000	\$10,790,000	\$117,136,000
Year 14	2036	\$10,939,000	\$52,000	\$10,887,000	\$128,023,000
Year 15	2037	\$11,000,000	\$48,000	\$10,952,000	\$138,974,000
Year 16	2038	\$11,032,000	\$45,000	\$10,986,000	\$149,961,000
Year 17	2039	\$11,035,000	\$42,000	\$10,993,000	\$160,954,000
Year 18	2040	\$11,014,000	\$39,000	\$10,974,000	\$171,929,000
Year 19	2041	\$10,968,000	\$37,000	\$10,931,000	\$182,860,000
Year 20	2042	\$10,901,000	\$34,000	\$10,866,000	\$193,726,000
				INTERNAL RATE OF RETURN	87.98%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$193,730,000
				BENEFIT - COST RATIO	66.6

Appendix Q: Rancho Cucamonga

Table 87: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$327,394	\$0	\$0	\$327,394
Year -1	2019	\$245,546	\$0	\$0	\$245,546
Year 0	2020	\$245,546	\$0	\$0	\$245,546
Year 1	2021	\$0	\$81,849	\$0	\$81,849
Year 2	2022	\$0	\$81,849	\$0	\$81,849
Year 3	2023	\$0	\$81,849	\$0	\$81,849
Year 4	2024	\$0	\$81,849	\$0	\$81,849
Year 5	2025	\$0	\$81,849	\$0	\$81,849
Year 6	2026	\$0	\$81,849	\$0	\$81,849
Year 7	2027	\$0	\$81,849	\$0	\$81,849
Year 8	2028	\$0	\$81,849	\$0	\$81,849
Year 9	2029	\$0	\$81,849	\$0	\$81,849
Year 10	2030	\$0	\$81,849	\$0	\$81,849
Year 11	2031	\$0	\$81,849	\$0	\$81,849
Year 12	2032	\$0	\$81,849	\$0	\$81,849
Year 13	2033	\$0	\$81,849	\$0	\$81,849
Year 14	2034	\$0	\$81,849	\$0	\$81,849
Year 15	2035	\$0	\$81,849	\$0	\$81,849
Year 16	2036	\$0	\$81,849	\$0	\$81,849
Year 17	2037	\$0	\$81,849	\$0	\$81,849
Year 18	2038	\$0	\$81,849	\$0	\$81,849
Year 19	2039	\$0	\$81,849	\$0	\$81,849
Year 20	2040	\$0	\$81,849	\$0	\$81,849
	AVERAGE	\$33,000	\$65,000	\$0	\$98,000
	TOTAL	\$818,486	\$1,636,980	\$0	\$2,455,466

Table 88: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -4	2016	4,759,000	2,735,000	2,834,000
Year -3	2017	4,906,000	2,820,000	2,924,000
Year -2	2018	5,053,000	2,906,000	3,013,000
Year -1	2019	5,200,000	2,991,000	3,102,000
Year 0	2020	5,348,000	3,077,000	3,192,000
Year 1	2021	8,327,000	4,900,000	4,546,000
Year 2	2022	11,469,000	6,822,000	5,973,000
Year 3	2023	14,772,000	8,843,000	7,472,000
Year 4	2024	18,238,000	10,964,000	9,044,000
Year 5	2025	21,866,000	13,184,000	10,688,000
Year 6	2026	25,656,000	15,503,000	12,404,000
Year 7	2027	29,607,000	17,922,000	14,193,000
Year 8	2028	33,721,000	20,440,000	16,054,000
Year 9	2029	37,998,000	23,057,000	17,988,000
Year 10	2030	42,436,000	25,773,000	19,994,000
Year 11	2031	47,036,000	28,589,000	22,072,000
Year 12	2032	51,798,000	31,504,000	24,223,000
Year 13	2033	56,723,000	34,518,000	26,446,000
Year 14	2034	61,809,000	37,632,000	28,741,000
Year 15	2035	67,058,000	40,845,000	31,109,000
Year 16	2036	72,468,000	44,157,000	33,549,000
Year 17	2037	78,041,000	47,568,000	36,062,000
Year 18	2038	83,776,000	51,079,000	38,647,000
Year 19	2039	89,672,000	54,689,000	41,304,000
Year 20	2040	95,731,000	58,399,000	44,034,000
	AVERAGE	38,939,000	23,637,000	18,384,000
	TOTAL	973,468,000	590,917,000	459,608,000

Table 89: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -4	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2021	\$231,000	\$660,000	\$3,101,000	\$1,509,000	\$658,000	\$6,158,000
Year 2	2022	\$303,000	\$701,000	\$4,074,000	\$1,983,000	\$864,000	\$7,925,000
Year 3	2023	\$379,000	\$744,000	\$5,096,000	\$2,481,000	\$1,081,000	\$9,781,000
Year 4	2024	\$459,000	\$788,000	\$6,168,000	\$3,002,000	\$1,308,000	\$11,726,000
Year 5	2025	\$542,000	\$834,000	\$7,290,000	\$3,548,000	\$1,546,000	\$13,761,000
Year 6	2026	\$629,000	\$882,000	\$8,460,000	\$4,118,000	\$1,795,000	\$15,884,000
Year 7	2027	\$720,000	\$932,000	\$9,680,000	\$4,712,000	\$2,053,000	\$18,097,000
Year 8	2028	\$814,000	\$983,000	\$10,950,000	\$5,330,000	\$2,323,000	\$20,399,000
Year 9	2029	\$913,000	\$1,036,000	\$12,268,000	\$5,972,000	\$2,602,000	\$22,791,000
Year 10	2030	\$1,014,000	\$1,090,000	\$13,636,000	\$6,638,000	\$2,893,000	\$25,271,000
Year 11	2031	\$1,120,000	\$1,146,000	\$15,054,000	\$7,328,000	\$3,193,000	\$27,841,000
Year 12	2032	\$1,229,000	\$1,204,000	\$16,521,000	\$8,042,000	\$3,504,000	\$30,500,000
Year 13	2033	\$1,342,000	\$1,263,000	\$18,037,000	\$8,780,000	\$3,826,000	\$33,248,000
Year 14	2034	\$1,458,000	\$1,324,000	\$19,603,000	\$9,542,000	\$4,158,000	\$36,085,000
Year 15	2035	\$1,578,000	\$1,387,000	\$21,218,000	\$10,328,000	\$4,501,000	\$39,011,000
Year 16	2036	\$1,702,000	\$1,451,000	\$22,882,000	\$11,138,000	\$4,854,000	\$42,027,000
Year 17	2037	\$1,830,000	\$1,517,000	\$24,596,000	\$11,972,000	\$5,217,000	\$45,132,000
Year 18	2038	\$1,961,000	\$1,585,000	\$26,360,000	\$12,830,000	\$5,591,000	\$48,326,000
Year 19	2039	\$2,095,000	\$1,654,000	\$28,171,000	\$13,713,000	\$5,976,000	\$51,609,000
Year 20	2040	\$2,234,000	\$1,725,000	\$30,033,000	\$14,619,000	\$6,371,000	\$54,981,000
AVERAGE		\$902,000	\$916,000	\$12,128,000	\$5,903,000	\$2,573,000	\$22,422,000
TOTAL		\$22,553,000	\$22,906,000	\$303,198,000	\$147,585,000	\$64,314,000	\$560,553,000

Table 90: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$309,000	-\$309,000	-\$309,000
Year -1	2019	\$0	\$225,000	-\$225,000	-\$533,000
Year 0	2020	\$0	\$218,000	-\$218,000	-\$751,000
Year 1	2021	\$5,312,000	\$71,000	\$5,241,000	\$4,490,000
Year 2	2022	\$6,637,000	\$69,000	\$6,568,000	\$11,058,000
Year 3	2023	\$7,953,000	\$67,000	\$7,886,000	\$18,945,000
Year 4	2024	\$9,257,000	\$65,000	\$9,192,000	\$28,137,000
Year 5	2025	\$10,546,000	\$63,000	\$10,484,000	\$38,620,000
Year 6	2026	\$11,820,000	\$61,000	\$11,759,000	\$50,379,000
Year 7	2027	\$13,074,000	\$59,000	\$13,015,000	\$63,394,000
Year 8	2028	\$14,308,000	\$57,000	\$14,250,000	\$77,644,000
Year 9	2029	\$15,519,000	\$56,000	\$15,464,000	\$93,108,000
Year 10	2030	\$16,707,000	\$54,000	\$16,653,000	\$109,761,000
Year 11	2031	\$17,870,000	\$53,000	\$17,817,000	\$127,578,000
Year 12	2032	\$19,006,000	\$51,000	\$18,955,000	\$146,534,000
Year 13	2033	\$20,115,000	\$50,000	\$20,066,000	\$166,599,000
Year 14	2034	\$21,196,000	\$48,000	\$21,148,000	\$187,747,000
Year 15	2035	\$22,248,000	\$47,000	\$22,201,000	\$209,948,000
Year 16	2036	\$23,269,000	\$45,000	\$23,224,000	\$233,172,000
Year 17	2037	\$24,260,000	\$44,000	\$24,216,000	\$257,389,000
Year 18	2038	\$25,221,000	\$43,000	\$25,178,000	\$282,567,000
Year 19	2039	\$26,150,000	\$41,000	\$26,108,000	\$308,675,000
Year 20	2040	\$27,047,000	\$40,000	\$27,007,000	\$335,682,000
				INTERNAL RATE OF RETURN	181.32%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$335,680,000
				BENEFIT - COST RATIO	184.1

Table 91: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$286,000	-\$286,000	-\$286,000
Year -1	2019	\$0	\$200,000	-\$200,000	-\$486,000
Year 0	2020	\$0	\$187,000	-\$187,000	-\$674,000
Year 1	2021	\$4,391,000	\$58,000	\$4,332,000	\$3,658,000
Year 2	2022	\$5,281,000	\$55,000	\$5,226,000	\$8,885,000
Year 3	2023	\$6,091,000	\$51,000	\$6,040,000	\$14,925,000
Year 4	2024	\$6,825,000	\$48,000	\$6,777,000	\$21,702,000
Year 5	2025	\$7,485,000	\$45,000	\$7,440,000	\$29,142,000
Year 6	2026	\$8,075,000	\$42,000	\$8,033,000	\$37,176,000
Year 7	2027	\$8,598,000	\$39,000	\$8,559,000	\$45,735,000
Year 8	2028	\$9,058,000	\$36,000	\$9,021,000	\$54,756,000
Year 9	2029	\$9,457,000	\$34,000	\$9,423,000	\$64,179,000
Year 10	2030	\$9,801,000	\$32,000	\$9,769,000	\$73,948,000
Year 11	2031	\$10,091,000	\$30,000	\$10,061,000	\$84,009,000
Year 12	2032	\$10,331,000	\$28,000	\$10,304,000	\$94,313,000
Year 13	2033	\$10,525,000	\$26,000	\$10,499,000	\$104,812,000
Year 14	2034	\$10,676,000	\$24,000	\$10,652,000	\$115,464,000
Year 15	2035	\$10,787,000	\$23,000	\$10,764,000	\$126,228,000
Year 16	2036	\$10,861,000	\$21,000	\$10,839,000	\$137,068,000
Year 17	2037	\$10,900,000	\$20,000	\$10,880,000	\$147,948,000
Year 18	2038	\$10,908,000	\$18,000	\$10,889,000	\$158,837,000
Year 19	2039	\$10,887,000	\$17,000	\$10,869,000	\$169,707,000
Year 20	2040	\$10,839,000	\$16,000	\$10,823,000	\$180,530,000
INTERNAL RATE OF RETURN					170.80%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$180,530,000
BENEFIT - COST RATIO					136.2

Appendix R: Redlands

Table 92: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$164,817	\$0	\$0	\$164,817
Year -3	2019	\$219,756	\$0	\$0	\$219,756
Year -2	2020	\$439,513	\$0	\$0	\$439,513
Year -1	2021	\$164,817	\$0	\$0	\$164,817
Year 0	2022	\$109,878	\$0	\$0	\$109,878
Year 1	2023	\$0	\$109,878	\$0	\$109,878
Year 2	2024	\$0	\$109,878	\$0	\$109,878
Year 3	2025	\$0	\$109,878	\$0	\$109,878
Year 4	2026	\$0	\$109,878	\$0	\$109,878
Year 5	2027	\$0	\$109,878	\$0	\$109,878
Year 6	2028	\$0	\$109,878	\$0	\$109,878
Year 7	2029	\$0	\$109,878	\$0	\$109,878
Year 8	2030	\$0	\$109,878	\$0	\$109,878
Year 9	2031	\$0	\$109,878	\$0	\$109,878
Year 10	2032	\$0	\$109,878	\$0	\$109,878
Year 11	2033	\$0	\$109,878	\$0	\$109,878
Year 12	2034	\$0	\$109,878	\$0	\$109,878
Year 13	2035	\$0	\$109,878	\$0	\$109,878
Year 14	2036	\$0	\$109,878	\$0	\$109,878
Year 15	2037	\$0	\$109,878	\$0	\$109,878
Year 16	2038	\$0	\$109,878	\$0	\$109,878
Year 17	2039	\$0	\$109,878	\$0	\$109,878
Year 18	2040	\$0	\$109,878	\$0	\$109,878
Year 19	2041	\$0	\$109,878	\$0	\$109,878
Year 20	2042	\$0	\$109,878	\$0	\$109,878
	AVERAGE	\$41,000	\$81,000	\$0	\$122,000
	TOTAL	\$1,098,781	\$2,197,560	\$0	\$3,296,341

Table 93: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	7,518,000	4,347,000	3,818,000
Year -5	2017	7,811,000	4,516,000	3,965,000
Year -4	2018	8,105,000	4,684,000	4,112,000
Year -3	2019	8,398,000	4,853,000	4,259,000
Year -2	2020	8,691,000	5,021,000	4,406,000
Year -1	2021	8,984,000	5,189,000	4,553,000
Year 0	2022	9,277,000	5,358,000	4,699,000
Year 1	2023	10,263,000	5,963,000	5,091,000
Year 2	2024	11,288,000	6,594,000	5,497,000
Year 3	2025	12,352,000	7,250,000	5,916,000
Year 4	2026	13,456,000	7,931,000	6,349,000
Year 5	2027	14,599,000	8,636,000	6,796,000
Year 6	2028	15,781,000	9,367,000	7,257,000
Year 7	2029	17,003,000	10,122,000	7,732,000
Year 8	2030	18,263,000	10,902,000	8,220,000
Year 9	2031	19,563,000	11,708,000	8,723,000
Year 10	2032	20,902,000	12,538,000	9,239,000
Year 11	2033	22,281,000	13,393,000	9,769,000
Year 12	2034	23,698,000	14,273,000	10,312,000
Year 13	2035	25,155,000	15,178,000	10,870,000
Year 14	2036	26,651,000	16,108,000	11,441,000
Year 15	2037	28,186,000	17,063,000	12,026,000
Year 16	2038	29,761,000	18,043,000	12,625,000
Year 17	2039	31,375,000	19,048,000	13,238,000
Year 18	2040	33,028,000	20,077,000	13,865,000
Year 19	2041	34,720,000	21,132,000	14,505,000
Year 20	2042	36,451,000	22,211,000	15,159,000
	AVERAGE	18,650,000	11,167,000	8,313,000
	TOTAL	503,560,000	301,505,000	224,442,000

Table 94: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$258,000	\$732,000	\$3,472,000	\$1,690,000	\$737,000	\$6,889,000
Year 2	2024	\$279,000	\$716,000	\$3,749,000	\$1,825,000	\$795,000	\$7,364,000
Year 3	2025	\$300,000	\$698,000	\$4,035,000	\$1,964,000	\$856,000	\$7,853,000
Year 4	2026	\$322,000	\$677,000	\$4,331,000	\$2,108,000	\$919,000	\$8,356,000
Year 5	2027	\$345,000	\$654,000	\$4,635,000	\$2,256,000	\$983,000	\$8,874,000
Year 6	2028	\$368,000	\$628,000	\$4,950,000	\$2,409,000	\$1,050,000	\$9,405,000
Year 7	2029	\$392,000	\$600,000	\$5,273,000	\$2,567,000	\$1,119,000	\$9,951,000
Year 8	2030	\$417,000	\$569,000	\$5,607,000	\$2,729,000	\$1,189,000	\$10,511,000
Year 9	2031	\$443,000	\$536,000	\$5,949,000	\$2,896,000	\$1,262,000	\$11,085,000
Year 10	2032	\$469,000	\$500,000	\$6,301,000	\$3,067,000	\$1,337,000	\$11,673,000
Year 11	2033	\$496,000	\$461,000	\$6,663,000	\$3,243,000	\$1,413,000	\$12,276,000
Year 12	2034	\$523,000	\$420,000	\$7,033,000	\$3,424,000	\$1,492,000	\$12,892,000
Year 13	2035	\$551,000	\$377,000	\$7,414,000	\$3,609,000	\$1,573,000	\$13,523,000
Year 14	2036	\$580,000	\$331,000	\$7,803,000	\$3,798,000	\$1,655,000	\$14,168,000
Year 15	2037	\$610,000	\$282,000	\$8,202,000	\$3,993,000	\$1,740,000	\$14,827,000
Year 16	2038	\$641,000	\$231,000	\$8,610,000	\$4,191,000	\$1,827,000	\$15,500,000
Year 17	2039	\$672,000	\$177,000	\$9,029,000	\$4,395,000	\$1,915,000	\$16,187,000
Year 18	2040	\$703,000	\$120,000	\$9,456,000	\$4,603,000	\$2,006,000	\$16,889,000
Year 19	2041	\$736,000	\$61,000	\$9,893,000	\$4,816,000	\$2,099,000	\$17,605,000
Year 20	2042	\$769,000	\$0	\$10,339,000	\$5,033,000	\$2,193,000	\$18,334,000
	AVERAGE	\$366,000	\$325,000	\$4,916,000	\$2,393,000	\$1,043,000	\$9,043,000
	TOTAL	\$9,874,000	\$8,770,000	\$132,744,000	\$64,616,000	\$28,160,000	\$244,162,000

Table 95: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$155,000	-\$155,000	-\$155,000
Year -3	2019	\$0	\$201,000	-\$201,000	-\$356,000
Year -2	2020	\$0	\$391,000	-\$391,000	-\$747,000
Year -1	2021	\$0	\$142,000	-\$142,000	-\$889,000
Year 0	2022	\$0	\$92,000	-\$92,000	-\$981,000
Year 1	2023	\$5,601,000	\$89,000	\$5,512,000	\$4,531,000
Year 2	2024	\$5,813,000	\$87,000	\$5,726,000	\$10,257,000
Year 3	2025	\$6,019,000	\$84,000	\$5,935,000	\$16,192,000
Year 4	2026	\$6,218,000	\$82,000	\$6,136,000	\$22,328,000
Year 5	2027	\$6,411,000	\$79,000	\$6,331,000	\$28,660,000
Year 6	2028	\$6,597,000	\$77,000	\$6,520,000	\$35,179,000
Year 7	2029	\$6,776,000	\$75,000	\$6,701,000	\$41,881,000
Year 8	2030	\$6,949,000	\$73,000	\$6,876,000	\$48,757,000
Year 9	2031	\$7,115,000	\$71,000	\$7,045,000	\$55,802,000
Year 10	2032	\$7,274,000	\$68,000	\$7,206,000	\$63,008,000
Year 11	2033	\$7,427,000	\$66,000	\$7,361,000	\$70,368,000
Year 12	2034	\$7,573,000	\$65,000	\$7,508,000	\$77,877,000
Year 13	2035	\$7,712,000	\$63,000	\$7,649,000	\$85,526,000
Year 14	2036	\$7,844,000	\$61,000	\$7,784,000	\$93,310,000
Year 15	2037	\$7,970,000	\$59,000	\$7,911,000	\$101,221,000
Year 16	2038	\$8,089,000	\$57,000	\$8,032,000	\$109,253,000
Year 17	2039	\$8,202,000	\$56,000	\$8,146,000	\$117,399,000
Year 18	2040	\$8,308,000	\$54,000	\$8,254,000	\$125,653,000
Year 19	2041	\$8,408,000	\$52,000	\$8,356,000	\$134,009,000
Year 20	2042	\$8,502,000	\$51,000	\$8,451,000	\$142,460,000
INTERNAL RATE OF RETURN					97.92%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$142,460,000
BENEFIT - COST RATIO					61.6

Table 96: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$144,000	-\$144,000	-\$144,000
Year -3	2019	\$0	\$179,000	-\$179,000	-\$323,000
Year -2	2020	\$0	\$335,000	-\$335,000	-\$659,000
Year -1	2021	\$0	\$118,000	-\$118,000	-\$776,000
Year 0	2022	\$0	\$73,000	-\$73,000	-\$849,000
Year 1	2023	\$4,290,000	\$68,000	\$4,222,000	\$3,372,000
Year 2	2024	\$4,286,000	\$64,000	\$4,222,000	\$7,594,000
Year 3	2025	\$4,272,000	\$60,000	\$4,212,000	\$11,806,000
Year 4	2026	\$4,248,000	\$56,000	\$4,192,000	\$15,998,000
Year 5	2027	\$4,216,000	\$52,000	\$4,164,000	\$20,162,000
Year 6	2028	\$4,176,000	\$49,000	\$4,127,000	\$24,289,000
Year 7	2029	\$4,129,000	\$46,000	\$4,084,000	\$28,373,000
Year 8	2030	\$4,076,000	\$43,000	\$4,034,000	\$32,407,000
Year 9	2031	\$4,018,000	\$40,000	\$3,978,000	\$36,385,000
Year 10	2032	\$3,954,000	\$37,000	\$3,917,000	\$40,302,000
Year 11	2033	\$3,886,000	\$35,000	\$3,851,000	\$44,153,000
Year 12	2034	\$3,814,000	\$33,000	\$3,782,000	\$47,935,000
Year 13	2035	\$3,739,000	\$30,000	\$3,709,000	\$51,644,000
Year 14	2036	\$3,661,000	\$28,000	\$3,633,000	\$55,277,000
Year 15	2037	\$3,581,000	\$27,000	\$3,554,000	\$58,831,000
Year 16	2038	\$3,499,000	\$25,000	\$3,474,000	\$62,305,000
Year 17	2039	\$3,415,000	\$23,000	\$3,392,000	\$65,697,000
Year 18	2040	\$3,330,000	\$22,000	\$3,308,000	\$69,004,000
Year 19	2041	\$3,244,000	\$20,000	\$3,223,000	\$72,228,000
Year 20	2042	\$3,157,000	\$19,000	\$3,138,000	\$75,366,000
INTERNAL RATE OF RETURN					90.52%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$75,370,000
BENEFIT - COST RATIO					47.4

Appendix S: Rialto

Table 97: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$646,136	\$0	\$0	\$646,136
Year -4	2019	\$1,076,893	\$0	\$0	\$1,076,893
Year -3	2020	\$861,515	\$0	\$0	\$861,515
Year -2	2021	\$646,136	\$0	\$0	\$646,136
Year -1	2022	\$646,136	\$0	\$0	\$646,136
Year 0	2023	\$430,757	\$0	\$0	\$430,757
Year 1	2024	\$0	\$430,757	\$0	\$430,757
Year 2	2025	\$0	\$430,757	\$0	\$430,757
Year 3	2026	\$0	\$430,757	\$0	\$430,757
Year 4	2027	\$0	\$430,757	\$0	\$430,757
Year 5	2028	\$0	\$430,757	\$0	\$430,757
Year 6	2029	\$0	\$430,757	\$0	\$430,757
Year 7	2030	\$0	\$430,757	\$0	\$430,757
Year 8	2031	\$0	\$430,757	\$0	\$430,757
Year 9	2032	\$0	\$430,757	\$0	\$430,757
Year 10	2033	\$0	\$430,757	\$0	\$430,757
Year 11	2034	\$0	\$430,757	\$0	\$430,757
Year 12	2035	\$0	\$430,757	\$0	\$430,757
Year 13	2036	\$0	\$430,757	\$0	\$430,757
Year 14	2037	\$0	\$430,757	\$0	\$430,757
Year 15	2038	\$0	\$430,757	\$0	\$430,757
Year 16	2039	\$0	\$430,757	\$0	\$430,757
Year 17	2040	\$0	\$430,757	\$0	\$430,757
Year 18	2041	\$0	\$430,757	\$0	\$430,757
Year 20	2043	\$0	\$430,757	\$0	\$430,757
Year 20	2043	\$0	\$430,757	\$0	\$430,757
	AVERAGE	\$154,000	\$308,000	\$0	\$462,000
	TOTAL	\$4,307,573	\$8,615,140	\$0	\$12,922,713

Table 98: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	1,307,000	765,000	737,000
Year -6	2017	1,312,000	767,000	739,000
Year -5	2018	1,317,000	770,000	741,000
Year -4	2019	1,322,000	772,000	742,000
Year -3	2020	1,327,000	774,000	744,000
Year -2	2021	1,332,000	776,000	746,000
Year -1	2022	1,337,000	778,000	747,000
Year 0	2023	1,343,000	781,000	749,000
Year 1	2024	2,520,000	1,517,000	1,299,000
Year 2	2025	3,696,000	2,252,000	1,848,000
Year 3	2026	4,870,000	2,986,000	2,396,000
Year 4	2027	6,042,000	3,719,000	2,943,000
Year 5	2028	7,212,000	4,451,000	3,489,000
Year 6	2029	8,381,000	5,181,000	4,035,000
Year 7	2030	9,547,000	5,911,000	4,579,000
Year 8	2031	10,711,000	6,639,000	5,123,000
Year 9	2032	11,874,000	7,367,000	5,666,000
Year 10	2033	13,035,000	8,093,000	6,208,000
Year 11	2034	14,193,000	8,819,000	6,750,000
Year 12	2035	15,350,000	9,543,000	7,290,000
Year 13	2036	16,505,000	10,266,000	7,830,000
Year 14	2037	17,658,000	10,988,000	8,369,000
Year 15	2038	18,809,000	11,709,000	8,907,000
Year 16	2039	19,958,000	12,429,000	9,444,000
Year 17	2040	21,106,000	13,148,000	9,980,000
Year 18	2041	22,251,000	13,865,000	10,516,000
Year 20	2043	23,394,000	14,582,000	11,051,000
Year 20	2043	24,536,000	15,297,000	11,585,000
	AVERAGE	10,080,000	6,248,000	4,830,000
	TOTAL	282,245,000	174,945,000	135,253,000

Table 99: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$66,000	\$161,000	\$886,000	\$431,000	\$188,000	\$1,732,000
Year 2	2025	\$94,000	\$177,000	\$1,260,000	\$613,000	\$267,000	\$2,412,000
Year 3	2026	\$122,000	\$194,000	\$1,634,000	\$795,000	\$347,000	\$3,091,000
Year 4	2027	\$149,000	\$210,000	\$2,007,000	\$977,000	\$426,000	\$3,769,000
Year 5	2028	\$177,000	\$226,000	\$2,380,000	\$1,158,000	\$505,000	\$4,446,000
Year 6	2029	\$205,000	\$241,000	\$2,752,000	\$1,339,000	\$584,000	\$5,121,000
Year 7	2030	\$232,000	\$257,000	\$3,123,000	\$1,520,000	\$663,000	\$5,796,000
Year 8	2031	\$260,000	\$272,000	\$3,494,000	\$1,701,000	\$741,000	\$6,469,000
Year 9	2032	\$287,000	\$288,000	\$3,865,000	\$1,881,000	\$820,000	\$7,141,000
Year 10	2033	\$315,000	\$303,000	\$4,234,000	\$2,061,000	\$898,000	\$7,811,000
Year 11	2034	\$342,000	\$317,000	\$4,604,000	\$2,241,000	\$977,000	\$8,481,000
Year 12	2035	\$370,000	\$332,000	\$4,972,000	\$2,420,000	\$1,055,000	\$9,149,000
Year 13	2036	\$397,000	\$346,000	\$5,340,000	\$2,599,000	\$1,133,000	\$9,816,000
Year 14	2037	\$425,000	\$361,000	\$5,708,000	\$2,778,000	\$1,211,000	\$10,482,000
Year 15	2038	\$452,000	\$375,000	\$6,070,000	\$2,957,000	\$1,289,000	\$11,147,000
Year 16	2039	\$479,000	\$389,000	\$6,441,000	\$3,135,000	\$1,366,000	\$11,811,000
Year 17	2040	\$506,000	\$402,000	\$6,807,000	\$3,313,000	\$1,444,000	\$12,473,000
Year 18	2041	\$534,000	\$416,000	\$7,172,000	\$3,491,000	\$1,521,000	\$13,134,000
Year 20	2043	\$561,000	\$429,000	\$7,537,000	\$3,669,000	\$1,599,000	\$13,794,000
Year 20	2043	\$588,000	\$442,000	\$7,901,000	\$3,846,000	\$1,676,000	\$14,453,000
AVERAGE		\$234,000	\$219,000	\$3,150,000	\$1,533,000	\$668,000	\$5,805,000
TOTAL		\$6,561,000	\$6,138,000	\$88,187,000	\$42,925,000	\$18,710,000	\$162,528,000

Table 100: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$609,000	-\$609,000	-\$609,000
Year -4	2019	\$0	\$986,000	-\$986,000	-\$1,595,000
Year -3	2020	\$0	\$765,000	-\$765,000	-\$2,360,000
Year -2	2021	\$0	\$557,000	-\$557,000	-\$2,917,000
Year -1	2022	\$0	\$541,000	-\$541,000	-\$3,458,000
Year 0	2023	\$0	\$350,000	-\$350,000	-\$3,809,000
Year 1	2024	\$1,367,000	\$340,000	\$1,027,000	-\$2,782,000
Year 2	2025	\$1,849,000	\$330,000	\$1,518,000	-\$1,263,000
Year 3	2026	\$2,300,000	\$321,000	\$1,980,000	\$716,000
Year 4	2027	\$2,723,000	\$311,000	\$2,412,000	\$3,128,000
Year 5	2028	\$3,118,000	\$302,000	\$2,816,000	\$5,944,000
Year 6	2029	\$3,487,000	\$293,000	\$3,194,000	\$9,138,000
Year 7	2030	\$3,832,000	\$285,000	\$3,547,000	\$12,685,000
Year 8	2031	\$4,152,000	\$276,000	\$3,876,000	\$16,560,000
Year 9	2032	\$4,450,000	\$268,000	\$4,181,000	\$20,741,000
Year 10	2033	\$4,726,000	\$261,000	\$4,465,000	\$25,207,000
Year 11	2034	\$4,982,000	\$253,000	\$4,729,000	\$29,935,000
Year 12	2035	\$5,218,000	\$246,000	\$4,972,000	\$34,908,000
Year 13	2036	\$5,435,000	\$238,000	\$5,197,000	\$40,104,000
Year 14	2037	\$5,635,000	\$232,000	\$5,403,000	\$45,507,000
Year 15	2038	\$5,818,000	\$225,000	\$5,593,000	\$51,100,000
Year 16	2039	\$5,984,000	\$218,000	\$5,766,000	\$56,866,000
Year 17	2040	\$6,136,000	\$212,000	\$5,924,000	\$62,790,000
Year 18	2041	\$6,273,000	\$206,000	\$6,067,000	\$68,858,000
Year 20	2043	\$6,396,000	\$200,000	\$6,197,000	\$75,054,000
Year 20	2043	\$6,507,000	\$194,000	\$6,313,000	\$81,367,000
				INTERNAL RATE OF RETURN	28.44%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$81,370,000
				BENEFIT - COST RATIO	10.0

Table 101: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$564,000	-\$564,000	-\$564,000
Year -4	2019	\$0	\$879,000	-\$879,000	-\$1,443,000
Year -3	2020	\$0	\$657,000	-\$657,000	-\$2,101,000
Year -2	2021	\$0	\$461,000	-\$461,000	-\$2,561,000
Year -1	2022	\$0	\$431,000	-\$431,000	-\$2,992,000
Year 0	2023	\$0	\$268,000	-\$268,000	-\$3,260,000
Year 1	2024	\$1,008,000	\$251,000	\$757,000	-\$2,503,000
Year 2	2025	\$1,312,000	\$234,000	\$1,078,000	-\$1,425,000
Year 3	2026	\$1,571,000	\$219,000	\$1,352,000	-\$73,000
Year 4	2027	\$1,791,000	\$205,000	\$1,586,000	\$1,513,000
Year 5	2028	\$1,974,000	\$191,000	\$1,783,000	\$3,296,000
Year 6	2029	\$2,125,000	\$179,000	\$1,946,000	\$5,242,000
Year 7	2030	\$2,248,000	\$167,000	\$2,081,000	\$7,323,000
Year 8	2031	\$2,345,000	\$156,000	\$2,188,000	\$9,511,000
Year 9	2032	\$2,419,000	\$146,000	\$2,273,000	\$11,784,000
Year 10	2033	\$2,473,000	\$136,000	\$2,337,000	\$14,120,000
Year 11	2034	\$2,509,000	\$127,000	\$2,382,000	\$16,502,000
Year 12	2035	\$2,530,000	\$119,000	\$2,411,000	\$18,913,000
Year 13	2036	\$2,537,000	\$111,000	\$2,425,000	\$21,338,000
Year 14	2037	\$2,532,000	\$104,000	\$2,428,000	\$23,766,000
Year 15	2038	\$2,516,000	\$97,000	\$2,419,000	\$26,185,000
Year 16	2039	\$2,491,000	\$91,000	\$2,401,000	\$28,585,000
Year 17	2040	\$2,459,000	\$85,000	\$2,374,000	\$30,960,000
Year 18	2041	\$2,420,000	\$79,000	\$2,341,000	\$33,300,000
Year 20	2043	\$2,375,000	\$74,000	\$2,301,000	\$35,601,000
Year 20	2043	\$2,326,000	\$69,000	\$2,257,000	\$37,858,000
				INTERNAL RATE OF RETURN	23.63%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$37,860,000
				BENEFIT - COST RATIO	7.2

Appendix T: San Bernardino

Table 102: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$379,898	\$0	\$0	\$379,898
Year -3	2019	\$506,531	\$0	\$0	\$506,531
Year -2	2020	\$1,013,062	\$0	\$0	\$1,013,062
Year -1	2021	\$379,898	\$0	\$0	\$379,898
Year 0	2022	\$253,265	\$0	\$0	\$253,265
Year 1	2023	\$0	\$253,265	\$0	\$253,265
Year 2	2024	\$0	\$253,265	\$0	\$253,265
Year 3	2025	\$0	\$253,265	\$0	\$253,265
Year 4	2026	\$0	\$253,265	\$0	\$253,265
Year 5	2027	\$0	\$253,265	\$0	\$253,265
Year 6	2028	\$0	\$253,265	\$0	\$253,265
Year 7	2029	\$0	\$253,265	\$0	\$253,265
Year 8	2030	\$0	\$253,265	\$0	\$253,265
Year 9	2031	\$0	\$253,265	\$0	\$253,265
Year 10	2032	\$0	\$253,265	\$0	\$253,265
Year 11	2033	\$0	\$253,265	\$0	\$253,265
Year 12	2034	\$0	\$253,265	\$0	\$253,265
Year 13	2035	\$0	\$253,265	\$0	\$253,265
Year 14	2036	\$0	\$253,265	\$0	\$253,265
Year 15	2037	\$0	\$253,265	\$0	\$253,265
Year 16	2038	\$0	\$253,265	\$0	\$253,265
Year 17	2039	\$0	\$253,265	\$0	\$253,265
Year 18	2040	\$0	\$253,265	\$0.00	\$253,265
Year 19	2041	\$0	\$253,265	\$0.00	\$253,265
Year 20	2042	\$0	\$253,265	\$0.00	\$253,265
	AVERAGE	\$94,000	\$188,000	\$0	\$281,000
	TOTAL	\$2,532,654	\$5,065,300	\$0	\$7,597,954

Table 103: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	10,782,000	6,101,000	5,011,000
Year -5	2017	11,061,000	6,257,000	5,139,000
Year -4	2018	11,341,000	6,414,000	5,266,000
Year -3	2019	11,620,000	6,570,000	5,393,000
Year -2	2020	11,899,000	6,727,000	5,520,000
Year -1	2021	12,178,000	6,884,000	5,648,000
Year 0	2022	12,457,000	7,040,000	5,775,000
Year 1	2023	14,712,000	8,372,000	6,656,000
Year 2	2024	17,046,000	9,752,000	7,568,000
Year 3	2025	19,459,000	11,179,000	8,510,000
Year 4	2026	21,952,000	12,653,000	9,483,000
Year 5	2027	24,525,000	14,175,000	10,486,000
Year 6	2028	27,177,000	15,745,000	11,520,000
Year 7	2029	29,908,000	17,362,000	12,584,000
Year 8	2030	32,720,000	19,026,000	13,678,000
Year 9	2031	35,610,000	20,738,000	14,803,000
Year 10	2032	38,580,000	22,498,000	15,958,000
Year 11	2033	41,630,000	24,305,000	17,144,000
Year 12	2034	44,759,000	26,159,000	18,360,000
Year 13	2035	47,968,000	28,061,000	19,607,000
Year 14	2036	51,256,000	30,011,000	20,884,000
Year 15	2037	54,624,000	32,008,000	22,191,000
Year 16	2038	58,071,000	34,053,000	23,529,000
Year 17	2039	61,598,000	36,145,000	24,897,000
Year 18	2040	65,204,000	38,284,000	26,296,000
Year 19	2041	68,890,000	40,471,000	27,725,000
Year 20	2042	72,656,000	42,706,000	29,185,000
	AVERAGE	33,692,000	19,618,000	14,030,000
	TOTAL	909,683,000	529,696,000	378,816,000

Table 104: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$338,000	\$773,000	\$4,540,000	\$2,210,000	\$963,000	\$8,823,000
Year 2	2024	\$384,000	\$750,000	\$5,162,000	\$2,513,000	\$1,095,000	\$9,903,000
Year 3	2025	\$432,000	\$726,000	\$5,804,000	\$2,825,000	\$1,231,000	\$11,019,000
Year 4	2026	\$481,000	\$700,000	\$6,468,000	\$3,148,000	\$1,372,000	\$12,169,000
Year 5	2027	\$532,000	\$671,000	\$7,152,000	\$3,481,000	\$1,517,000	\$13,354,000
Year 6	2028	\$584,000	\$641,000	\$7,857,000	\$3,824,000	\$1,667,000	\$14,574,000
Year 7	2029	\$638,000	\$609,000	\$8,583,000	\$4,178,000	\$1,821,000	\$15,828,000
Year 8	2030	\$694,000	\$574,000	\$9,329,000	\$4,541,000	\$1,979,000	\$17,117,000
Year 9	2031	\$751,000	\$537,000	\$10,096,000	\$4,914,000	\$2,142,000	\$18,441,000
Year 10	2032	\$810,000	\$499,000	\$10,884,000	\$5,298,000	\$2,309,000	\$19,800,000
Year 11	2033	\$870,000	\$458,000	\$11,693,000	\$5,692,000	\$2,480,000	\$21,193,000
Year 12	2034	\$931,000	\$415,000	\$12,522,000	\$6,095,000	\$2,656,000	\$22,621,000
Year 13	2035	\$995,000	\$371,000	\$13,373,000	\$6,509,000	\$2,837,000	\$24,084,000
Year 14	2036	\$1,059,000	\$324,000	\$14,244,000	\$6,933,000	\$3,021,000	\$25,582,000
Year 15	2037	\$1,126,000	\$275,000	\$15,135,000	\$7,367,000	\$3,211,000	\$27,114,000
Year 16	2038	\$1,194,000	\$224,000	\$16,050,000	\$7,811,000	\$3,404,000	\$28,681,000
Year 17	2039	\$1,263,000	\$171,000	\$16,981,000	\$8,266,000	\$3,602,000	\$30,283,000
Year 18	2040	\$1,334,000	\$116,000	\$17,935,000	\$8,730,000	\$3,804,000	\$31,920,000
Year 19	2041	\$1,407,000	\$59,000	\$18,910,000	\$9,205,000	\$4,011,000	\$33,591,000
Year 20	2042	\$1,481,000	\$0	\$19,905,000	\$9,689,000	\$4,222,000	\$35,297,000
	AVERAGE	\$641,000	\$329,000	\$8,616,000	\$4,194,000	\$1,828,000	\$15,607,000
	TOTAL	\$17,304,000	\$8,893,000	\$232,623,000	\$113,229,000	\$49,344,000	\$421,394,000

Table 105: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$358,000	-\$358,000	-\$358,000
Year -3	2019	\$0	\$464,000	-\$464,000	-\$822,000
Year -2	2020	\$0	\$900,000	-\$900,000	-\$1,722,000
Year -1	2021	\$0	\$328,000	-\$328,000	-\$2,049,000
Year 0	2022	\$0	\$212,000	-\$212,000	-\$2,262,000
Year 1	2023	\$7,174,000	\$206,000	\$6,968,000	\$4,706,000
Year 2	2024	\$7,818,000	\$200,000	\$7,618,000	\$12,324,000
Year 3	2025	\$8,445,000	\$194,000	\$8,251,000	\$20,575,000
Year 4	2026	\$9,055,000	\$188,000	\$8,866,000	\$29,442,000
Year 5	2027	\$9,647,000	\$183,000	\$9,464,000	\$38,906,000
Year 6	2028	\$10,222,000	\$178,000	\$10,044,000	\$48,950,000
Year 7	2029	\$10,778,000	\$172,000	\$10,606,000	\$59,555,000
Year 8	2030	\$11,316,000	\$167,000	\$11,149,000	\$70,704,000
Year 9	2031	\$11,837,000	\$163,000	\$11,674,000	\$82,378,000
Year 10	2032	\$12,338,000	\$158,000	\$12,181,000	\$94,559,000
Year 11	2033	\$12,822,000	\$153,000	\$12,669,000	\$107,228,000
Year 12	2034	\$13,288,000	\$149,000	\$13,139,000	\$120,367,000
Year 13	2035	\$13,735,000	\$144,000	\$13,590,000	\$133,957,000
Year 14	2036	\$14,164,000	\$140,000	\$14,024,000	\$147,981,000
Year 15	2037	\$14,575,000	\$136,000	\$14,439,000	\$162,420,000
Year 16	2038	\$14,969,000	\$132,000	\$14,836,000	\$177,256,000
Year 17	2039	\$15,344,000	\$128,000	\$15,216,000	\$192,472,000
Year 18	2040	\$15,702,000	\$125,000	\$15,578,000	\$208,050,000
Year 19	2041	\$16,043,000	\$121,000	\$15,922,000	\$223,972,000
Year 20	2042	\$16,367,000	\$117,000	\$16,250,000	\$240,222,000
INTERNAL RATE OF RETURN					78.36%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$240,220,000
BENEFIT - COST RATIO					45.3

Table 106: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$332,000	-\$332,000	-\$332,000
Year -3	2019	\$0	\$413,000	-\$413,000	-\$745,000
Year -2	2020	\$0	\$773,000	-\$773,000	-\$1,518,000
Year -1	2021	\$0	\$271,000	-\$271,000	-\$1,789,000
Year 0	2022	\$0	\$169,000	-\$169,000	-\$1,958,000
Year 1	2023	\$5,494,000	\$158,000	\$5,337,000	\$3,379,000
Year 2	2024	\$5,764,000	\$147,000	\$5,617,000	\$8,995,000
Year 3	2025	\$5,994,000	\$138,000	\$5,856,000	\$14,851,000
Year 4	2026	\$6,186,000	\$129,000	\$6,057,000	\$20,909,000
Year 5	2027	\$6,344,000	\$120,000	\$6,224,000	\$27,133,000
Year 6	2028	\$6,471,000	\$112,000	\$6,358,000	\$33,491,000
Year 7	2029	\$6,568,000	\$105,000	\$6,463,000	\$39,954,000
Year 8	2030	\$6,638,000	\$98,000	\$6,540,000	\$46,494,000
Year 9	2031	\$6,684,000	\$92,000	\$6,592,000	\$53,086,000
Year 10	2032	\$6,707,000	\$86,000	\$6,621,000	\$59,707,000
Year 11	2033	\$6,709,000	\$80,000	\$6,629,000	\$66,336,000
Year 12	2034	\$6,693,000	\$75,000	\$6,618,000	\$72,954,000
Year 13	2035	\$6,659,000	\$70,000	\$6,589,000	\$79,543,000
Year 14	2036	\$6,611,000	\$65,000	\$6,545,000	\$86,089,000
Year 15	2037	\$6,548,000	\$61,000	\$6,487,000	\$92,576,000
Year 16	2038	\$6,474,000	\$57,000	\$6,417,000	\$98,992,000
Year 17	2039	\$6,388,000	\$53,000	\$6,335,000	\$105,327,000
Year 18	2040	\$6,293,000	\$50,000	\$6,243,000	\$111,570,000
Year 19	2041	\$6,189,000	\$47,000	\$6,142,000	\$117,713,000
Year 20	2042	\$6,078,000	\$44,000	\$6,034,000	\$123,747,000
INTERNAL RATE OF RETURN					71.69%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$123,750,000
BENEFIT - COST RATIO					34.0

Appendix U: Twentynine Palms

Table 107: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$432,694	\$0	\$0	\$432,694
Year -3	2019	\$576,926	\$0	\$0	\$576,926
Year -2	2020	\$1,153,852	\$0	\$0	\$1,153,852
Year -1	2021	\$432,694	\$0	\$0	\$432,694
Year 0	2022	\$288,463	\$0	\$0	\$288,463
Year 1	2023	\$0	\$288,463	\$0	\$288,463
Year 2	2024	\$0	\$288,463	\$0	\$288,463
Year 3	2025	\$0	\$288,463	\$0	\$288,463
Year 4	2026	\$0	\$288,463	\$0	\$288,463
Year 5	2027	\$0	\$288,463	\$0	\$288,463
Year 6	2028	\$0	\$288,463	\$0	\$288,463
Year 7	2029	\$0	\$288,463	\$0	\$288,463
Year 8	2030	\$0	\$288,463	\$0	\$288,463
Year 9	2031	\$0	\$288,463	\$0	\$288,463
Year 10	2032	\$0	\$288,463	\$0	\$288,463
Year 11	2033	\$0	\$288,463	\$0	\$288,463
Year 12	2034	\$0	\$288,463	\$0	\$288,463
Year 13	2035	\$0	\$288,463	\$0	\$288,463
Year 14	2036	\$0	\$288,463	\$0	\$288,463
Year 15	2037	\$0	\$288,463	\$0	\$288,463
Year 16	2038	\$0	\$288,463	\$0	\$288,463
Year 17	2039	\$0	\$288,463	\$0	\$288,463
Year 18	2040	\$0	\$288,463	\$0.00	\$288,463
Year 19	2041	\$0	\$288,463	\$0.00	\$288,463
Year 20	2042	\$0	\$288,463	\$0.00	\$288,463
	AVERAGE	\$107,000	\$214,000	\$0	\$321,000
	TOTAL	\$2,884,629	\$5,769,260	\$0	\$8,653,889

Table 108: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	8,767,000	4,812,000	3,358,000
Year -5	2017	8,949,000	4,912,000	3,427,000
Year -4	2018	9,131,000	5,012,000	3,497,000
Year -3	2019	9,313,000	5,112,000	3,566,000
Year -2	2020	9,495,000	5,213,000	3,635,000
Year -1	2021	9,676,000	5,313,000	3,705,000
Year 0	2022	9,858,000	5,413,000	3,774,000
Year 1	2023	10,007,000	5,495,000	3,827,000
Year 2	2024	10,155,000	5,576,000	3,879,000
Year 3	2025	10,300,000	5,656,000	3,931,000
Year 4	2026	10,445,000	5,736,000	3,982,000
Year 5	2027	10,588,000	5,815,000	4,033,000
Year 6	2028	10,729,000	5,892,000	4,082,000
Year 7	2029	10,869,000	5,969,000	4,132,000
Year 8	2030	11,008,000	6,045,000	4,180,000
Year 9	2031	11,144,000	6,121,000	4,228,000
Year 10	2032	11,280,000	6,195,000	4,275,000
Year 11	2033	11,414,000	6,269,000	4,321,000
Year 12	2034	11,546,000	6,342,000	4,367,000
Year 13	2035	11,677,000	6,413,000	4,412,000
Year 14	2036	11,807,000	6,484,000	4,456,000
Year 15	2037	11,935,000	6,555,000	4,500,000
Year 16	2038	12,061,000	6,624,000	4,543,000
Year 17	2039	12,186,000	6,693,000	4,586,000
Year 18	2040	12,310,000	6,760,000	4,627,000
Year 19	2041	12,432,000	6,827,000	4,668,000
Year 20	2042	12,552,000	6,893,000	4,709,000
	AVERAGE	10,801,000	5,931,000	4,100,000
	TOTAL	291,634,000	160,147,000	110,700,000

Table 109: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$194,000	\$93,000	\$2,610,000	\$1,271,000	\$554,000	\$4,722,000
Year 2	2024	\$197,000	\$90,000	\$2,646,000	\$1,288,000	\$561,000	\$4,782,000
Year 3	2025	\$199,000	\$87,000	\$2,681,000	\$1,305,000	\$569,000	\$4,841,000
Year 4	2026	\$202,000	\$83,000	\$2,716,000	\$1,322,000	\$576,000	\$4,900,000
Year 5	2027	\$205,000	\$80,000	\$2,751,000	\$1,339,000	\$583,000	\$4,957,000
Year 6	2028	\$207,000	\$76,000	\$2,784,000	\$1,355,000	\$591,000	\$5,013,000
Year 7	2029	\$210,000	\$71,000	\$2,818,000	\$1,372,000	\$598,000	\$5,068,000
Year 8	2030	\$212,000	\$67,000	\$2,851,000	\$1,388,000	\$605,000	\$5,123,000
Year 9	2031	\$214,000	\$63,000	\$2,884,000	\$1,404,000	\$612,000	\$5,176,000
Year 10	2032	\$217,000	\$58,000	\$2,916,000	\$1,419,000	\$618,000	\$5,228,000
Year 11	2033	\$219,000	\$53,000	\$2,947,000	\$1,435,000	\$625,000	\$5,279,000
Year 12	2034	\$222,000	\$48,000	\$2,978,000	\$1,450,000	\$632,000	\$5,329,000
Year 13	2035	\$224,000	\$43,000	\$3,009,000	\$1,465,000	\$638,000	\$5,379,000
Year 14	2036	\$226,000	\$37,000	\$3,039,000	\$1,479,000	\$645,000	\$5,427,000
Year 15	2037	\$228,000	\$31,000	\$3,069,000	\$1,494,000	\$651,000	\$5,474,000
Year 16	2038	\$230,000	\$25,000	\$3,100,000	\$1,508,000	\$657,000	\$5,520,000
Year 17	2039	\$233,000	\$19,000	\$3,128,000	\$1,522,000	\$663,000	\$5,565,000
Year 18	2040	\$235,000	\$13,000	\$3,156,000	\$1,536,000	\$669,000	\$5,609,000
Year 19	2041	\$237,000	\$7,000	\$3,184,000	\$1,550,000	\$675,000	\$5,653,000
Year 20	2042	\$239,000	\$0	\$3,211,000	\$1,563,000	\$681,000	\$5,695,000
	AVERAGE	\$161,000	\$39,000	\$2,166,000	\$1,054,000	\$459,000	\$3,879,000
	TOTAL	\$4,350,000	\$1,044,000	\$58,478,000	\$28,465,000	\$12,403,000	\$104,740,000

Table 110: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$408,000	-\$408,000	-\$408,000
Year -3	2019	\$0	\$528,000	-\$528,000	-\$936,000
Year -2	2020	\$0	\$1,025,000	-\$1,025,000	-\$1,961,000
Year -1	2021	\$0	\$373,000	-\$373,000	-\$2,334,000
Year 0	2022	\$0	\$242,000	-\$242,000	-\$2,576,000
Year 1	2023	\$3,839,000	\$235,000	\$3,605,000	\$1,029,000
Year 2	2024	\$3,775,000	\$228,000	\$3,547,000	\$4,576,000
Year 3	2025	\$3,711,000	\$221,000	\$3,489,000	\$8,066,000
Year 4	2026	\$3,646,000	\$215,000	\$3,431,000	\$11,497,000
Year 5	2027	\$3,581,000	\$208,000	\$3,373,000	\$14,870,000
Year 6	2028	\$3,516,000	\$202,000	\$3,314,000	\$18,183,000
Year 7	2029	\$3,451,000	\$196,000	\$3,255,000	\$21,438,000
Year 8	2030	\$3,387,000	\$191,000	\$3,196,000	\$24,634,000
Year 9	2031	\$3,322,000	\$185,000	\$3,137,000	\$27,771,000
Year 10	2032	\$3,258,000	\$180,000	\$3,078,000	\$30,849,000
Year 11	2033	\$3,194,000	\$175,000	\$3,020,000	\$33,869,000
Year 12	2034	\$3,130,000	\$169,000	\$2,961,000	\$36,830,000
Year 13	2035	\$3,067,000	\$165,000	\$2,903,000	\$39,733,000
Year 14	2036	\$3,005,000	\$160,000	\$2,845,000	\$42,578,000
Year 15	2037	\$2,943,000	\$155,000	\$2,787,000	\$45,365,000
Year 16	2038	\$2,881,000	\$151,000	\$2,730,000	\$48,096,000
Year 17	2039	\$2,820,000	\$146,000	\$2,674,000	\$50,769,000
Year 18	2040	\$2,759,000	\$142,000	\$2,618,000	\$53,387,000
Year 19	2041	\$2,700,000	\$138,000	\$2,562,000	\$55,949,000
Year 20	2042	\$2,641,000	\$134,000	\$2,507,000	\$58,456,000
				INTERNAL RATE OF RETURN	50.08%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$58,460,000
				BENEFIT - COST RATIO	10.5

Table 111: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$378,000	-\$378,000	-\$378,000
Year -3	2019	\$0	\$471,000	-\$471,000	-\$849,000
Year -2	2020	\$0	\$880,000	-\$880,000	-\$1,729,000
Year -1	2021	\$0	\$309,000	-\$309,000	-\$2,038,000
Year 0	2022	\$0	\$192,000	-\$192,000	-\$2,230,000
Year 1	2023	\$2,941,000	\$180,000	\$2,761,000	\$531,000
Year 2	2024	\$2,783,000	\$168,000	\$2,615,000	\$3,146,000
Year 3	2025	\$2,633,000	\$157,000	\$2,477,000	\$5,623,000
Year 4	2026	\$2,491,000	\$147,000	\$2,344,000	\$7,967,000
Year 5	2027	\$2,355,000	\$137,000	\$2,218,000	\$10,185,000
Year 6	2028	\$2,226,000	\$128,000	\$2,098,000	\$12,283,000
Year 7	2029	\$2,103,000	\$120,000	\$1,983,000	\$14,266,000
Year 8	2030	\$1,987,000	\$112,000	\$1,875,000	\$16,141,000
Year 9	2031	\$1,876,000	\$105,000	\$1,771,000	\$17,912,000
Year 10	2032	\$1,771,000	\$98,000	\$1,673,000	\$19,586,000
Year 11	2033	\$1,671,000	\$91,000	\$1,580,000	\$21,166,000
Year 12	2034	\$1,577,000	\$85,000	\$1,491,000	\$22,657,000
Year 13	2035	\$1,487,000	\$80,000	\$1,407,000	\$24,065,000
Year 14	2036	\$1,402,000	\$75,000	\$1,328,000	\$25,392,000
Year 15	2037	\$1,322,000	\$70,000	\$1,252,000	\$26,645,000
Year 16	2038	\$1,246,000	\$65,000	\$1,181,000	\$27,826,000
Year 17	2039	\$1,174,000	\$61,000	\$1,113,000	\$28,939,000
Year 18	2040	\$1,106,000	\$57,000	\$1,049,000	\$29,988,000
Year 19	2041	\$1,041,000	\$53,000	\$988,000	\$30,976,000
Year 20	2042	\$981,000	\$50,000	\$931,000	\$31,907,000
				INTERNAL RATE OF RETURN	44.47%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$31,910,000
				BENEFIT - COST RATIO	8.5

Appendix V: Upland

Table 112: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$513,559	\$0	\$0	\$513,559
Year -4	2019	\$855,932	\$0	\$0	\$855,932
Year -3	2020	\$684,746	\$0	\$0	\$684,746
Year -2	2021	\$513,559	\$0	\$0	\$513,559
Year -1	2022	\$513,559	\$0	\$0	\$513,559
Year 0	2023	\$342,373	\$0	\$0	\$342,373
Year 1	2024	\$0	\$342,373	\$0	\$342,373
Year 2	2025	\$0	\$342,373	\$0	\$342,373
Year 3	2026	\$0	\$342,373	\$0	\$342,373
Year 4	2027	\$0	\$342,373	\$0	\$342,373
Year 5	2028	\$0	\$342,373	\$0	\$342,373
Year 6	2029	\$0	\$342,373	\$0	\$342,373
Year 7	2030	\$0	\$342,373	\$0	\$342,373
Year 8	2031	\$0	\$342,373	\$0	\$342,373
Year 9	2032	\$0	\$342,373	\$0	\$342,373
Year 10	2033	\$0	\$342,373	\$0	\$342,373
Year 11	2034	\$0	\$342,373	\$0	\$342,373
Year 12	2035	\$0	\$342,373	\$0	\$342,373
Year 13	2036	\$0	\$342,373	\$0	\$342,373
Year 14	2037	\$0	\$342,373	\$0	\$342,373
Year 15	2038	\$0	\$342,373	\$0	\$342,373
Year 16	2039	\$0	\$342,373	\$0	\$342,373
Year 17	2040	\$0	\$342,373	\$0	\$342,373
Year 18	2041	\$0	\$342,373	\$0	\$342,373
Year 19	2042	\$0	\$342,373	\$0	\$342,373
Year 20	2043	\$0	\$342,373	\$0	\$342,373
	AVERAGE	\$122,000	\$245,000	\$0	\$367,000
	TOTAL	\$3,423,728	\$6,847,460	\$0	\$10,271,188

Table 113: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -7	2016	4,125,000	2,440,000	2,196,000
Year -6	2017	4,194,000	2,480,000	2,232,000
Year -5	2018	4,262,000	2,520,000	2,268,000
Year -4	2019	4,331,000	2,561,000	2,304,000
Year -3	2020	4,400,000	2,601,000	2,339,000
Year -2	2021	4,469,000	2,641,000	2,375,000
Year -1	2022	4,538,000	2,681,000	2,411,000
Year 0	2023	4,607,000	2,721,000	2,446,000
Year 1	2024	5,714,000	3,406,000	2,945,000
Year 2	2025	6,849,000	4,107,000	3,455,000
Year 3	2026	8,011,000	4,825,000	3,978,000
Year 4	2027	9,200,000	5,560,000	4,512,000
Year 5	2028	10,416,000	6,312,000	5,059,000
Year 6	2029	11,660,000	7,081,000	5,618,000
Year 7	2030	12,931,000	7,867,000	6,190,000
Year 8	2031	14,229,000	8,670,000	6,773,000
Year 9	2032	15,554,000	9,490,000	7,368,000
Year 10	2033	16,907,000	10,327,000	7,976,000
Year 11	2034	18,287,000	11,181,000	8,596,000
Year 12	2035	19,694,000	12,052,000	9,228,000
Year 13	2036	21,128,000	12,940,000	9,872,000
Year 14	2037	22,590,000	13,845,000	10,529,000
Year 15	2038	24,079,000	14,767,000	11,197,000
Year 16	2039	25,595,000	15,705,000	11,878,000
Year 17	2040	27,138,000	16,661,000	12,571,000
Year 18	2041	28,709,000	17,634,000	13,276,000
Year 19	2042	30,307,000	18,623,000	13,993,000
Year 20	2043	31,932,000	19,630,000	14,722,000
	AVERAGE	14,138,000	8,619,000	6,725,000
	TOTAL	395,856,000	241,328,000	188,307,000

Table 114: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -7	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2024	\$149,000	\$379,000	\$2,008,000	\$978,000	\$426,000	\$3,941,000
Year 2	2025	\$175,000	\$390,000	\$2,357,000	\$1,147,000	\$500,000	\$4,569,000
Year 3	2026	\$202,000	\$400,000	\$2,713,000	\$1,321,000	\$575,000	\$5,211,000
Year 4	2027	\$229,000	\$411,000	\$3,078,000	\$1,498,000	\$653,000	\$5,869,000
Year 5	2028	\$257,000	\$422,000	\$3,451,000	\$1,680,000	\$732,000	\$6,541,000
Year 6	2029	\$285,000	\$432,000	\$3,832,000	\$1,865,000	\$813,000	\$7,227,000
Year 7	2030	\$314,000	\$443,000	\$4,222,000	\$2,055,000	\$895,000	\$7,928,000
Year 8	2031	\$344,000	\$453,000	\$4,619,000	\$2,249,000	\$980,000	\$8,644,000
Year 9	2032	\$374,000	\$463,000	\$5,026,000	\$2,446,000	\$1,066,000	\$9,375,000
Year 10	2033	\$405,000	\$474,000	\$5,440,000	\$2,648,000	\$1,154,000	\$10,121,000
Year 11	2034	\$436,000	\$484,000	\$5,863,000	\$2,854,000	\$1,244,000	\$10,881,000
Year 12	2035	\$468,000	\$494,000	\$6,294,000	\$3,064,000	\$1,335,000	\$11,655,000
Year 13	2036	\$501,000	\$505,000	\$6,733,000	\$3,278,000	\$1,428,000	\$12,445,000
Year 14	2037	\$534,000	\$515,000	\$7,181,000	\$3,495,000	\$1,523,000	\$13,249,000
Year 15	2038	\$568,000	\$525,000	\$7,640,000	\$3,717,000	\$1,620,000	\$14,067,000
Year 16	2039	\$603,000	\$535,000	\$8,101,000	\$3,943,000	\$1,718,000	\$14,901,000
Year 17	2040	\$638,000	\$545,000	\$8,574,000	\$4,173,000	\$1,819,000	\$15,749,000
Year 18	2041	\$674,000	\$556,000	\$9,055,000	\$4,407,000	\$1,921,000	\$16,612,000
Year 19	2042	\$710,000	\$566,000	\$9,544,000	\$4,645,000	\$2,024,000	\$17,489,000
Year 20	2043	\$747,000	\$576,000	\$10,041,000	\$4,888,000	\$2,130,000	\$18,381,000
AVERAGE		\$308,000	\$342,000	\$4,135,000	\$2,013,000	\$877,000	\$7,673,000
TOTAL		\$8,613,000	\$9,568,000	\$115,772,000	\$56,351,000	\$24,556,000	\$214,855,000

Table 115: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$484,000	-\$484,000	-\$484,000
Year -4	2019	\$0	\$783,000	-\$783,000	-\$1,267,000
Year -3	2020	\$0	\$608,000	-\$608,000	-\$1,876,000
Year -2	2021	\$0	\$443,000	-\$443,000	-\$2,319,000
Year -1	2022	\$0	\$430,000	-\$430,000	-\$2,749,000
Year 0	2023	\$0	\$278,000	-\$278,000	-\$3,027,000
Year 1	2024	\$3,111,000	\$270,000	\$2,841,000	-\$187,000
Year 2	2025	\$3,501,000	\$262,000	\$3,239,000	\$3,052,000
Year 3	2026	\$3,878,000	\$255,000	\$3,623,000	\$6,675,000
Year 4	2027	\$4,240,000	\$247,000	\$3,992,000	\$10,667,000
Year 5	2028	\$4,587,000	\$240,000	\$4,347,000	\$15,015,000
Year 6	2029	\$4,921,000	\$233,000	\$4,688,000	\$19,703,000
Year 7	2030	\$5,242,000	\$226,000	\$5,015,000	\$24,718,000
Year 8	2031	\$5,549,000	\$220,000	\$5,329,000	\$30,047,000
Year 9	2032	\$5,842,000	\$213,000	\$5,629,000	\$35,676,000
Year 10	2033	\$6,123,000	\$207,000	\$5,916,000	\$41,592,000
Year 11	2034	\$6,391,000	\$201,000	\$6,190,000	\$47,782,000
Year 12	2035	\$6,647,000	\$195,000	\$6,452,000	\$54,234,000
Year 13	2036	\$6,890,000	\$190,000	\$6,701,000	\$60,934,000
Year 14	2037	\$7,122,000	\$184,000	\$6,938,000	\$67,872,000
Year 15	2038	\$7,342,000	\$179,000	\$7,163,000	\$75,035,000
Year 16	2039	\$7,550,000	\$173,000	\$7,377,000	\$82,412,000
Year 17	2040	\$7,747,000	\$168,000	\$7,579,000	\$89,991,000
Year 18	2041	\$7,934,000	\$164,000	\$7,770,000	\$97,761,000
Year 19	2042	\$8,110,000	\$159,000	\$7,951,000	\$105,712,000
Year 20	2043	\$8,275,000	\$154,000	\$8,121,000	\$113,833,000
				INTERNAL RATE OF RETURN	40.62%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$113,830,000
				BENEFIT - COST RATIO	16.9

Table 116: Costs and Benefits (discounted 75, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -7	2016	\$0	\$0	\$0	\$0
Year -6	2017	\$0	\$0	\$0	\$0
Year -5	2018	\$0	\$449,000	-\$449,000	-\$449,000
Year -4	2019	\$0	\$699,000	-\$699,000	-\$1,147,000
Year -3	2020	\$0	\$522,000	-\$522,000	-\$1,670,000
Year -2	2021	\$0	\$366,000	-\$366,000	-\$2,036,000
Year -1	2022	\$0	\$342,000	-\$342,000	-\$2,378,000
Year 0	2023	\$0	\$213,000	-\$213,000	-\$2,591,000
Year 1	2024	\$2,293,000	\$199,000	\$2,094,000	-\$497,000
Year 2	2025	\$2,485,000	\$186,000	\$2,299,000	\$1,802,000
Year 3	2026	\$2,649,000	\$174,000	\$2,475,000	\$4,277,000
Year 4	2027	\$2,788,000	\$163,000	\$2,625,000	\$6,902,000
Year 5	2028	\$2,904,000	\$152,000	\$2,752,000	\$9,654,000
Year 6	2029	\$2,999,000	\$142,000	\$2,857,000	\$12,511,000
Year 7	2030	\$3,075,000	\$133,000	\$2,942,000	\$15,453,000
Year 8	2031	\$3,133,000	\$124,000	\$3,009,000	\$18,462,000
Year 9	2032	\$3,176,000	\$116,000	\$3,060,000	\$21,522,000
Year 10	2033	\$3,204,000	\$108,000	\$3,096,000	\$24,618,000
Year 11	2034	\$3,219,000	\$101,000	\$3,118,000	\$27,735,000
Year 12	2035	\$3,223,000	\$95,000	\$3,128,000	\$30,864,000
Year 13	2036	\$3,216,000	\$88,000	\$3,127,000	\$33,991,000
Year 14	2037	\$3,200,000	\$83,000	\$3,117,000	\$37,108,000
Year 15	2038	\$3,175,000	\$77,000	\$3,098,000	\$40,206,000
Year 16	2039	\$3,143,000	\$72,000	\$3,071,000	\$43,277,000
Year 17	2040	\$3,105,000	\$67,000	\$3,037,000	\$46,314,000
Year 18	2041	\$3,061,000	\$63,000	\$2,998,000	\$49,312,000
Year 19	2042	\$3,012,000	\$59,000	\$2,953,000	\$52,265,000
Year 20	2043	\$2,958,000	\$55,000	\$2,903,000	\$55,168,000
				INTERNAL RATE OF RETURN	35.36%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$55,170,000
				BENEFIT - COST RATIO	12.4

Appendix W: Victorville

Table 117: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$297,533	\$0	\$0	\$297,533
Year -1	2019	\$223,150	\$0	\$0	\$223,150
Year 0	2020	\$223,150	\$0	\$0	\$223,150
Year 1	2021	\$0	\$74,383	\$0	\$74,383
Year 2	2022	\$0	\$74,383	\$0	\$74,383
Year 3	2023	\$0	\$74,383	\$0	\$74,383
Year 4	2024	\$0	\$74,383	\$0	\$74,383
Year 5	2025	\$0	\$74,383	\$0	\$74,383
Year 6	2026	\$0	\$74,383	\$0	\$74,383
Year 7	2027	\$0	\$74,383	\$0	\$74,383
Year 8	2028	\$0	\$74,383	\$0	\$74,383
Year 9	2029	\$0	\$74,383	\$0	\$74,383
Year 10	2030	\$0	\$74,383	\$0	\$74,383
Year 11	2031	\$0	\$74,383	\$0	\$74,383
Year 12	2032	\$0	\$74,383	\$0	\$74,383
Year 13	2033	\$0	\$74,383	\$0	\$74,383
Year 14	2034	\$0	\$74,383	\$0	\$74,383
Year 15	2035	\$0	\$74,383	\$0	\$74,383
Year 16	2036	\$0	\$74,383	\$0	\$74,383
Year 17	2037	\$0	\$74,383	\$0	\$74,383
Year 18	2038	\$0	\$74,383	\$0	\$74,383
Year 19	2039	\$0	\$74,383	\$0	\$74,383
Year 20	2040	\$0	\$74,383	\$0.00	\$74,383
	AVERAGE	\$30,000	\$60,000	\$0	\$89,000
	TOTAL	\$743,833	\$1,487,660	\$0	\$2,231,493

Table 118: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -4	2016	1,855,000	1,075,000	923,000
Year -3	2017	1,929,000	1,117,000	959,000
Year -2	2018	2,002,000	1,160,000	995,000
Year -1	2019	2,076,000	1,202,000	1,031,000
Year 0	2020	2,149,000	1,244,000	1,067,000
Year 1	2021	3,548,000	2,095,000	1,644,000
Year 2	2022	5,032,000	2,997,000	2,256,000
Year 3	2023	6,600,000	3,951,000	2,903,000
Year 4	2024	8,254,000	4,957,000	3,584,000
Year 5	2025	9,993,000	6,015,000	4,301,000
Year 6	2026	11,816,000	7,125,000	5,051,000
Year 7	2027	13,725,000	8,286,000	5,837,000
Year 8	2028	15,718,000	9,500,000	6,657,000
Year 9	2029	17,797,000	10,765,000	7,512,000
Year 10	2030	19,960,000	12,082,000	8,402,000
Year 11	2031	22,209,000	13,451,000	9,326,000
Year 12	2032	24,542,000	14,872,000	10,285,000
Year 13	2033	26,960,000	16,344,000	11,279,000
Year 14	2034	29,464,000	17,869,000	12,307,000
Year 15	2035	32,052,000	19,445,000	13,370,000
Year 16	2036	34,725,000	21,073,000	14,468,000
Year 17	2037	37,484,000	22,753,000	15,601,000
Year 18	2038	40,327,000	24,485,000	16,768,000
Year 19	2039	43,255,000	26,269,000	17,970,000
Year 20	2040	46,268,000	28,104,000	19,207,000
	AVERAGE	18,390,000	11,129,000	7,748,000
	TOTAL	459,740,000	278,236,000	193,703,000

Table 119: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -4	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2021	\$83,000	\$155,000	\$1,122,000	\$546,000	\$238,000	\$2,144,000
Year 2	2022	\$114,000	\$152,000	\$1,539,000	\$749,000	\$326,000	\$2,881,000
Year 3	2023	\$147,000	\$149,000	\$1,980,000	\$964,000	\$420,000	\$3,660,000
Year 4	2024	\$182,000	\$145,000	\$2,445,000	\$1,190,000	\$519,000	\$4,480,000
Year 5	2025	\$218,000	\$140,000	\$2,933,000	\$1,428,000	\$622,000	\$5,341,000
Year 6	2026	\$256,000	\$135,000	\$3,445,000	\$1,677,000	\$731,000	\$6,244,000
Year 7	2027	\$296,000	\$129,000	\$3,981,000	\$1,938,000	\$844,000	\$7,188,000
Year 8	2028	\$338,000	\$122,000	\$4,540,000	\$2,210,000	\$963,000	\$8,174,000
Year 9	2029	\$381,000	\$115,000	\$5,123,000	\$2,494,000	\$1,087,000	\$9,201,000
Year 10	2030	\$426,000	\$108,000	\$5,730,000	\$2,789,000	\$1,216,000	\$10,269,000
Year 11	2031	\$473,000	\$100,000	\$6,361,000	\$3,096,000	\$1,349,000	\$11,379,000
Year 12	2032	\$522,000	\$91,000	\$7,015,000	\$3,414,000	\$1,488,000	\$12,530,000
Year 13	2033	\$572,000	\$81,000	\$7,693,000	\$3,744,000	\$1,632,000	\$13,722,000
Year 14	2034	\$624,000	\$72,000	\$8,394,000	\$4,086,000	\$1,781,000	\$14,956,000
Year 15	2035	\$678,000	\$61,000	\$9,119,000	\$4,439,000	\$1,934,000	\$16,232,000
Year 16	2036	\$734,000	\$50,000	\$9,868,000	\$4,803,000	\$2,093,000	\$17,548,000
Year 17	2037	\$791,000	\$38,000	\$10,640,000	\$5,179,000	\$2,257,000	\$18,907,000
Year 18	2038	\$851,000	\$26,000	\$11,440,000	\$5,567,000	\$2,426,000	\$20,306,000
Year 19	2039	\$912,000	\$13,000	\$12,256,000	\$5,966,000	\$2,600,000	\$21,747,000
Year 20	2040	\$974,000	\$0	\$13,100,000	\$6,376,000	\$2,779,000	\$23,229,000
	AVERAGE	\$383,000	\$75,000	\$5,149,000	\$2,506,000	\$1,092,000	\$9,206,000
	TOTAL	\$9,572,000	\$1,882,000	\$128,724,000	\$62,655,000	\$27,305,000	\$230,138,000

Table 120: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$280,000	-\$280,000	-\$280,000
Year -1	2019	\$0	\$204,000	-\$204,000	-\$485,000
Year 0	2020	\$0	\$198,000	-\$198,000	-\$683,000
Year 1	2021	\$1,850,000	\$64,000	\$1,785,000	\$1,103,000
Year 2	2022	\$2,413,000	\$62,000	\$2,351,000	\$3,453,000
Year 3	2023	\$2,976,000	\$60,000	\$2,915,000	\$6,369,000
Year 4	2024	\$3,536,000	\$59,000	\$3,478,000	\$9,846,000
Year 5	2025	\$4,094,000	\$57,000	\$4,037,000	\$13,883,000
Year 6	2026	\$4,646,000	\$55,000	\$4,591,000	\$18,474,000
Year 7	2027	\$5,193,000	\$54,000	\$5,139,000	\$23,613,000
Year 8	2028	\$5,733,000	\$52,000	\$5,681,000	\$29,294,000
Year 9	2029	\$6,265,000	\$51,000	\$6,215,000	\$35,508,000
Year 10	2030	\$6,789,000	\$49,000	\$6,740,000	\$42,248,000
Year 11	2031	\$7,304,000	\$48,000	\$7,256,000	\$49,504,000
Year 12	2032	\$7,808,000	\$46,000	\$7,762,000	\$57,266,000
Year 13	2033	\$8,302,000	\$45,000	\$8,257,000	\$65,523,000
Year 14	2034	\$8,785,000	\$44,000	\$8,742,000	\$74,264,000
Year 15	2035	\$9,257,000	\$42,000	\$9,214,000	\$83,479,000
Year 16	2036	\$9,716,000	\$41,000	\$9,675,000	\$93,154,000
Year 17	2037	\$10,163,000	\$40,000	\$10,123,000	\$103,277,000
Year 18	2038	\$10,598,000	\$39,000	\$10,559,000	\$113,836,000
Year 19	2039	\$11,019,000	\$38,000	\$10,981,000	\$124,817,000
Year 20	2040	\$11,427,000	\$37,000	\$11,391,000	\$136,208,000
				INTERNAL RATE OF RETURN	116.30%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$136,210,000
				BENEFIT - COST RATIO	82.7

Table 121: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -4	2016	\$0	\$0	\$0	\$0
Year -3	2017	\$0	\$0	\$0	\$0
Year -2	2018	\$0	\$260,000	-\$260,000	-\$260,000
Year -1	2019	\$0	\$182,000	-\$182,000	-\$442,000
Year 0	2020	\$0	\$170,000	-\$170,000	-\$612,000
Year 1	2021	\$1,529,000	\$53,000	\$1,476,000	\$864,000
Year 2	2022	\$1,920,000	\$50,000	\$1,870,000	\$2,734,000
Year 3	2023	\$2,279,000	\$46,000	\$2,233,000	\$4,967,000
Year 4	2024	\$2,607,000	\$43,000	\$2,564,000	\$7,531,000
Year 5	2025	\$2,905,000	\$40,000	\$2,865,000	\$10,396,000
Year 6	2026	\$3,174,000	\$38,000	\$3,136,000	\$13,532,000
Year 7	2027	\$3,415,000	\$35,000	\$3,380,000	\$16,912,000
Year 8	2028	\$3,629,000	\$33,000	\$3,596,000	\$20,508,000
Year 9	2029	\$3,818,000	\$31,000	\$3,787,000	\$24,295,000
Year 10	2030	\$3,982,000	\$29,000	\$3,954,000	\$28,249,000
Year 11	2031	\$4,124,000	\$27,000	\$4,097,000	\$32,346,000
Year 12	2032	\$4,244,000	\$25,000	\$4,219,000	\$36,565,000
Year 13	2033	\$4,344,000	\$24,000	\$4,321,000	\$40,885,000
Year 14	2034	\$4,425,000	\$22,000	\$4,403,000	\$45,288,000
Year 15	2035	\$4,488,000	\$21,000	\$4,468,000	\$49,756,000
Year 16	2036	\$4,535,000	\$19,000	\$4,516,000	\$54,272,000
Year 17	2037	\$4,566,000	\$18,000	\$4,548,000	\$58,820,000
Year 18	2038	\$4,583,000	\$17,000	\$4,567,000	\$63,387,000
Year 19	2039	\$4,587,000	\$16,000	\$4,572,000	\$67,958,000
Year 20	2040	\$4,580,000	\$15,000	\$4,565,000	\$72,523,000
				INTERNAL RATE OF RETURN	108.21%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$72,520,000
				BENEFIT - COST RATIO	60.8

Appendix X: Yucaipa

Table 122: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$351,776	\$0	\$0	\$351,776
Year -3	2019	\$469,035	\$0	\$0	\$469,035
Year -2	2020	\$938,070	\$0	\$0	\$938,070
Year -1	2021	\$351,776	\$0	\$0	\$351,776
Year 0	2022	\$234,518	\$0	\$0	\$234,518
Year 1	2023	\$0	\$234,518	\$0	\$234,518
Year 2	2024	\$0	\$234,518	\$0	\$234,518
Year 3	2025	\$0	\$234,518	\$0	\$234,518
Year 4	2026	\$0	\$234,518	\$0	\$234,518
Year 5	2027	\$0	\$234,518	\$0	\$234,518
Year 6	2028	\$0	\$234,518	\$0	\$234,518
Year 7	2029	\$0	\$234,518	\$0	\$234,518
Year 8	2030	\$0	\$234,518	\$0	\$234,518
Year 9	2031	\$0	\$234,518	\$0	\$234,518
Year 10	2032	\$0	\$234,518	\$0	\$234,518
Year 11	2033	\$0	\$234,518	\$0	\$234,518
Year 12	2034	\$0	\$234,518	\$0	\$234,518
Year 13	2035	\$0	\$234,518	\$0	\$234,518
Year 14	2036	\$0	\$234,518	\$0	\$234,518
Year 15	2037	\$0	\$234,518	\$0	\$234,518
Year 16	2038	\$0	\$234,518	\$0	\$234,518
Year 17	2039	\$0	\$234,518	\$0	\$234,518
Year 18	2040	\$0	\$234,518	\$0	\$234,518
Year 19	2041	\$0	\$234,518	\$0	\$234,518
Year 20	2042	\$0	\$234,518	\$0	\$234,518
	AVERAGE	\$87,000	\$174,000	\$0	\$261,000
	TOTAL	\$2,345,175	\$4,690,360	\$0	\$7,035,535

Table 123: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	2,118,000	1,287,000	983,000
Year -5	2017	2,111,000	1,282,000	979,000
Year -4	2018	2,103,000	1,278,000	975,000
Year -3	2019	2,096,000	1,273,000	971,000
Year -2	2020	2,088,000	1,268,000	967,000
Year -1	2021	2,081,000	1,264,000	963,000
Year 0	2022	2,074,000	1,259,000	959,000
Year 1	2023	2,633,000	1,602,000	1,217,000
Year 2	2024	3,186,000	1,941,000	1,472,000
Year 3	2025	3,733,000	2,276,000	1,723,000
Year 4	2026	4,272,000	2,607,000	1,971,000
Year 5	2027	4,805,000	2,934,000	2,217,000
Year 6	2028	5,331,000	3,257,000	2,459,000
Year 7	2029	5,851,000	3,575,000	2,698,000
Year 8	2030	6,364,000	3,890,000	2,935,000
Year 9	2031	6,870,000	4,200,000	3,168,000
Year 10	2032	7,369,000	4,506,000	3,398,000
Year 11	2033	7,862,000	4,809,000	3,625,000
Year 12	2034	8,347,000	5,107,000	3,849,000
Year 13	2035	8,827,000	5,401,000	4,070,000
Year 14	2036	9,299,000	5,691,000	4,288,000
Year 15	2037	9,765,000	5,977,000	4,503,000
Year 16	2038	10,224,000	6,258,000	4,715,000
Year 17	2039	10,676,000	6,536,000	4,923,000
Year 18	2040	11,122,000	6,810,000	5,129,000
Year 19	2041	11,561,000	7,079,000	5,332,000
Year 20	2042	11,993,000	7,344,000	5,531,000
	AVERAGE	6,102,000	3,730,000	2,816,000
	TOTAL	164,761,000	100,711,000	76,020,000

Table 124: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$62,000	\$79,000	\$830,000	\$404,000	\$176,000	\$1,551,000
Year 2	2024	\$75,000	\$88,000	\$1,004,000	\$489,000	\$213,000	\$1,867,000
Year 3	2025	\$87,000	\$96,000	\$1,175,000	\$572,000	\$249,000	\$2,180,000
Year 4	2026	\$100,000	\$104,000	\$1,345,000	\$654,000	\$285,000	\$2,489,000
Year 5	2027	\$112,000	\$113,000	\$1,512,000	\$736,000	\$321,000	\$2,794,000
Year 6	2028	\$125,000	\$121,000	\$1,677,000	\$816,000	\$356,000	\$3,095,000
Year 7	2029	\$137,000	\$128,000	\$1,840,000	\$896,000	\$390,000	\$3,392,000
Year 8	2030	\$149,000	\$136,000	\$2,002,000	\$974,000	\$425,000	\$3,685,000
Year 9	2031	\$161,000	\$144,000	\$2,161,000	\$1,052,000	\$458,000	\$3,975,000
Year 10	2032	\$172,000	\$151,000	\$2,318,000	\$1,128,000	\$492,000	\$4,261,000
Year 11	2033	\$184,000	\$158,000	\$2,472,000	\$1,203,000	\$524,000	\$4,542,000
Year 12	2034	\$195,000	\$165,000	\$2,625,000	\$1,278,000	\$557,000	\$4,820,000
Year 13	2035	\$206,000	\$172,000	\$2,776,000	\$1,351,000	\$589,000	\$5,095,000
Year 14	2036	\$218,000	\$179,000	\$2,925,000	\$1,424,000	\$620,000	\$5,365,000
Year 15	2037	\$228,000	\$185,000	\$3,071,000	\$1,495,000	\$651,000	\$5,631,000
Year 16	2038	\$239,000	\$192,000	\$3,220,000	\$1,565,000	\$682,000	\$5,894,000
Year 17	2039	\$250,000	\$198,000	\$3,358,000	\$1,635,000	\$712,000	\$6,153,000
Year 18	2040	\$260,000	\$204,000	\$3,498,000	\$1,703,000	\$742,000	\$6,408,000
Year 19	2041	\$270,000	\$210,000	\$3,637,000	\$1,770,000	\$771,000	\$6,659,000
Year 20	2042	\$281,000	\$216,000	\$3,773,000	\$1,836,000	\$800,000	\$6,906,000
	AVERAGE	\$130,000	\$113,000	\$1,749,000	\$851,000	\$371,000	\$3,213,000
	TOTAL	\$3,511,000	\$3,039,000	\$47,219,000	\$22,981,000	\$10,013,000	\$86,762,000

Table 125: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$332,000	-\$332,000	-\$332,000
Year -3	2019	\$0	\$429,000	-\$429,000	-\$761,000
Year -2	2020	\$0	\$833,000	-\$833,000	-\$1,594,000
Year -1	2021	\$0	\$303,000	-\$303,000	-\$1,898,000
Year 0	2022	\$0	\$196,000	-\$196,000	-\$2,094,000
Year 1	2023	\$1,261,000	\$191,000	\$1,070,000	-\$1,024,000
Year 2	2024	\$1,474,000	\$185,000	\$1,289,000	\$265,000
Year 3	2025	\$1,671,000	\$180,000	\$1,491,000	\$1,756,000
Year 4	2026	\$1,852,000	\$175,000	\$1,677,000	\$3,434,000
Year 5	2027	\$2,018,000	\$169,000	\$1,849,000	\$5,283,000
Year 6	2028	\$2,171,000	\$164,000	\$2,006,000	\$7,289,000
Year 7	2029	\$2,310,000	\$160,000	\$2,150,000	\$9,439,000
Year 8	2030	\$2,437,000	\$155,000	\$2,281,000	\$11,721,000
Year 9	2031	\$2,551,000	\$151,000	\$2,401,000	\$14,121,000
Year 10	2032	\$2,655,000	\$146,000	\$2,509,000	\$16,630,000
Year 11	2033	\$2,748,000	\$142,000	\$2,606,000	\$19,237,000
Year 12	2034	\$2,832,000	\$138,000	\$2,694,000	\$21,930,000
Year 13	2035	\$2,905,000	\$134,000	\$2,772,000	\$24,702,000
Year 14	2036	\$2,970,000	\$130,000	\$2,841,000	\$27,543,000
Year 15	2037	\$3,027,000	\$126,000	\$2,901,000	\$30,444,000
Year 16	2038	\$3,076,000	\$122,000	\$2,954,000	\$33,397,000
Year 17	2039	\$3,118,000	\$119,000	\$2,999,000	\$36,396,000
Year 18	2040	\$3,152,000	\$115,000	\$3,037,000	\$39,433,000
Year 19	2041	\$3,180,000	\$112,000	\$3,068,000	\$42,501,000
Year 20	2042	\$3,202,000	\$109,000	\$3,093,000	\$45,594,000
INTERNAL RATE OF RETURN					35.86%
NET PRESENT VALUE (3% DISCOUNT RATE)					\$45,590,000
BENEFIT - COST RATIO					10.1

Table 126: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$307,000	-\$307,000	-\$307,000
Year -3	2019	\$0	\$383,000	-\$383,000	-\$690,000
Year -2	2020	\$0	\$716,000	-\$716,000	-\$1,406,000
Year -1	2021	\$0	\$251,000	-\$251,000	-\$1,657,000
Year 0	2022	\$0	\$156,000	-\$156,000	-\$1,813,000
Year 1	2023	\$966,000	\$146,000	\$820,000	-\$993,000
Year 2	2024	\$1,087,000	\$136,000	\$950,000	-\$43,000
Year 3	2025	\$1,186,000	\$128,000	\$1,058,000	\$1,016,000
Year 4	2026	\$1,265,000	\$119,000	\$1,146,000	\$2,162,000
Year 5	2027	\$1,327,000	\$111,000	\$1,216,000	\$3,378,000
Year 6	2028	\$1,374,000	\$104,000	\$1,270,000	\$4,648,000
Year 7	2029	\$1,408,000	\$97,000	\$1,310,000	\$5,958,000
Year 8	2030	\$1,429,000	\$91,000	\$1,338,000	\$7,296,000
Year 9	2031	\$1,441,000	\$85,000	\$1,356,000	\$8,652,000
Year 10	2032	\$1,443,000	\$79,000	\$1,364,000	\$10,016,000
Year 11	2033	\$1,438,000	\$74,000	\$1,364,000	\$11,379,000
Year 12	2034	\$1,426,000	\$69,000	\$1,357,000	\$12,736,000
Year 13	2035	\$1,409,000	\$65,000	\$1,344,000	\$14,080,000
Year 14	2036	\$1,386,000	\$61,000	\$1,326,000	\$15,406,000
Year 15	2037	\$1,360,000	\$57,000	\$1,303,000	\$16,709,000
Year 16	2038	\$1,330,000	\$53,000	\$1,277,000	\$17,987,000
Year 17	2039	\$1,298,000	\$49,000	\$1,248,000	\$19,235,000
Year 18	2040	\$1,263,000	\$46,000	\$1,217,000	\$20,452,000
Year 19	2041	\$1,227,000	\$43,000	\$1,184,000	\$21,636,000
Year 20	2042	\$1,189,000	\$40,000	\$1,149,000	\$22,784,000
INTERNAL RATE OF RETURN					30.78%
NET PRESENT VALUE (7% DISCOUNT RATE)					\$22,780,000
BENEFIT - COST RATIO					7.6

Appendix Y: Yucca Valley

Table 127: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$179,213	\$0	\$0	\$179,213
Year -3	2019	\$238,950	\$0	\$0	\$238,950
Year -2	2020	\$477,900	\$0	\$0	\$477,900
Year -1	2021	\$179,213	\$0	\$0	\$179,213
Year 0	2022	\$119,475	\$0	\$0	\$119,475
Year 1	2023	\$0	\$119,475	\$0	\$119,475
Year 2	2024	\$0	\$119,475	\$0	\$119,475
Year 3	2025	\$0	\$119,475	\$0	\$119,475
Year 4	2026	\$0	\$119,475	\$0	\$119,475
Year 5	2027	\$0	\$119,475	\$0	\$119,475
Year 6	2028	\$0	\$119,475	\$0	\$119,475
Year 7	2029	\$0	\$119,475	\$0	\$119,475
Year 8	2030	\$0	\$119,475	\$0	\$119,475
Year 9	2031	\$0	\$119,475	\$0	\$119,475
Year 10	2032	\$0	\$119,475	\$0	\$119,475
Year 11	2033	\$0	\$119,475	\$0	\$119,475
Year 12	2034	\$0	\$119,475	\$0	\$119,475
Year 13	2035	\$0	\$119,475	\$0	\$119,475
Year 14	2036	\$0	\$119,475	\$0	\$119,475
Year 15	2037	\$0	\$119,475	\$0	\$119,475
Year 16	2038	\$0	\$119,475	\$0	\$119,475
Year 17	2039	\$0	\$119,475	\$0	\$119,475
Year 18	2040	\$0	\$119,475	\$0	\$119,475
Year 19	2041	\$0	\$119,475	\$0	\$119,475
Year 20	2042	\$0	\$119,475	\$0	\$119,475
	AVERAGE	\$44,000	\$89,000	\$0	\$133,000
	TOTAL	\$1,194,751	\$2,389,500	\$0	\$3,584,251

Table 128: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -6	2016	1,689,000	968,000	762,000
Year -5	2017	1,718,000	985,000	775,000
Year -4	2018	1,748,000	1,002,000	788,000
Year -3	2019	1,778,000	1,019,000	801,000
Year -2	2020	1,807,000	1,035,000	815,000
Year -1	2021	1,837,000	1,052,000	828,000
Year 0	2022	1,867,000	1,069,000	841,000
Year 1	2023	2,073,000	1,190,000	930,000
Year 2	2024	2,284,000	1,315,000	1,022,000
Year 3	2025	2,501,000	1,442,000	1,115,000
Year 4	2026	2,722,000	1,573,000	1,211,000
Year 5	2027	2,948,000	1,706,000	1,309,000
Year 6	2028	3,179,000	1,843,000	1,409,000
Year 7	2029	3,415,000	1,982,000	1,512,000
Year 8	2030	3,656,000	2,124,000	1,617,000
Year 9	2031	3,903,000	2,270,000	1,723,000
Year 10	2032	4,154,000	2,418,000	1,832,000
Year 11	2033	4,410,000	2,569,000	1,943,000
Year 12	2034	4,671,000	2,723,000	2,057,000
Year 13	2035	4,937,000	2,881,000	2,172,000
Year 14	2036	5,208,000	3,041,000	2,290,000
Year 15	2037	5,484,000	3,204,000	2,410,000
Year 16	2038	5,765,000	3,370,000	2,532,000
Year 17	2039	6,051,000	3,539,000	2,656,000
Year 18	2040	6,342,000	3,711,000	2,782,000
Year 19	2041	6,638,000	3,887,000	2,911,000
Year 20	2042	6,939,000	4,065,000	3,041,000
	AVERAGE	3,693,000	2,148,000	1,633,000
	TOTAL	99,724,000	57,983,000	44,084,000

Table 129: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -6	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2023	\$47,000	\$87,000	\$634,000	\$309,000	\$135,000	\$1,212,000
Year 2	2024	\$52,000	\$89,000	\$697,000	\$339,000	\$148,000	\$1,325,000
Year 3	2025	\$57,000	\$91,000	\$761,000	\$370,000	\$161,000	\$1,440,000
Year 4	2026	\$61,000	\$94,000	\$826,000	\$402,000	\$175,000	\$1,559,000
Year 5	2027	\$66,000	\$96,000	\$893,000	\$435,000	\$189,000	\$1,679,000
Year 6	2028	\$72,000	\$98,000	\$961,000	\$468,000	\$204,000	\$1,803,000
Year 7	2029	\$77,000	\$100,000	\$1,031,000	\$502,000	\$219,000	\$1,929,000
Year 8	2030	\$82,000	\$102,000	\$1,103,000	\$537,000	\$234,000	\$2,057,000
Year 9	2031	\$87,000	\$104,000	\$1,175,000	\$572,000	\$249,000	\$2,188,000
Year 10	2032	\$93,000	\$106,000	\$1,250,000	\$608,000	\$265,000	\$2,322,000
Year 11	2033	\$99,000	\$108,000	\$1,325,000	\$645,000	\$281,000	\$2,459,000
Year 12	2034	\$104,000	\$110,000	\$1,403,000	\$683,000	\$298,000	\$2,598,000
Year 13	2035	\$110,000	\$112,000	\$1,481,000	\$721,000	\$314,000	\$2,739,000
Year 14	2036	\$116,000	\$114,000	\$1,562,000	\$760,000	\$331,000	\$2,883,000
Year 15	2037	\$122,000	\$116,000	\$1,643,000	\$800,000	\$349,000	\$3,030,000
Year 16	2038	\$128,000	\$118,000	\$1,730,000	\$840,000	\$366,000	\$3,180,000
Year 17	2039	\$135,000	\$120,000	\$1,811,000	\$882,000	\$384,000	\$3,332,000
Year 18	2040	\$141,000	\$122,000	\$1,898,000	\$924,000	\$403,000	\$3,486,000
Year 19	2041	\$148,000	\$123,000	\$1,985,000	\$966,000	\$421,000	\$3,644,000
Year 20	2042	\$154,000	\$125,000	\$2,074,000	\$1,010,000	\$440,000	\$3,804,000
	AVERAGE	\$72,000	\$79,000	\$972,000	\$473,000	\$206,000	\$1,803,000
	TOTAL	\$1,951,000	\$2,135,000	\$26,243,000	\$12,773,000	\$5,566,000	\$48,669,000

Table 130: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$169,000	-\$169,000	-\$169,000
Year -3	2019	\$0	\$219,000	-\$219,000	-\$388,000
Year -2	2020	\$0	\$425,000	-\$425,000	-\$812,000
Year -1	2021	\$0	\$155,000	-\$155,000	-\$967,000
Year 0	2022	\$0	\$100,000	-\$100,000	-\$1,067,000
Year 1	2023	\$985,000	\$97,000	\$888,000	-\$179,000
Year 2	2024	\$1,046,000	\$94,000	\$952,000	\$773,000
Year 3	2025	\$1,104,000	\$92,000	\$1,012,000	\$1,785,000
Year 4	2026	\$1,160,000	\$89,000	\$1,071,000	\$2,856,000
Year 5	2027	\$1,213,000	\$86,000	\$1,127,000	\$3,983,000
Year 6	2028	\$1,264,000	\$84,000	\$1,181,000	\$5,163,000
Year 7	2029	\$1,313,000	\$81,000	\$1,232,000	\$6,395,000
Year 8	2030	\$1,360,000	\$79,000	\$1,281,000	\$7,676,000
Year 9	2031	\$1,405,000	\$77,000	\$1,328,000	\$9,004,000
Year 10	2032	\$1,447,000	\$74,000	\$1,373,000	\$10,377,000
Year 11	2033	\$1,487,000	\$72,000	\$1,415,000	\$11,792,000
Year 12	2034	\$1,526,000	\$70,000	\$1,456,000	\$13,248,000
Year 13	2035	\$1,562,000	\$68,000	\$1,494,000	\$14,742,000
Year 14	2036	\$1,596,000	\$66,000	\$1,530,000	\$16,272,000
Year 15	2037	\$1,629,000	\$64,000	\$1,565,000	\$17,837,000
Year 16	2038	\$1,659,000	\$62,000	\$1,597,000	\$19,434,000
Year 17	2039	\$1,688,000	\$61,000	\$1,628,000	\$21,062,000
Year 18	2040	\$1,715,000	\$59,000	\$1,656,000	\$22,718,000
Year 19	2041	\$1,740,000	\$57,000	\$1,683,000	\$24,401,000
Year 20	2042	\$1,764,000	\$55,000	\$1,708,000	\$26,109,000
				INTERNAL RATE OF RETURN	41.54%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$26,110,000
				BENEFIT - COST RATIO	11.2

Table 131: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -6	2016	\$0	\$0	\$0	\$0
Year -5	2017	\$0	\$0	\$0	\$0
Year -4	2018	\$0	\$157,000	-\$157,000	-\$157,000
Year -3	2019	\$0	\$195,000	-\$195,000	-\$352,000
Year -2	2020	\$0	\$365,000	-\$365,000	-\$716,000
Year -1	2021	\$0	\$128,000	-\$128,000	-\$844,000
Year 0	2022	\$0	\$80,000	-\$80,000	-\$924,000
Year 1	2023	\$755,000	\$74,000	\$680,000	-\$243,000
Year 2	2024	\$771,000	\$70,000	\$702,000	\$458,000
Year 3	2025	\$783,000	\$65,000	\$718,000	\$1,177,000
Year 4	2026	\$792,000	\$61,000	\$732,000	\$1,908,000
Year 5	2027	\$798,000	\$57,000	\$741,000	\$2,649,000
Year 6	2028	\$800,000	\$53,000	\$747,000	\$3,397,000
Year 7	2029	\$800,000	\$50,000	\$751,000	\$4,147,000
Year 8	2030	\$798,000	\$46,000	\$751,000	\$4,899,000
Year 9	2031	\$793,000	\$43,000	\$750,000	\$5,649,000
Year 10	2032	\$787,000	\$40,000	\$746,000	\$6,395,000
Year 11	2033	\$778,000	\$38,000	\$740,000	\$7,135,000
Year 12	2034	\$769,000	\$35,000	\$733,000	\$7,869,000
Year 13	2035	\$757,000	\$33,000	\$724,000	\$8,593,000
Year 14	2036	\$745,000	\$31,000	\$714,000	\$9,307,000
Year 15	2037	\$732,000	\$29,000	\$703,000	\$10,010,000
Year 16	2038	\$718,000	\$27,000	\$691,000	\$10,701,000
Year 17	2039	\$703,000	\$25,000	\$678,000	\$11,379,000
Year 18	2040	\$687,000	\$24,000	\$664,000	\$12,042,000
Year 19	2041	\$671,000	\$22,000	\$649,000	\$12,692,000
Year 20	2042	\$655,000	\$21,000	\$634,000	\$13,326,000
				INTERNAL RATE OF RETURN	36.25%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$13,330,000
				BENEFIT - COST RATIO	8.5

Appendix Z: SBCTA Region

Table 132: Costs

Project Year	Year	Capital Costs	Maintenance Costs	Travel Time/Delays	Annual Costs
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$10,239,041	\$0	\$0	\$10,239,041
Year -6	2019	\$13,898,525	\$0	\$0	\$13,898,525
Year -5	2020	\$17,040,127	\$0	\$0	\$17,040,127
Year -4	2021	\$8,981,730	\$0	\$0	\$8,981,730
Year -3	2022	\$7,339,957	\$0	\$0	\$7,339,957
Year -2	2023	\$3,492,794	\$0	\$0	\$3,492,794
Year -1	2024	\$394,260	\$0	\$0	\$394,260
Year 0	2025	\$394,260	\$0	\$0	\$394,260
Year 1	2026	\$0	\$6,178,069	\$0	\$6,178,069
Year 2	2027	\$0	\$6,178,069	\$0	\$6,178,069
Year 3	2028	\$0	\$6,178,069	\$0	\$6,178,069
Year 4	2029	\$0	\$6,178,069	\$0	\$6,178,069
Year 5	2030	\$0	\$6,178,069	\$0	\$6,178,069
Year 6	2031	\$0	\$6,178,069	\$0	\$6,178,069
Year 7	2032	\$0	\$6,178,069	\$0	\$6,178,069
Year 8	2033	\$0	\$6,178,069	\$0	\$6,178,069
Year 9	2034	\$0	\$6,178,069	\$0	\$6,178,069
Year 10	2035	\$0	\$6,178,069	\$0	\$6,178,069
Year 11	2036	\$0	\$6,178,069	\$0	\$6,178,069
Year 12	2037	\$0	\$6,178,069	\$0	\$6,178,069
Year 13	2038	\$0	\$6,178,069	\$0	\$6,178,069
Year 14	2039	\$0	\$6,178,069	\$0	\$6,178,069
Year 15	2040	\$0	\$6,178,069	\$0.0	\$6,178,069
Year 16	2041	\$0	\$6,178,069	\$0.0	\$6,178,069
Year 17	2042	\$0	\$6,178,069	\$0.0	\$6,178,069
Year 18	2043	\$0	\$6,178,069	\$0.0	\$6,178,069
Year 19	2044	\$0	\$6,178,069	\$0.0	\$6,178,069
Year 20	2045	\$0	\$6,178,069	\$0.0	\$6,178,069
	AVERAGE	\$2,059,000	\$3,890,000	\$0	\$6,178,000
	TOTAL	\$61,780,694	\$105,027,173	\$0	\$166,807,867

Table 133: Mode Shift

Project Year	Year	Annual Bike/Ped Trips	Annual Vehicle Trip Reductions	Annual VMT Reduction
Year -9	2016	78,944,000	46,163,000	38,841,000
Year -8	2017	80,934,000	47,320,000	39,808,000
Year -7	2018	82,925,000	48,477,000	40,776,000
Year -6	2019	84,915,000	49,635,000	41,744,000
Year -5	2020	86,906,000	50,792,000	42,712,000
Year -4	2021	88,897,000	51,949,000	43,680,000
Year -3	2022	90,887,000	53,107,000	44,647,000
Year -2	2023	92,878,000	54,264,000	45,615,000
Year -1	2024	94,869,000	55,421,000	46,583,000
Year 0	2025	96,859,000	56,579,000	47,551,000
Year 1	2026	121,566,000	71,669,000	57,584,000
Year 2	2027	147,150,000	87,297,000	67,968,000
Year 3	2028	173,611,000	103,465,000	78,702,000
Year 4	2029	200,948,000	120,171,000	89,786,000
Year 5	2030	229,163,000	137,415,000	101,220,000
Year 6	2031	258,254,000	155,199,000	113,004,000
Year 7	2032	288,222,000	173,520,000	125,139,000
Year 8	2033	319,067,000	192,381,000	137,624,000
Year 9	2034	350,789,000	211,780,000	150,459,000
Year 10	2035	383,388,000	231,718,000	163,644,000
Year 11	2036	416,864,000	252,194,000	177,179,000
Year 12	2037	451,217,000	273,209,000	191,065,000
Year 13	2038	486,447,000	294,762,000	205,301,000
Year 14	2039	522,553,000	316,854,000	219,887,000
Year 15	2040	559,537,000	339,485,000	234,824,000
Year 16	2041	597,397,000	362,654,000	250,110,000
Year 17	2042	636,134,000	386,362,000	265,747,000
Year 18	2043	675,749,000	410,609,000	281,734,000
Year 19	2044	716,240,000	435,394,000	298,071,000
Year 20	2045	757,608,000	460,718,000	314,758,000
	AVERAGE	305,697,000	184,352,000	131,859,000
	TOTAL	9,170,918,000	5,530,563,000	3,955,763,000

Table 134: Benefits

Project Year	Year	Annual Environmental Sustainability Benefits	Annual Quality of Life Benefits	Annual Economic Competitiveness Benefits	Annual Safety Benefits	Annual State of Good Repair Benefits	Annual Benefits
Year -9	2016	\$0	\$0	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$0	\$0	\$0	\$0	\$0
Year -6	2019	\$0	\$0	\$0	\$0	\$0	\$0
Year -5	2020	\$0	\$0	\$0	\$0	\$0	\$0
Year -4	2021	\$0	\$0	\$0	\$0	\$0	\$0
Year -3	2022	\$0	\$0	\$0	\$0	\$0	\$0
Year -2	2023	\$0	\$0	\$0	\$0	\$0	\$0
Year -1	2024	\$0	\$0	\$0	\$0	\$0	\$0
Year 0	2025	\$0	\$0	\$0	\$0	\$0	\$0
Year 1	2026	\$2,921,000	\$6,058,000	\$39,665,000	\$11,656,000	\$8,331,000	\$68,631,000
Year 2	2027	\$3,448,000	\$5,864,000	\$46,817,000	\$13,758,000	\$9,833,000	\$79,721,000
Year 3	2028	\$3,993,000	\$5,657,000	\$54,210,000	\$15,931,000	\$11,386,000	\$91,177,000
Year 4	2029	\$4,555,000	\$5,436,000	\$61,845,000	\$18,174,000	\$12,990,000	\$103,000,000
Year 5	2030	\$5,135,000	\$5,200,000	\$69,721,000	\$20,489,000	\$14,644,000	\$115,189,000
Year 6	2031	\$5,733,000	\$4,951,000	\$77,838,000	\$22,874,000	\$16,349,000	\$127,745,000
Year 7	2032	\$6,349,000	\$4,688,000	\$86,197,000	\$25,330,000	\$18,105,000	\$140,668,000
Year 8	2033	\$6,982,000	\$4,411,000	\$94,796,000	\$27,857,000	\$19,911,000	\$153,958,000
Year 9	2034	\$7,633,000	\$4,120,000	\$103,637,000	\$30,456,000	\$21,768,000	\$167,614,000
Year 10	2035	\$8,302,000	\$3,815,000	\$112,719,000	\$33,124,000	\$23,675,000	\$181,636,000
Year 11	2036	\$8,989,000	\$3,496,000	\$122,043,000	\$35,864,000	\$25,634,000	\$196,026,000
Year 12	2037	\$9,693,000	\$3,163,000	\$131,607,000	\$38,675,000	\$27,643,000	\$210,781,000
Year 13	2038	\$10,416,000	\$2,817,000	\$141,410,000	\$41,557,000	\$29,702,000	\$225,904,000
Year 14	2039	\$11,156,000	\$2,456,000	\$151,460,000	\$44,509,000	\$31,812,000	\$241,393,000
Year 15	2040	\$11,913,000	\$2,081,000	\$161,749,000	\$47,532,000	\$33,973,000	\$257,249,000
Year 16	2041	\$12,689,000	\$1,693,000	\$172,278,000	\$50,627,000	\$36,185,000	\$273,472,000
Year 17	2042	\$13,482,000	\$1,291,000	\$183,049,000	\$53,792,000	\$38,447,000	\$290,061,000
Year 18	2043	\$14,293,000	\$874,000	\$194,061,000	\$57,028,000	\$40,760,000	\$307,016,000
Year 19	2044	\$15,122,000	\$444,000	\$205,314,000	\$60,335,000	\$43,124,000	\$324,339,000
Year 20	2045	\$15,969,000	\$0	\$216,809,000	\$63,713,000	\$45,538,000	\$342,028,000
AVERAGE		\$5,959,000	\$2,284,000	\$80,908,000	\$23,776,000	\$16,994,000	\$129,920,000
TOTAL		\$178,773,000	\$68,515,000	\$2,427,225,000	\$713,281,000	\$509,810,000	\$3,897,608,000

Table 135: Costs and Benefits (discounted 3%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$9,651,000	-\$9,651,000	-\$9,651,000
Year -6	2019	\$0	\$12,719,000	-\$12,719,000	-\$22,370,000
Year -5	2020	\$0	\$15,140,000	-\$15,140,000	-\$37,510,000
Year -4	2021	\$0	\$7,748,000	-\$7,748,000	-\$45,258,000
Year -3	2022	\$0	\$6,147,000	-\$6,147,000	-\$51,405,000
Year -2	2023	\$0	\$2,840,000	-\$2,840,000	-\$54,245,000
Year -1	2024	\$0	\$311,000	-\$311,000	-\$54,556,000
Year 0	2025	\$0	\$302,000	-\$302,000	-\$54,859,000
Year 1	2026	\$51,068,000	\$4,597,000	\$46,471,000	-\$8,388,000
Year 2	2027	\$57,592,000	\$4,463,000	\$53,129,000	\$44,741,000
Year 3	2028	\$63,950,000	\$4,333,000	\$59,616,000	\$104,357,000
Year 4	2029	\$70,138,000	\$4,207,000	\$65,931,000	\$170,288,000
Year 5	2030	\$76,154,000	\$4,084,000	\$72,069,000	\$242,358,000
Year 6	2031	\$81,995,000	\$3,965,000	\$78,029,000	\$320,387,000
Year 7	2032	\$87,660,000	\$3,850,000	\$83,810,000	\$404,197,000
Year 8	2033	\$93,147,000	\$3,738,000	\$89,409,000	\$493,606,000
Year 9	2034	\$98,455,000	\$3,629,000	\$94,826,000	\$588,432,000
Year 10	2035	\$103,585,000	\$3,523,000	\$100,061,000	\$688,493,000
Year 11	2036	\$108,535,000	\$3,421,000	\$105,114,000	\$793,607,000
Year 12	2037	\$113,305,000	\$3,321,000	\$109,984,000	\$903,592,000
Year 13	2038	\$117,898,000	\$3,224,000	\$114,673,000	\$1,018,265,000
Year 14	2039	\$122,312,000	\$3,130,000	\$119,182,000	\$1,137,447,000
Year 15	2040	\$126,550,000	\$3,039,000	\$123,510,000	\$1,260,957,000
Year 16	2041	\$130,612,000	\$2,951,000	\$127,661,000	\$1,388,618,000
Year 17	2042	\$134,500,000	\$2,865,000	\$131,635,000	\$1,520,253,000
Year 18	2043	\$138,215,000	\$2,781,000	\$135,434,000	\$1,655,687,000
Year 19	2044	\$141,761,000	\$2,700,000	\$139,061,000	\$1,794,747,000
Year 20	2045	\$145,138,000	\$2,622,000	\$142,517,000	\$1,937,264,000
				INTERNAL RATE OF RETURN	30.02%
				NET PRESENT VALUE (3% DISCOUNT RATE)	\$1,937,260,000
				BENEFIT - COST RATIO	16.5

Table 136: Costs and Benefits (discounted 7%, by regional responsibility)

Project Year	Year	Annual Benefits	Annual Costs	Net Costs and Benefits	Net Cumulative Costs and Benefits
Year -9	2016	\$0	\$0	\$0	\$0
Year -8	2017	\$0	\$0	\$0	\$0
Year -7	2018	\$0	\$8,943,000	-\$8,943,000	-\$8,943,000
Year -6	2019	\$0	\$11,345,000	-\$11,345,000	-\$20,289,000
Year -5	2020	\$0	\$13,000,000	-\$13,000,000	-\$33,288,000
Year -4	2021	\$0	\$6,404,000	-\$6,404,000	-\$39,692,000
Year -3	2022	\$0	\$4,891,000	-\$4,891,000	-\$44,583,000
Year -2	2023	\$0	\$2,175,000	-\$2,175,000	-\$46,758,000
Year -1	2024	\$0	\$229,000	-\$229,000	-\$46,988,000
Year 0	2025	\$0	\$214,000	-\$214,000	-\$47,202,000
Year 1	2026	\$34,889,000	\$3,141,000	\$31,748,000	-\$15,454,000
Year 2	2027	\$37,875,000	\$2,935,000	\$34,940,000	\$19,485,000
Year 3	2028	\$40,484,000	\$2,743,000	\$37,740,000	\$57,226,000
Year 4	2029	\$42,741,000	\$2,564,000	\$40,178,000	\$97,403,000
Year 5	2030	\$44,672,000	\$2,396,000	\$42,276,000	\$139,680,000
Year 6	2031	\$46,301,000	\$2,239,000	\$44,062,000	\$183,741,000
Year 7	2032	\$47,649,000	\$2,093,000	\$45,556,000	\$229,298,000
Year 8	2033	\$48,739,000	\$1,956,000	\$46,783,000	\$276,081,000
Year 9	2034	\$49,591,000	\$1,828,000	\$47,763,000	\$323,844,000
Year 10	2035	\$50,224,000	\$1,708,000	\$48,516,000	\$372,359,000
Year 11	2036	\$50,657,000	\$1,597,000	\$49,060,000	\$421,420,000
Year 12	2037	\$50,906,000	\$1,492,000	\$49,414,000	\$470,834,000
Year 13	2038	\$50,990,000	\$1,394,000	\$49,595,000	\$520,429,000
Year 14	2039	\$50,921,000	\$1,303,000	\$49,618,000	\$570,047,000
Year 15	2040	\$50,716,000	\$1,218,000	\$49,498,000	\$619,545,000
Year 16	2041	\$50,387,000	\$1,138,000	\$49,249,000	\$668,793,000
Year 17	2042	\$49,947,000	\$1,064,000	\$48,883,000	\$717,677,000
Year 18	2043	\$49,408,000	\$994,000	\$48,414,000	\$766,091,000
Year 19	2044	\$48,781,000	\$929,000	\$47,852,000	\$813,943,000
Year 20	2045	\$48,076,000	\$868,000	\$47,208,000	\$861,151,000
				INTERNAL RATE OF RETURN	25.16%
				NET PRESENT VALUE (7% DISCOUNT RATE)	\$861,150,000
				BENEFIT - COST RATIO	11.4

ENDNOTES

- ⁱ Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, EPA (2008). <<https://www3.epa.gov/otaq/consumer/420f08024.pdf>>
- ⁱⁱ Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, EPA (2008). <<https://www3.epa.gov/otaq/consumer/420f08024.pdf>>
- ⁱⁱⁱ Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, EPA (2008). <<https://www3.epa.gov/otaq/consumer/420f08024.pdf>>
- ^{iv} Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks, EPA (2008). <<https://www3.epa.gov/otaq/consumer/420f08024.pdf>>
- ^v Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866. <<https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc-td-final-july-2015.pdf>>
- ^{vi} State Indicators Report on Physical Activity, CDC. (2014) <http://www.cdc.gov/physicalactivity/downloads/pa_state_indicator_report_2014.pdf>
- ^{vii} Inadequate Physical Activity and Health Care Expenditures in the United States. <<http://www.cdc.gov/nccdphp/dnpao/docs/carlson-physical-activity-and-healthcare-expenditures-final-508tagged.pdf>>
- ^{viii} "Our Driving Costs, AAA (2016). <http://exchange.aaa.com/automobiles-travel/automobiles/driving-costs/#.Vw_xCPkrKUK>
- ^{ix} Crashes vs. Congestion: What's the Cost to Society? AAA (2011). <http://www.camsys.com/pubs/2011_AAA_CrashvCongUpd.pdf>
- ^{ix} Kitamura, R., Zhao, H., and Gubby, A. R. Development of a Pavement Maintenance Cost Allocation Model. Institute of Transportation Studies, University of California, Davis. <<https://trid.trb.org/view.aspx?id=261768>>
- ^x Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis (Revision 2 - corrected). <<http://www.dot.gov/office-policy/transportation-policy/guidance-value-time>>
- ^{xi} Crashes vs. Congestion: What's the Cost to Society? AAA (2011). <http://www.camsys.com/pubs/2011_AAA_CrashvCongUpd.pdf>
- ^{xiii} Kitamura, R., Zhao, H., and Gubby, A. R. Development of a Pavement Maintenance Cost Allocation Model. Institute of Transportation Studies, University of California, Davis. <<https://trid.trb.org/view.aspx?id=261768>>