

Benefit-Cost Analysis Results

Summary Tables

Overall Benefit Cost Analysis Results (in millions of 2019\$)

Merit Criteria	Benefit Category	Results (7% Discount Rate)
State of Good Repair	Residual value of capital investment	\$1.0
	Travel time savings to roadway users	\$61.5
Economic	Vehicle operating cost savings to roadway users	\$7.0
Competitiveness	Jobs creation	Qualitative
	Improved land access	Qualitative
Quality of Life	Improved jobs access	Qualitative
Environmental Sustainability	Emission cost savings	\$0.9
Safety	Accident cost savings	\$3.7
Total Project Benefits		\$74.1

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	Results (7% Discount Rate)
Total Discounted Benefits	\$74.1
Total Discounted Costs	\$16.4
Net Present Value	\$57.7
Benefit-Cost Ratio	4.6
Real Internal Rate of Return	26.0%

Benefit-Cost Analysis Results (in millions of 2019\$)*

Benefit and Cost Metrics	2022-2046 Totals	
	Discounted at 7% ***	Before Discounting
Project Benefits		
Travel Time Savings	\$61.5	\$182.0
Vehicle Operating Cost Savings	\$7.0	\$21.0
Emission Savings (Carbon)	\$0.7	\$1.2
Emission Savings (non-Carbon)	\$0.2	\$0.5
Safety	\$3.7	\$9.7
Residual Value	\$1.0	\$5.4
Total Benefits	\$74.1	\$230.0
Project Costs		
Capital	\$16.0	\$20.8
O&M Costs	\$0.4	\$1.0
Total Project Costs	\$16.4	\$21.8
Total Benefits less Total Costs (NPV)	\$57.7	\$208.2
Benefit-Cost Ratio**	4.6	
Internal Rate of Return	26%	
Breakeven Year	2031	

* Unless specified otherwise. **Note that the Benefit-Cost Ratio was calculated as: (Benefits – O&M Costs) / Capital Costs, in compliance with the latest Benefit-Cost Guidance for Discretionary Grant Programs. *** CO2 emissions are discounted at the annual rate of 3%.

\$213.0

Annual Projections of Total Project Benefits and Costs (millions of 2019\$)

Calendar Year	Project Year	Total Benefits	Total Costs	Net Benefits Before Discounting	Net Benefits Discounted at 7%
2022	1	\$0.0	\$0.4	(\$0.4)	(\$0.4)
2023	2	\$0.0	\$2.0	(\$2.0)	(\$1.8)
2024	3	\$0.0	\$2.9	(\$2.9)	(\$2.4)
2025	4	\$0.0	\$8.3	(\$8.3)	(\$7.1)
2026	5	\$1.4	\$6.2	(\$4.8)	(\$3.4)
2027	6	\$4.8	\$0.1	\$4.7	\$3.1
2028	7	\$5.2	\$0.1	\$5.2	\$3.2
2029	8	\$5.8	\$0.1	\$5.7	\$3.9
2030	9	\$6.3	\$0.1	\$6.3	\$3.4
2031	10	\$6.9	\$0.1	\$6.8	\$3.5
2032	11	\$7.5	\$0.1	\$7.4	\$3.5
2033	12	\$6.1	\$0.1	\$6.0	\$3.6
2034	13	\$9.8	\$0.1	\$9.7	\$3.6
2035	14	\$9.5	\$0.1	\$9.4	\$3.7
2036	15	\$10.2	\$0.1	\$10.1	\$3.7
2037	16	\$10.9	\$0.1	\$10.8	\$3.7
2038	17	\$11.7	\$0.1	\$11.7	\$3.7
2039	18	\$12.6	\$0.1	\$12.5	\$3.7
2040	19	\$13.4	\$0.1	\$13.4	\$3.7
2041	20	\$14.4	\$0.1	\$14.3	\$3.7
2042	21	\$15.3	\$0.1	\$15.3	\$3.7
2043	22	\$16.3	\$0.1	\$16.3	\$3.7
2044	23	\$17.4	\$0.1	\$17.3	\$3.7
2045	24	\$18.5	\$0.1	\$18.4	\$3.7
2046	25	\$20.1	\$0.1	\$20.0	\$3.7
Totals (2022-2046)		\$230.0	\$21.8	\$208.2	\$57.7

Annual Projections of Total Project Monetized Benefits (millions of 2019\$)

Calendar Year	Project Year	State of Good Repair	Economic Competitiveness	Environmental Sustainability	Safety	Total Monetized Benefits
2022	1	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2023	2	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2024	3	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2025	4	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
2026	5	\$0.0	\$1.3	\$0.0	\$0.2	\$1.4
2027	6	\$0.0	\$4.2	\$0.0	\$0.6	\$4.8
2028	7	\$0.0	\$4.7	\$0.0	\$0.5	\$5.2
2029	8	\$0.0	\$5.2	\$0.0	\$0.6	\$5.8
2030	9	\$0.0	\$5.8	\$0.0	\$0.5	\$6.3
2031	10	\$0.0	\$6.3	\$0.1	\$0.5	\$6.9
2032	11	\$0.0	\$6.9	\$0.1	\$0.5	\$7.5
2033	12	\$0.0	\$7.6	\$0.1	\$0.5	\$8.1
2034	13	\$0.0	\$9.2	\$0.1	\$0.5	\$9.8
2035	14	\$0.0	\$8.9	\$0.1	\$0.5	\$9.5
2036	15	\$0.0	\$9.6	\$0.1	\$0.5	\$10.2
2037	16	\$0.0	\$10.4	\$0.1	\$0.5	\$10.9
2038	17	\$0.0	\$11.2	\$0.1	\$0.5	\$11.7
2039	18	\$0.0	\$12.0	\$0.1	\$0.5	\$12.6
2040	19	\$0.0	\$12.9	\$0.1	\$0.5	\$13.4
2041	20	\$0.0	\$13.8	\$0.1	\$0.5	\$14.4
2042	21	\$0.0	\$14.7	\$0.1	\$0.5	\$15.3
2043	22	\$0.0	\$15.7	\$0.1	\$0.5	\$16.3
2044	23	\$0.0	\$16.8	\$0.1	\$0.5	\$17.4
2045	24	\$0.0	\$17.9	\$0.1	\$0.5	\$18.5
2046	25	\$0.0	\$20.4	\$0.2	\$0.5	\$21.1
Totals (2022-2046)		\$5.4	\$213.0	\$1.8	\$9.7	\$230.0