

Brewer Connects: Improving Local and Regional Mobility Project
Maine Department of Transportation

U.S. Department of Transportation (USDOT)
FY 2026 Better Utilizing Investments to Leverage Development (BUILD) Grant Program
Funding Opportunity Number: DTOS59-26-RA-BUILD

BCA NARRATIVE

BENEFIT-COST ANALYSIS

The Benefit-Cost Analysis estimates that the Project will generate more than **\$51 million** in total undiscounted benefits over the 20-year analysis period, resulting from the \$11,604,964 investment. When evaluated on a discounted net present value (NPV) basis using a 7 percent real discount rate, consistent with current USDOT guidance (December 2025), the Project yields a Benefit-Cost Ratio (BCR) of **2.73:1**.

7% NPV Summary			
	Costs	Benefits	Discounted
Capital Cost	(\$9,438,646)		(\$5,894,730)
Maintenance Cost Savings		\$1,434,000	\$745,369
Safety		\$43,967,738	\$13,549,945
Travel Time Savings			
Vehicle Operating Cost Savings			
Emission Reductions			
Amenity Benefits		\$5,103,023	\$1,572,646
Health Benefits		\$739,663	\$227,949
Total	(\$9,438,646)	\$51,244,424	\$10,201,179
Net Present Value		\$10,201,179	
Benefit-Cost Ratio		2.73	

Monetized benefits result from several categories, including safety improvements, ongoing maintenance cost savings, and health and amenity enhancements. The majority of quantified benefits are attributable to reductions in crash frequency and severity, consistent with the Project’s primary objective of improving multimodal safety, especially in known high-crash locations.

All costs and benefits are expressed in constant 2024 dollars. Construction is anticipated to conclude in late 2032, therefore, the BCA assumes that full benefits begin accruing in 2033, the first full year of operation.

The ‘Inputs’ tab of the BCA spreadsheet summarizes the key assumptions, parameters, and data sources used in the analysis and provides supplemental explanatory notes.

Safety

Safety improvements constitute the largest share of total Project benefits. The Project area includes multiple documented High Crash Locations. Eight years of historical crash data were analyzed by Focus Area to determine average annual crash frequencies by severity using the KABCO classification system.

Crash reductions were estimated using applicable Crash Modification Factors (CMFs) from the FHWA’s CMF Clearinghouse. CMFs were selected to correspond with specific treatments, including raised crosswalks, pedestrian beacon signage, access management modifications, and lighting upgrades. Where multiple treatments apply within a Focus Area, an average was used to estimate future crash reductions.

By formalizing pedestrian crosswalks, improving intersection geometry, enhancing visibility, and increasing a driver’s need to yield to pedestrians, the Project is expected to meaningfully reduce both pedestrian-involved crashes and vehicle-to-vehicle conflicts associated with turning movements and access points. The resulting discounted safety benefit totals **\$13,549,945**, representing the largest component of total Project benefits.

Net Operations and Maintenance Costs

The Project reduces long-term maintenance needs by reconstructing deteriorated pavement, modernizing sidewalks, and improving drainage and roadway geometry. These improvements reduce both recurring annual maintenance activities and certain periodic rehabilitation treatments anticipated under the No-Build scenario.

Two one-time mill-and-fill pavement treatments are projected under the No-Build scenario prior to construction completion. Because the BCA template's operations and maintenance module begins in 2033, these treatments were modeled in the first available analysis year and documented to reflect their anticipated 2029 timing. This timing assumption lowers the present value of avoided costs and therefore results in a conservative estimate of maintenance savings.

The net present value of operations and maintenance savings under the Build scenario totals approximately **\$745,369**.

Amenity Benefits

Amenity benefits were calculated to reflect improvements in pedestrian and bicycle facility quality resulting from expanded sidewalks, new marked crosswalks, pedestrian signal enhancements, and new multi-use pathways. Per-trip benefit values were applied consistent with USDOT BCA guidance for sidewalk width expansion, marked crosswalk installation (where applicable), pedestrian signalization, and separated bicycle tracks.

For pedestrians, benefits reflect expanded sidewalk width (by up to 6 feet throughout the Focus Areas), enhanced crossings, and upgraded pedestrian signals. For cyclists, benefits reflect the addition of separated bicycle facilities in Focus Area 2 and Focus Area 3. Maximum pedestrian and cyclist trip lengths were applied, consistent with BCA guidance, to avoid overstating per-trip benefits.

Per-trip amenity values were multiplied by projected user volumes under the Build and No-Build scenarios, incorporating a conservative one-time 3 percent increase in non-motorized activity in the first full year of operation, followed by 0.3 percent annual growth consistent with regional population projections.

The resulting discounted net present value of amenity benefits totals approximately **\$1,572,646**.

Health Benefits

Improved walking and cycling conditions and opportunities are expected to increase physical activity levels. Health benefits reflect reductions in mortality risk associated with incremental increases in active transportation attributable to the Project.

The net present value of health benefits totals approximately **\$227,949**.

Unquantified Benefits

Project results may contribute to increases in adjacent property values and commercial activity associated with improved active transportation elements, streetscape enhancements, and better connectivity to downtown destinations and the Brewer Riverwalk. Improvements to ADA accessibility, pedestrian comfort, and overall corridor aesthetics can influence long-term development patterns and private investment decisions. These potential property value impacts were not monetized in the BCA to maintain a conservative analytical framework.

In addition, Focus Area 2 includes a new marked crosswalk and pedestrian signal that were not monetized under the amenity category because the corridor's traffic volumes fall below the threshold specified in USDOT's BCA guidance for applying per-trip crosswalk benefit values. While these improvements are expected to enhance pedestrian safety and comfort, they were excluded from the quantitative amenity calculation to ensure consistency with program guidance. As such, any associated user benefits are reflected qualitatively rather than monetized in the BCA.