

The Economic Value of the Waterbury Mixmaster

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The Waterbury Mixmaster is the nexus of regional and interstate travel in Waterbury, connecting the east-west traffic of I-84 with the north-south traffic of Connecticut Route 8. The Mixmaster is also an extensive series of elevated structures that span the Naugatuck River, Route 8, and significant parts of Waterbury's street system. East of Route 8, I-84 accommodates 133,000 vehicles daily. The Mixmaster, the only double-decked highway in Connecticut, was built in the 1960's and is in need of full reconstruction or replacement.

The Mixmaster is one of the *Let's Go CT* 'must-do' investments. It is first and foremost an infrastructure preservation project that is essential to keep this aging and deteriorating structure safe and functioning. But, it is also an important part of a larger effort to ease congestion in the larger I-84 corridor.

Summary. An economic analysis was conducted of the proposed **\$7.1 billion replacement** of the I-84/Route 8 Mixmaster in Waterbury. The analysis is part of Let's Go CT – the state's transportation program for restoring and transforming Connecticut's transportation system to support a strong and growing economy.

Two types of analyses were conducted. One method is a general assessment of the overall value of the Mixmaster to travelers, and the other is more narrowly focused on the impacts to the economy. The first is a **Benefit Cost Analysis** (BCA) that compares the cost of replacing the aging structure to the benefits to be gained by all users of a new I-84 facility in Waterbury. The second is an **Economic Impact Assessment** (EIA) that measures the impact of the Mixmaster on the state's economy – most importantly on business sales and output. **Both analyses show it to be a valuable transportation and economic asset that cannot be allowed to deteriorate without imposing huge costs on travelers, and causing major losses in business sales and output.**

The analyses were conducted as a worst case scenario intended to gauge the potential economic losses to the region if the structure deteriorates to an unsafe condition that requires closure. It assumes a decade of diminishing funding for repairs resulting in deterioration and then closure in 2026. Both the BCA and EIA for this worst case scenario clearly demonstrate that the **benefits of replacing the Mixmaster far outweigh the cost of constructing a new facility.**

Benefit Cost Analysis (BCA)

The BCA results are presented in **Table 1**. The analysis demonstrates that the benefits are well over one and one-half times greater than the cost of replacement. With a present value of future benefits estimated at **\$8.2 billion** and a present value of project cost of \$4.7 billion, the **benefit/cost ratio is 1.75**. This is a good B/C ratio for a major project that is primarily a state of good repair project. The Mixmaster is a double-decked viaduct built through center of Waterbury and requires replacement to keep it safe and functioning. The replacing the Mixmaster also provides an opportunity to reduce congestion, improve traffic safety and operations, and open new economic development opportunities for the City.

Table 1
Benefit/Cost Analysis: Long-term Costs & Benefits¹ of Replacement Versus Closure

Type of Benefit	Present Value of Benefits and Costs
Project Benefits	\$8.2 Billion
Project Costs	\$4.7 Billion
Net Benefits	\$3.5 Billion
Benefit/Cost Ratio	1.75

Economic Impact Assessment (EIA)

Long-Term Benefits. The long-term impacts of the Mixmaster on the economy are presented in **Table 2**. The analysis shows that the Mixmaster enables **\$8.8 billion** in long-term cumulative business sales and output. This represents the value of the Mixmaster to Connecticut's economy as compared to allowing it to deteriorate to an unsafe and unusable condition over the next decade.

Table 2
Economic Impact Assessment: Long-term Economic Growth Benefits²

Type of Economic Benefit	Cumulative amount of benefit from replacement
Additional Business Sales	\$8.8 Billion
Additional Gross State Product	\$5.1 Billion
Additional Wage Income	\$3.6 Billion

¹ The BCA method accounts for all future costs and benefits, but discounts or lowers the value of future costs and benefits to be comparable to current dollars. A discount or interest rate is applied to reflect the lower value of benefits received 20 years from now as compared to receiving benefits today. Costs are also discounted.

² Values for the EIA table are the cumulative totals for the stream of benefits over the study period which extends to 2050. They are not discounted as in the BCA, and the individual categories cannot be added since both Gross State Product and Wage Income are components of Business Sales.

Short-Term or Construction Benefits. The impacts of the Mixmaster’s construction spending on the economy were analyzed separately. These impacts are limited to the time period during project construction and are not considered to be a permanent boost to the economy. Construction impacts are presented in **Table 3**. Construction spending is expected to generate **\$10.4 billion** in additional business sales during the construction period.

Table 3
Economic Impact Assessment: Short-Term or “Construction” Impacts

Type of Economic Benefit	Cumulative amount of benefit from construction
Additional Business Sales	\$10.4 Billion
Additional Gross State Product	\$5.8 Billion
Additional Wage Income	\$4.5 Billion

Job Impacts. The economic impact of job growth is accounted for in the ‘Additional Wage Income’ reported in Tables 2 and 3. However, there is no good way to portray the *cumulative* job impacts, so these are presented separately in **Table 4**. Table 4 presents both the new jobs created during construction and the long-term or permanent jobs.

Construction Jobs. The project will provide a **major boost to construction and related** industries during the multi-year construction period. The construction project is expected to support **5,000 – 11,000 jobs** during the period of construction. However, these are not permanent jobs, and will mostly disappear once construction is complete.

Permanent Jobs. The long-term impact of the Mixmaster replacement on jobs will be substantial. For every year following the opening of the new facility, the improved transportation efficiency and lower travel and shipping costs will save households time and money, and create a competitive advantage for the region’s businesses. These transportation cost savings will support the creation of **2,000 – 3,000 jobs over the life of the new facility**

Table 4
Economic Impact Assessment: Construction & Permanent Jobs

Type of Job	Number of Jobs
<u>Construction Jobs</u> (for duration of construction)	5,000-11,000
<u>Permanent Jobs</u> (for the life of the Mixmaster)	2,000-3,000

Conclusions

The proposed \$7.1 billion replacement of the Waterbury Mixmaster is the most costly project in Let’s Go CT. However, it is absolutely essential that this structure, which spans a river, Waterbury’s downtown, and Route 8, be replaced to 21st-century standards to improve safety, and remove a major bottleneck on

one of Connecticut's busiest corridors. The replacement project is designed for longer life and lower maintenance needs. Over the long run, it will save the state money that would otherwise be spent in frequent, costly repairs.

The two economic analyses show the region and state will gain benefits that far exceed the cost of replacement.

- The **Benefit/Cost Analysis** shows that users will realize **\$8.2 billion** in user benefits such as reduced travel time, improved travel reliability, fewer accidents, and reduced vehicle operating costs. This provides a **B/C ratio** of **1.75**, or a return of 1.75 dollars for every dollar spent to build a replacement.
- The **Economic Impact Assessment** shows that the replacement will yield **\$8.8 billion** in business sales and output over a 25-30 year period after it is constructed.
- **Construction spending** will generate another **\$10.4 billion** in business sales during the period of construction.

The worst case scenario tested for this analysis demonstrates critical economic role the Waterbury Mixmaster plays in the region's and state's economy. It also shows why it is essential that the state replace this aging and critical piece of Connecticut's highway infrastructure.