

CITY OF WEST UNIVERSITY PLACE
BUFFALO SPEEDWAY COST BENEFIT ANALYSIS
NARRATIVE

A cost benefit analysis has been prepared for this project. Costs include estimated construction costs, engineering costs (including surveying, geotechnical, environmental and planning), construction observation (Inspection) costs and future maintenance costs. These are tabulated on the attached cost benefit analysis sheet.

Benefits accounted for in the analysis include point repairs that would be needed if the project were not to be completed, accident prevention costs and travel time savings.

Point Repairs

Point repairs were identified in a study/report prepared in May 2010 at an estimated project cost of \$550,750.00. For the purposes of this analysis, the estimated project cost has been escalated at 3% per year through 2045 (the span of the analysis). It was estimated that point repairs would be an on-going requirement approximately every 4 years.

Accident Prevention

Improving the roadway will increase safety by reducing both the frequency of accidents as well as the related costs of those accidents. . For the purposes of this analysis, the provided *Value of Injuries, TIGER BCA Resource Guide (2014)* was used. In the absence of accident data, certain assumptions were made as follows:

Minor Accident Prevented – 1 per month
Moderate Accident Prevented – 4 per year
Serious Accident Prevented – 2 per year
Severe Accident Prevented – 1 per year

Critical and Un-Survivable Accidents were discounted in the calculations.

The Resource Guide indicated that the increase in unit value over a two year period was approximately 4% or 2% per year. For the purposes of this analysis, the estimated total value was escalated at 2% per year through 2045.

Time Savings

An additional benefit of a better driving surface (combined with traffic signal synchronization and other improvements) will be time savings. For the purposes of this analysis, the provided weighted average *Value of Travel Time, TIGER BCA Resource Guide (2014)* was used. It was conservatively estimated that time savings would be the equivalent of 2 minutes per day for 50% of travelers. The number of travelers was calculated based on a traffic count of 24,000 vehicles per day with 1.5 person per vehicle making a total 36,000 travelers.

The Resource Guide indicated that the increase in unit value over a two year period was approximately 2% or 1% per year. For the purposes of this analysis, the estimated total value was escalated at 1% per

year through 2045. Strictly speaking the number of travelers would also increase each year but this has been discounted in this analysis since the number of travelers would likely diminish as the roadway capacity reaches saturation.

Cost Benefit Analysis

The cost and benefit data was tabulated on the Cost Benefit Analysis Sheet. The final Results Calculation table calculates the undiscounted cash flows as well as the discounted flows assuming Discount (Interest) Rates at both 7% and 3% with the resulting Net Present Values and Internal Rates of Return.