

Capital District Transportation Committee
2008 Unit Costs for Bike-Pedestrian Projects
April 25, 2008

Introduction

CDTC last refined its unit costs for shoulders (bikeway as part of the roadway), separate bikeways (multi-use path) and sidewalks in January 2003. CDTC is now updating them for the evaluation of bicycle & pedestrian projects after the 2007-12 update.

Recent Inflation

Since these costs were last updated, prices for construction materials have sharply risen. The New Visions 2030 financial task force found that construction prices (due largely to inflation of prices for materials) for highway construction, rose about 26% for the six-year period from 1999 to 2004 and 13% in 2005. Assuming that cost increases would be the same for bicycle and pedestrian projects, these factors must be applied for the time period 2002 to 2006. Taking one-half the 1999 to 2004 inflation (one-half of 26%) for the period 2002 to 2004 and the entire 13% from 2005 to 2006, results in 26% inflation for the period 2002 to 2006.

By contrast, CDTC applies 3% inflation to its candidates to allow for inflation between the programming and obligation of a project. If that inflation rate were applied instead, the aggregate rate would be about 15%.

Inflation for 2006 and 2007 would take further study to determine since sources are not consistent. Therefore, to inflate from 2006 to 2008, a 3% inflation rate has been applied, until the appropriate rate can be determined.

Final New Unit Costs

The chart below shows the unit costs as of 2002 and the adjusted versions for 2008. Both were inflated by 3% per year to be accurate in the fifth year of the TIP. This is the likely year of construction obligation and is consistent with the unit costs for highway reconstructions. Both versions also include all expected engineering, supervision and contingency costs. They do not include right-of-way costs.

The below unit costs for sidewalks will also require an increase of about 50% if full drainage is required, and another 50% if curbs will be installed for the full length of the sidewalk.

Bicycle & Pedestrian Unit Project Costs

Project Type	Width (ft)	2002 Cost (\$M/mile)	2008 Cost (\$M/mile)
Shoulder	6	0.219	0.278
Separate Bikeway	10	0.615	0.779
Sidewalks Only	5	0.392	0.496
Sidewalks with Amenities	5	0.755	0.957
Sidewalks (Partial Amenities)	5	0.573	0.727

Recent Town of Guilderland TIP Projects

The Town of Guilderland recently analyzed its sidewalk projects implemented in 2007. The projects were on the CDTC TIP and were analyzed by a consultant, resulting in construction cost per linear foot in 2007 dollars. To compare these actual costs to those above, they were adjusted to include 10% for engineering, 10% for supervision and contingencies. Those are not the actual experience of the Town, but should have only minor variance. That new unit cost was increased by the 3% inflation factor used by CDTC to account for inflation from 2006 to 2007. It was then increased 3% per year to go to the fifth year of the program. When adjusted in such a fashion to be compatible with the CDTC unit costs, the experience of the Town is a unit cost of \$0.908M.

The scope of the projects included sidewalks, some minor drainage, ADA compliance, no curbs, and one special engineering issue per project (such as the need to go over a stream). This translates to a sidewalk with almost full amenities. The CDTC cost for a sidewalk with full amenities above is \$0.957M. The CDTC estimate is about 5% high, but slightly overestimates the amenities.

This tends to validate the unit costs produced by CDTC.

Recent Glenville & Scotia Sidewalks TIP Projects

The Glenville & Scotia Sidewalks project (S161) was added to the TIP in November 2002 showing \$0.700M. The project included local funds in addition to the match, and the match was to be split between three parties. Of course, the cost estimate for this project when it was a candidate was made several months prior to November 2002 in order for it to be considered for Enhancement funds.

In January 2003, CDTC staff concluded its work on the 2002 Bike-Ped unit costs. Had those unit costs been applied to the lesser scope of project S161, the "sidewalk only" cost of \$14.83 per square foot for 58,900 square feet with \$0.095M for right-of-way would've resulted in a cost of \$0.968M in 2007 dollars. Adjusting back to 2006, the cost would've been \$0.940M.

In 2006, the project was dropped from the TIP because its detailed cost estimate by the designers in January 2006 was \$0.948M for the scaled back version mentioned above. The higher cost and other complications drove the decision by the sponsors to withdraw the project.

Although the cost estimate by CDTC was less than 1% different than the detailed estimate by the designer, the following must be taken into account: 1) the designers estimate was not a final cost after the fact, which is usually higher than the estimate, 2) sharp increases in construction inflation occurred between the time the CDTC estimates were formulated, and the date of the engineering estimate. Therefore, since 1) the sharp inflationary increase was not included in the CDTC estimate, 2) the designers were possibly not fully aware of the impact of that inflation since those numbers were not well-known at the time, and 3) it is not known what the project would've cost if it had been implemented; it is likely that both cost estimates are low.

Applying the new CDTC unit costs, which account for the above mentioned inflation, would produce a price of \$1.133M in 2006 dollars, 16% higher than the engineering estimate. This is likely closer to what the project would've cost. This also tends to validate the CDTC unit costs.