

Appendix A: Detailed Trail Section Design and Construction Cost Estimates

BSC engineers developed detailed cost estimates for each of the trail segments, and those segment costs were compiled to develop cost estimates for the 45 trail route options. Costs were developed by making assumptions about how the trail would need to be developed in the context of the surrounding landscape. Required site work and material quantities were estimated based on the existing conditions maps developed as part of this study, site walks, observations, and experience with design and construction of on-road and off-road bicycle facilities and multi-use trails. The latest CTDOT weighted average bid prices were used. Major items of work included Clearing & Grubbing, Unclassified Excavation, Ordinary Borrow, Gravel Borrow, Fine Grading & Compacting, Hot Mix Asphalt, Granite Curb, Guardrail, Chain Link Fence, Pressure Treated Timber Rail Fence, Precast Modular Block Wall, Riprap, Composite Boardwalk (w/Pressure Treated Rails), Cement Concrete Sidewalk, Cement Concrete Wheelchair Ramps, Rectangular Rapid Flashing Beacon (RRFB), HAWK Signal, Signs, Pavement Markings (i.e. Sharrows, Edge, Centerline, Stop), Prefabricated Steel Pedestrian Bridge where anticipated and Police Details. Lump sum percentages were used for Minor Items, Incidentals and Contingencies.

Bridge costs were developed using a unit cost of \$3,000 per linear foot, multiplied by the estimated span between abutments, and rounded to the nearest \$5,000. The cost includes new reinforced concrete abutment supports and fabrication/delivery/installation of a 12-foot wide, 225-foot maximum span, steel thru-truss bridge with a 6-inch concrete deck, horizontal safety rails at 4-inch maximum spacing to a height of 54 inches, IPE (rub rail), steel toe plate with a uniform live load of 90 psf, and a vehicle live load of 10,000 lbs. The exception is the former Castle Bridge crossing, that assumes the new pedestrian bridge structure will utilize the existing piers and abutments, but with the unit cost remaining the same due to the fact that the span of the bridge will be longer than 225 linear feet.

Survey, environmental permitting, roadway design, and structural design costs were estimated at 2%, 1%, 9%, and 20% respectively of the construction cost.

Preferred route estimated section costs are presented herein by potential construction phases. These estimates should be used for planning purposes with the understanding that detailed design has not been conducted, and the true cost of developing trail sections will likely vary based on local conditions and unforeseen issues. Some funding programs may require the inclusion of additional item, contingency or incidental costs when submitting funding requests.

