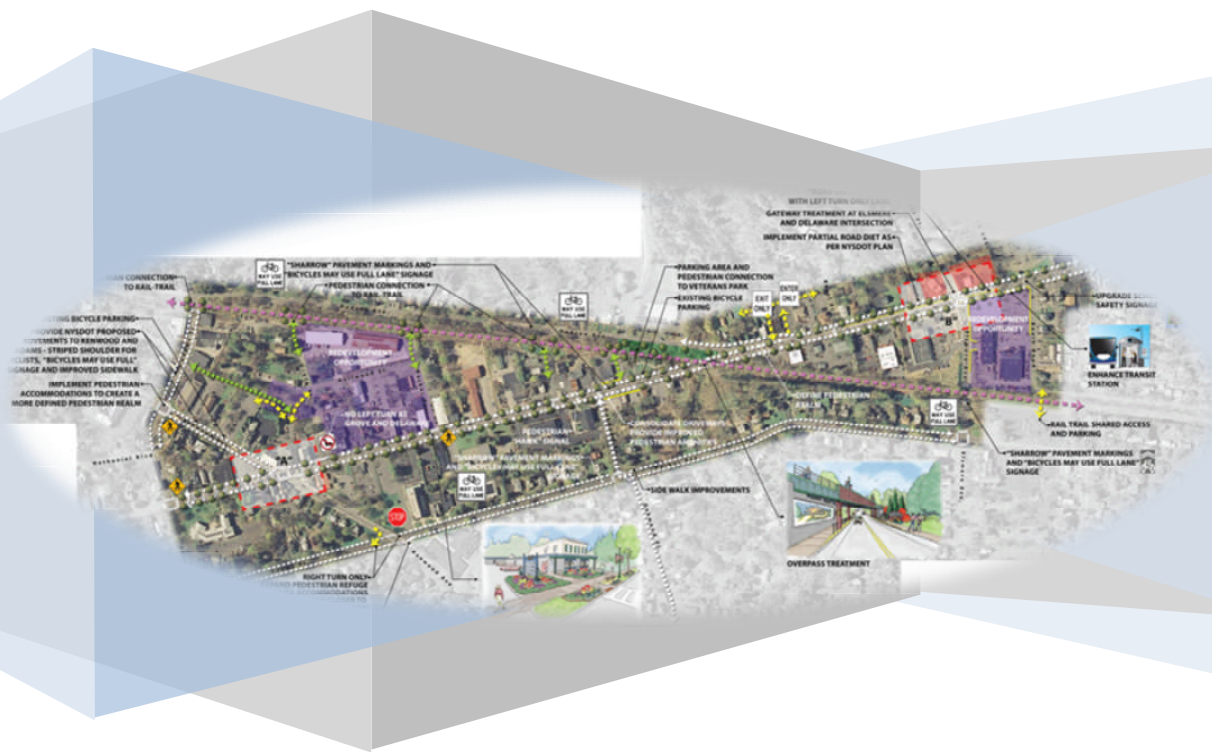
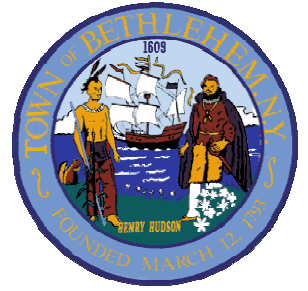


Delaware Avenue Hamlet Enhancement Study



Implementation Section



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Implementation

August 3, 2011

Prepared for the Town of Bethlehem, New York

By the Capital District Transportation Committee with River Street Planning & Development, Nelson\Nygaard Consulting Associates and CLA Site Landscape Architecture



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

The implementation actions of the Delaware Avenue Hamlet Enhancement Study can be outlined in three areas:

- I. Delaware Avenue Hamlet Design Standards and Guidelines
- II. Study Area-wide Policy and Streetscape Improvements
- III. Transportation Improvement Projects

I. Delaware Avenue Hamlet Design Standards and Guidelines

Implementation of the Delaware Avenue Hamlet Design Standards and Guidelines would occur in the following manner:

- Town creation of a Delaware Avenue Hamlet Overlay Zone within the Zoning Code, and inclusion on the Town Zoning District Map
- Incorporation of the Design Standards and Guidelines of the Delaware Avenue Hamlet Enhancement Study within the Zoning Code

The Town shall follow the process and procedures for zoning amendments as set forth in Article XI of the Bethlehem Zoning Law. Steps include submittal to Town Board for acceptance of amendments, Town Board referral to Planning Board for review and recommendation, Town Board public hearing, SEQR determination of significance, and finally Town Board consideration.

A. Land Use Review Process:

In reviewing any zoning or development applications in the Delaware Avenue Hamlet study area, including but not limited to, applications for site plan approval, special use permit approval, subdivision approval, and other development applications within the jurisdiction of the Town Board and/or Planning Board, said Board's should incorporate the standards and guidelines contained in the Delaware Avenue Hamlet Enhancement Study. The following steps would be required:

- Update Town's Site Plan/Special Use Permit application to require use of Delaware Avenue Hamlet Design Guidelines and Standards when a development proposal is located within the study area
- Post the Design Guidelines and Standards document to the "Forms" section of the Town's "Online Services" webpage to coincide with other development application forms and information
- Develop an introductory "Letter to the Applicant" briefly explaining the Delaware Avenue Hamlet Enhancement Study background and the expected incorporation of the Hamlet Design Standards/Guidelines within the applicant's site design. Additionally, the Town Staff and the Planning Board would reference the standards/guidelines during its review of the application.



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Timeframe: (2 years)

The Town typically undertakes a zoning revision process every two years. It is envisioned that the incorporation of the Delaware Avenue Hamlet Design Standards and Guidelines to the Town Zoning Code would occur during the next round of zoning revisions (2012-2013)

II. Study Area-wide Policy and Streetscape Improvements

Several policy items are identified in the Study which aims to strengthen Delaware Avenue's main street character. This is accomplished by implementing policy items that reinforce and enhance the architectural style, pedestrian scale and aesthetics of the area, provide for safe and convenient corridor travel and access for pedestrians, cyclists, and transit users, as well as motor vehicles. Table 1 outlines the policy items and identifies the mechanism suitable for achievement as well as the appropriate partners to be involved. Regarding the mechanism field, a public improvement project indicates the transportation policy item would be accomplished through an investment undertaken by the Town and/or NYSDOT. A development project indicates that the transportation policy items can be achieved through inclusion during the development of a site located within the Study Area and future Delaware Avenue Hamlet Overly District. The policy item would be achieved through the Town's site plan review process. The partner field identifies stakeholders that would be involved during implementation.



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Table 1 - Study Area-wide Policy and Streetscape Improvements

	POLICY	DESCRIPTION	MECHANISM	PARTNER
MOBILITY AND ACCESSIBILITY				
<input type="checkbox"/>	Reconstruct existing sidewalks where appropriate.	<p>The Four Corners sidewalk and curbing project should be replicated elsewhere throughout the study area. Tasteful mimicking of the ‘Yellow brick’ of the original Delaware Ave turnpike for stamped concrete elements to match historical pavement color and enhance Hamlet distinction.</p> <p>Sidewalks should be expanded from 36 or 48 inches to 60 inches with curbs wherever possible.</p>	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install ADA-compliant curb ramps at all intersections.	ADA-compliant curb ramps, signage, pavement markings, crosswalks and traffic controls should be installed where appropriate.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Sidewalks paving materials and patterns		<input checked="" type="checkbox"/> Public Improvement	<input checked="" type="checkbox"/> Town



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
	should be continued across driveways.		Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install high visibility crosswalks where recommended throughout the study area.	High visibility crosswalks are recommended for several intersections. New crosswalks should be the standard parallel or ladder style; innovative materials like pavers or stamped concrete should be used; and where appropriate the Town and/or school district colors should be used and incorporated into crosswalk design.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Consolidate driveways and minimize curb cuts throughout the study area.	Access management strategies can help consolidate driveways and minimize curb cuts which, in turn, creates a more pedestrian-friendly environment by shortening crossing distances and limiting automobile access from main roads.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
			<input type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install appropriate signage and traffic controls and/or signals where recommended.		<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Continue community education and enforcement of traffic laws.	Work with Bethlehem Police to ensure all traffic laws are being enforced. The PaTHs 4 Bethlehem Committee has adopted a 3-E approach (Engineering, Education, and Enforcement) within its Bicycle and Pedestrian Program. The Committee actively pursues education and enforcement initiatives.	<input type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review) <input checked="" type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input checked="" type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install sharrows (shared lane markings) and associated signs where	The installation of shared lane markings (sharrows) or other pavement markings for cyclists increases motorist awareness of bicyclists on the road.	<input checked="" type="checkbox"/> Public Improvement Project	<input checked="" type="checkbox"/> Town



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
	appropriate	Sharrows, and accompanying signage, are recommended for Delaware Ave through the hamlet, as well as Hudson Ave, Kenwood Ave, Adams St. and Adams Place/Herber Ave. (Shared lane markings: Placement immediately after an intersection and spaced at intervals not greater than 250 feet thereafter.)	<input type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install loop detection sensors at appropriate intersections.	Loop detection sensors trigger traffic control devices to change for bicyclists.	<input checked="" type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Create connections to the future Albany County Rail Trail.	Both bicycle and vehicle parking should be strategically established along the future Rail Trail where opportunities become available. Safe walking and bicycling paths ,which connect to the trail,will be vital to encourage trail users to spend money at businesses throughout the hamlet and encourage users to get to the trail without their	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
		vehicle.	<input type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> CDTA <input checked="" type="checkbox"/> Albany County
<input type="checkbox"/>	Promote transit improvements throughout the study area.	Work with CDTA to pursue new or improved bus shelters and trash receptacles. Support existing transit service through enhanced pedestrian and bicycle access and improved site design; coordinate bus stop with other streetscape enhancements; and treat Four Corners bus stop as having the potential for high demand.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input checked="" type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Market TDM programs.	Work with CDTA and CDTC to market travel demand management programs to town residents, business owners and prospective developers. The Town Stormwater Management Program will address appropriate green infrastructure practices acceptable to the Town.	<input type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review) <input checked="" type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input checked="" type="checkbox"/> CDTC <input checked="" type="checkbox"/> CDTA <input type="checkbox"/> Albany County
PARKING				



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
<input type="checkbox"/>	Adopt bicycle parking provisions in the Town's zoning ordinance.	A bicycle parking minimum can increase the number of bike racks or other secure bicycle storage in the study area.	<input type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Maximize parking throughout the study area.	Define on-street parking better and require better site-design of off-street parking areas so not to detract from pedestrian-scale; implement way-finding and signage program for hamlet area parking/directions to attractions.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Create/provide incentives for shared parking arrangements.	Density bonuses, relaxed parking standards and modification of min/max parking requirements related to individual development can reduce the amount of land area within the Hamlet devoted to vehicle parking.	<input type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review)	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
			<input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Implement parking maximums.	It is recommended the Town evaluate the feasibility of implementing a parking maximums system. The Town's Energy Management, Green House Gas Inventory, and Bicycle and Pedestrian Program initiatives will review the Town's current parking requirements and provide recommendations.	<input type="checkbox"/> Public Improvement Project <input type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
GREEN INFRASTRUCTURE				
<input type="checkbox"/>	Incorporate low impact development techniques into parking lot design	Low impact and green development techniques can reduce storm water impacts on local systems.	<input type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
				<input type="checkbox"/> Albany County
<input type="checkbox"/>	Use a low impact development (LID) approach where feasible.	Includes elements such as porous pavers and asphalt to improve storm water impacts, installing bioretention swales to absorb storm water runoff and strategically plant trees. The new NYSDEC SPDES general permits for storm water discharge from construction activity requires green infrastructure practices for storm water management.	<input type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input checked="" type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Narrow the perception of roadways with street trees.	Roadways can be narrowed (in perception only) through the use of street trees. Trees provide visual interest, shade, storm water benefits and slow traffic.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
DESIGN				
<input type="checkbox"/>	Provide clear and coordinated wayfinding	Wayfinding offers information on the availability and location of parking with signs at community entrances and gateways. This signage can also	<input checked="" type="checkbox"/> Public Improvement Project	<input checked="" type="checkbox"/> Town



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
	signage system.	enforce the hamlet brand and character through its design.	<input type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Create green streetscapes throughout the study area.	Establishing landscape standards to provide a roadside buffer along Delaware Ave and other streets in the study area made of trees, shrubs, and other vegetation can enhance the attractiveness of the study area as a business location and place to live and shop.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input checked="" type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input checked="" type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Use appropriate building materials and design styles to create a hamlet character.	Storefront facades, building massing, materials and design styles are highly variable throughout the study area. Establishing supplementary design standards to address specific features and characters for a more consistent, cohesive and unified Hamlet architecture.	<input type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
			<input type="checkbox"/> Zoning Code Revision	<input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Encourage property/business owners to use aesthetically pleasing signage.	Signage craftsmanship and aesthetics are important elements to achieve the Hamlet vision.	<input type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Install more streetscape furnishings throughout the study area.	There is a need for both trash and dog waste receptacles as well as benches.	<input checked="" type="checkbox"/> Public Improvement Project <input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Town <input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input type="checkbox"/> Albany County
<input type="checkbox"/>	Create gateways and gathering spaces.	Use the railroad overpass on Delaware Ave as an opportunity to create a gateway. Where appropriate, require new development or	<input checked="" type="checkbox"/> Public Improvement Project	<input checked="" type="checkbox"/> Town



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

	POLICY	DESCRIPTION	MECHANISM	PARTNER
		redevelopment of existing buildings to include space for outdoor dining.	<input checked="" type="checkbox"/> Development Project (Site Plan Review) <input type="checkbox"/> Programmatic/Education <input type="checkbox"/> Zoning Code Revision	<input checked="" type="checkbox"/> Developer <input type="checkbox"/> NYSDOT <input type="checkbox"/> CDTC <input type="checkbox"/> CDTA <input checked="" type="checkbox"/> Albany County

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

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DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

III. Transportation Improvement Projects

Table 2 lists the transportation improvement projects (as identified and discussed in the Transportation Improvement Plan) to move the enhancement of the Delaware Avenue Hamlet toward realization. It provides a conceptual-level description of the project improvement, generalized cost estimates, potential funding sources, and the timeframe for implementation. Generally, the costs are roughly estimated, and it is anticipated that a greater detailed cost analysis would be performed during the project's transition from the conceptual stage to implementation, most notably during a funding application or the Town's undertaking of a project.

A detailed preliminary engineer's cost estimate was prepared for the Delaware Avenue Hamlet Streetscape Improvements identified in the Transportation Improvement Plan and outlined in Item I "Delaware Avenue Projects: Roadway Segments" Table 2. These streetscape improvements extend along Delaware Avenue from Adams Street to Elsmere Avenue. Table 3A – 3G provides the detailed preliminary estimate based on NYSDOT items and average unit costs. It should also be noted that the transportation improvements recommended in this plan located on NYS-owned roadways, which include Delaware Avenue and a portion of Kenwood Avenue (between Delaware Avenue and Cherry Avenue), will require coordination with NYSDOT.

The timeframe for implementation is described as follows:

- **Ongoing:** These improvement projects will be pursued as adjacent properties apply for land use review, most likely during the site plan review process. For example, the redevelopment of the former CVS site at Elsmere Avenue and Delaware Avenue intersection currently under site plan review by the Town Planning Board, proposes to remove curb cuts along the site's Delaware Avenue frontage. Essentially this access management practice would remove any opportunity for left turn movements from Delaware Avenue.
- **Short Term:** 1 to 5 years – These improvement projects are typically those that can be assumed and achieved by the Town at minimal cost, and mainly occur on Town right-of-way. Additionally, the road diet improvements to Delaware Avenue between Hudson Avenue and Elsmere Avenue have been proposed by NYSDOT for some time, and as such are considered a short term implementation item.
- **Medium Term:** 5 to 10 years – These improvement items tend to reflect greater costs and require the participation of other partners (i.e. NYSDOT, developers, adjacent property owners, etc.). These items would also likely require that funding be obtained from outside sources through competitive grant or project selection programs. For example, a variety of federal transportation fund sources are periodically available for programming new projects during the Transportation Improvement Program (TIP)



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

update. Applications may be applied for in the short term time frame (i.e. 1 to 5 years), but funding may not be available and implementation may not occur until several years after (i.e. 5 to 10 years). The TIP for example is updated on a 2 year cycle, however, funding to add new projects to the program are not always available every 2 years. See Table 3 for a listing of potential outside funding sources.

- Long Term: Beyond 10 years – These items hinge on the implementation of the ongoing, short term and medium term items. Investment in the short and medium term items sets the stage for the long term items. For example, redevelopment of the area bounded by Grove Street, Hallwood Road, and Becker Terrace, highlights the need for an additional vehicle connection from Paddock Place or Adams Street to this area. Additionally, public investment in the full streetscape improvements to Delaware Avenue will enhance the Delaware Avenue Hamlet, thereby attracting redevelopment of the corridor.



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Table 2 – Transportation Improvement Projects

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
I. DELAWARE AVENUE PROJECTS: ROADWAY SEGMENTS					
<p><i>Four Corners District:</i> Adams Street to Grove Street</p> <p>- and -</p> <p><i>Central Four Corners District:</i> Grove Street to Railway Bridge</p> <p><i>Pedestrian, bicycle, streetscape and on-street parking improvements</i></p> <p>Length of proposed improvements = 4900 linear ft.</p>	<p>MEDIUM TERM</p>	<p>Replicate and extend the Four Corners ADA compliant sidewalk and curbing project along this entire section including: reconstruction of existing sidewalks to 5 ft in width; addition of curbs/curb ramps; creation of alternating defined on-street parking spaces with expanded landscape/utility strips and bulbouts at intersections (up to Veterans Memorial Park); upgrading pedestrian signals to ADA compliance; roadway pavement resurfacing and minor catchbasin improvements; installation of shared lane pavement markings (sharrows) and signage; installation of appropriately scaled streetscape elements such as furnishings, lighting and plantings to enhance bus stop areas and the overall pedestrian realm; and retrofit of existing utility poles with pedestrian-scaled lighting in the short-term. Install/re-install high visibility crosswalks at: Adams Street, Post Office, Becker Terrace, Oakwood Place, Rural Place. At or near the intersection of Oakwood Place install either a Rectangular Rapid Flash LED Beacon or a HAWK signal on Delaware Avenue. Connections to the Rail Trail at Grove Street, Becker Terrace , and Howard Place.</p> <p><i>See below for additional Delaware Avenue intersection improvement projects.</i></p>	<p>NYSDOT Bethlehem</p>	<p>\$570,000</p> <p>\$1,270,000</p> <p>Utility burying: add an additional \$3,432,650</p>	



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
		Long-term: bury utilities, install pedestrian-scaled lighting and create a tree canopy over Delaware Avenue.			
<p><u>Central Elsmere District:</u> Railway Bridge/Hudson Avenue to Elsmere Avenue</p> <p>1. NYSDOT Safety Improvement Project/Partial Road Diet</p> <p>Segment length = 0.2 miles</p> <p>2. <i>Pedestrian, bicycle, streetscape improvements</i></p> <p>Length of proposed improvements = 2100 linear feet</p>	<p>1. SHORT TERM</p> <p>2. MEDIUM TERM</p>	<p>1. NYSDOT's conceptual design for this safety improvement project includes: retaining two eastbound through lanes on both sides of the Delaware Avenue/Elsmere Avenue intersection. On the eastbound approach one of the westbound through lanes is to be converted to a two-way left turn lane from Rural Place eastward until it becomes a left turn only lane as it approaches the intersection. On the westbound approach, one westbound through lane is to be retained and the existing inside westbound through lane converted to a left turn only lane starting at Herrick Avenue. Other improvements: shared lane markings (sharrows) and accompanying signage.</p> <p>2. Replicate and extend the Four Corners ADA compliant sidewalk and curbing project along this entire section including: reconstruction of existing sidewalks to 5 ft in width, addition of curbs and curb ramps where none exist, and replacement of asphalt in the paved strip between the curb and sidewalk with historical yellow brick or stamped concrete to match the Four Corners detailing. Reinforce landscape planting buffers to provide additional screening of parked vehicles from the roadway and sidewalk. Enhance bus stops and the overall pedestrian realm by including</p>	<p>1. NYSDOT</p> <p>2. Bethlehem/ private developers as part of redevelopment as appropriate</p>	<p>N/A</p> <p>2. \$660,000</p>	<p>1. NYSDOT safety funds</p>

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
3. Bury utilities and additional streetscape enhancements.	3. LONG TERM	appropriately scaled streetscape elements such as furnishings, lighting and plantings. In the short-term retrofit existing utility poles with pedestrian-scaled lighting.	3. National Grid/ Bethlehem/ Private Developers	3. \$1,848,350	
4. Full road diet	4. LONG TERM	3. The long-term vision is to bury utilities and install stand-alone pedestrian-scaled lighting. Create a tree canopy over Delaware Avenue and install other landscape treatments. 4. Travel lane reduction to 1 lane in each direction with a center turning lane and additional room for bicyclists, from the railway overpass /Hudson Avenue to the eastern boundary of the study area.	4. NYSDOT/ Bethlehem	4. Striping only = \$5,000	
5. Feasibility Study to extend full road diet further east outside the study area to City of Albany line.	5. MEDIUM TERM	5. Conduct a feasibility study to carry the full road-diet cross-section (with specific treatments such as raised medians or other treatments needed for safe pedestrian crossings at key locations) eastward to the existing two lane section approaching the City of Albany line.	5. Bethlehem/ NYSDOT/ CDTC	5. \$50,000	



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
II. DELAWARE AVENUE PROJECTS: ADDITIONAL INTERSECTION IMPROVEMENTS					
<p>Delaware Ave/ Kenwood Ave/ Paddock Place</p> <p><i>1. Signal related improvements</i></p> <p><i>2. Slip ramp signage/further exploration of reconfiguration</i></p> <p><i>3. New pedestrian connection</i></p> <p>Assume 150 ft. in length</p> <p><i>4. New vehicular connection in conjunction with redevelopment</i></p> <p>Assume 150 ft. in length</p>	<p>1. MEDIUM TERM</p> <p>2. SHORT TERM</p> <p>3. MEDIUM TERM</p> <p>4. LONG TERM</p>	<p>1. Install pedestrian countdown signals in place of the current walk/don't walk signal. Incorporate technologies for pedestrian activated signals to indicate when the button has been pressed to reduce pedestrian impatience and crossing prior to activation. Monitor for availability of emerging technologies and assess opportunity to revisit the signal phasing to create more efficient operations while maintaining/ improving safety for both pedestrians and vehicles.</p> <p>2. Explore modifying the intersection to eliminate the right turn yield condition from Kenwood Ave onto Delaware Ave via the slip ramp. In the short term move the crosswalk back and replace the "yield" sign with a "stop" sign.</p> <p>3. Medium term: Provide a pedestrian path from Paddock Place to the municipal parking lot on Kenwood Avenue to improve accessibility to businesses along Paddock Place and Grove Street.</p> <p>4. Long term: explore a vehicle connection from Paddock Place to Adams Street or Grove Street, while making Paddock Place at Delaware Ave/Kenwood Ave one-way only</p>	<p>1. NYSDOT</p> <p>2. NYSDOT/ Bethlehem</p> <p>3. Bethlehem/ Private developers and property owners</p> <p>4. Bethlehem/ Private developers and property owners</p>	<p>1. \$16,500</p> <p>2. \$400/sign installed</p> <p>3. \$20,000 - \$25,000</p> <p>4. \$65,000 - \$70,000</p>	
Delaware Ave/Grove Street	SHORT TERM	Install signage to restrict left turning traffic from Grove Street during the PM peak travel period.		\$400/sign installed	



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
Delaware Ave/Hudson Avenue	ON-GOING	Use access management strategies in this area when sites redevelop or other opportunities arise with emphasis on the driveways serving the Tool's site.	Upon private redevelopment	NA	Private re-development
Delaware Ave/Elsmere Ave/Groesbeck Place/Booth Road	ON-GOING	<p>1. In conjunction with redevelopment of the former CVS site: modify the current driveway configuration and restrict left turns as needed; enhance the current transit stop at this location.</p> <p>2. Monitor for availability of emerging technologies and assess opportunity to revisit the signal phasing to create more efficient operations while maintaining/ improving safety for both pedestrians and vehicles.</p> <p>3. Upgrade the school crossing at the Elsmere Elementary School in conjunction with NYSDOT's planned safety improvements at this intersection; consider use of upgraded signage and speed indicators.</p>	<p>1. NYSDOT/ Bethlehem/ Private Redevelopment/ CDTA</p> <p>2. NYSDOT/ Bethlehem</p> <p>3. NYSDOT/ Bethlehem</p>	3. \$5,000 for permanent driver feedback sign (radar speed detection)	Private re-development
III. ADDITIONAL ROADWAY SEGMENTS					
Kenwood Avenue: from Cherry Avenue to Delaware Avenue <i>Reconstruction and Streetscape Improvement</i>	LONG TERM	As described in NYSDOT's 2002 public presentation for this prior NYS project: improve travel surfaces for general purpose traffic, bicyclists and pedestrians through improved pavement, striped shoulders for bicyclists, and wider reconstructed sidewalks. Also include:	NYSDOT, Bethlehem, CDTA	\$ 5.3 M (used CDTC pavement project reconstruction unit costs similar to Broadway in	



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
Project Segment length = 1.2 miles		curbing, ADA curb ramps, improved drainage, narrowing of the travel lanes, bicycle safe grates, and introduction of highly visible crosswalks with priority given for bus stop locations, and enhanced greenspace and tree plantings to calm traffic and improve the walkability and transit friendliness of the street corridor.		Rotterdam)	
Adams Place/Herber Avenue (from Hawthorne Ave to Elsmere Ave) Bicycle and pedestrian improvements Segment length = 0.7 miles	SHORT TERM	Install shared lane markings (sharrows) and better define sidewalks in various sections by reconstructing sidewalks where needed and installing curbing and ADA curb ramps. Crosswalk work involves improving/installing new crosswalks at Adams/Kenwood and Adams/Herber/Oakwood Ave.	Bethlehem	\$1.1M	
Hudson Avenue Bicycle and pedestrian improvements Segment length = 0.6 miles	SHORT TERM	Install shared lane markings (sharrows) and signs on Hudson Ave from Adams Street to Delaware Avenue. Identify and improve appropriate links to the Rail Trail. Sidewalk Improvements as needed – one side of street	Bethlehem	\$10,000 \$40,000 - \$45,000	
Elsmere Ave: Railroad Bridge to Herber Ave Segment length = 235 ft.	MEDIUM TERM	Sidewalks should be better defined.		\$35,000 - \$40,000	
Adams Street Bicycle, pedestrian and	SHORT TERM	1. Improve sidewalks between Kenwood Ave. and Hudson Ave. to clearly define both the pedestrian space and driveways; install new curbing where		Combined cost estimate = \$305,000	

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
access management improvements 1. Segment length = 528 ft 2. Segment length = 475 ft.		needed; and install way finding signage for the municipal parking lot and Rail Trail access. 2. Improve sidewalks between Kenwood Avenue and Delaware Avenue.			
IV. ADDITIONAL INTERSECTIONS					
Kenwood Ave/Adams Place	SHORT TERM	Narrow the width and convert the corner slip-ramp to a one lane segment allowing right turns only onto Adams Place from Kenwood Ave and expand the pedestrian refuge/planting area. On the northeast corner, install a stop sign at the stop bar at the intersection and remove the stop sign located at the church parking lot driveway. Realign all crosswalks to provide more direct street crossings, improve sight distance and to improve the current poor yield to pedestrians in crosswalk compliance.	Bethlehem	\$25,000 - \$30,000	
Elsmere Ave/Herber Ave	SHORT TERM	Installing ADA compliant cross-walks at all four approaches. Consider reducing the turning radii on the Elsmere Ave southbound approach to calm traffic.		\$15,000	
V. Other Projects					
New mixed use development around Grove Street, Hallwood Road and Becker Terrace	ON-GOING	Foster creation of a new mixed use around Grove Street, Hallwood Road and Becker Terrace as a location for development that would increase the residential base, support area businesses, increase walkability, justify public transportation improvements and benefit from the future rail trail.	Private development/ Bethlehem/		
Railway Bridge/ Underpass Gateway Enhancement	MEDIUM TERM	Enhance the Railway Bridge and Underpass on Delaware Avenue as a gateway to the Hamlet from	Bethlehem/ Albany	SEE City of Schenectady	

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

PROJECT	TIME FRAME	DESCRIPTION	PARTNERS	GENERALIZED COST ESTIMATE	POTENTIAL FUND SOURCE
		the Elsmere area by applying a fresh paint scheme or murals, landscape plantings, quality signage, thematic lighting or architectural detailing.	County/ Chamber of Commerce – area businesses/ FORT	State Streetscape Railway Bridge project cost - TIP cost estimate was \$270,000	

Table 3A

PRELIMINARY ENGINEER'S ESTIMATE

SEGMENT #1 - ADAMS STREET TO KENWOOD AVENUE

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements		PIN: N/A		Contract #: N/A	
Agency: Town of Bethlehem		B&L NO: 858.037		DATE: 2-Aug-11	
Submittal: Preliminary Estimate		CALC. BY: TRJ		CHKD BY: DJR	
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	200.0	\$ 20.00	\$ 4,000.00
203.03	EMBANKMENT IN PLACE	CY	50.0	\$ 25.00	\$ 1,250.00
206.02	TRENCH AND CULVERT EXCAVATION	CY	30.0	\$ 25.00	\$ 750.00
207.22	GEOTEXTILE DRAINAGE	SY	300.0	\$ 2.00	\$ 600.00
304.12	SUBBASE COURSE, TYPE 2	CY	95.0	\$ 45.00	\$ 4,275.00
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON	15.0	\$ 90.00	\$ 1,350.00
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON	17.0	\$ 85.00	\$ 1,445.00
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON	46.0	\$ 80.00	\$ 3,680.00
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY	125.0	\$ 6.00	\$ 750.00
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF	400.0	\$ 4.00	\$ 1,600.00
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA	0.0	\$ 800.00	\$ -
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF	0.0	\$ 400.00	\$ -
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF	0.0	\$ 500.00	\$ -
605.1001	UNDERDRAIN FILTER, TYPE 2	CY	30.0	\$ 45.00	\$ 1,350.00
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF	375.0	\$ 2.00	\$ 750.00
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY	23.0	\$ 450.00	\$ 10,350.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON	12.0	\$ 100.00	\$ 1,200.00
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY	10.0	\$ 350.00	\$ 3,500.00
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY	125.0	\$ 100.00	\$ 12,500.00
609.0201	GRANITE CURB	LF	375.0	\$ 30.00	\$ 11,250.00
610.0203	ESTABLISHING TURF	ACRE	0.05	\$ 3,000.00	\$ 150.00
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA	13.0	\$ 600.00	\$ 7,800.00
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA	0.0	\$ 350.00	\$ -
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	25.0	\$ 225.00	\$ 5,625.00
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	25.0	\$ 80.00	\$ 2,000.00
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA	50.0	\$ 15.00	\$ 750.00
613.02	PLACING TOPSOIL - TYPE A	CY	25.0	\$ 35.00	\$ 875.00
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	1.0	\$ 10,000.00	\$ 10,000.00
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF	26.0	\$ 25.00	\$ 650.00
645.81	TYPE A SIGN POSTS	EA	5.0	\$ 100.00	\$ 500.00
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA	0.0	\$ 600.00	\$ -
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA	3.0	\$ 4,200.00	\$ 12,600.00
680.79----01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	0.0	\$ 2,500.00	\$ -
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA	0.0	\$ 300.00	\$ -
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA	0.0	\$ 200.00	\$ -
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA	0.0	\$ 250.00	\$ -
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA	0.0	\$ 2,500.00	\$ -
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	1225.0	\$ 1.00	\$ 1,225.00
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	0.0	\$ 1.00	\$ -
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA	5.0	\$ 150.00	\$ 750.00
	CURB BUMPOUT (ADDITIONAL COST)	EA	0.0	\$ 3,500.00	\$ -
	RAIL TRAIL CONNECTION	EA	0.0	\$ 7,500.00	\$ -
625.01	SURVEY OPERATIONS (USE 2%)	LS	1.0	\$ 2,070.50	\$ 2,070.50
697.03	FIELD CHANGE PAYMENT (5%)	D-C	5279.8	\$ 1.00	\$ 5,279.78
699.040001	MOBILIZATION (4% MAX.)	LS	1.0	\$ 4,435.01	\$ 4,435.01

SUBTOTAL CONSTRUCTION ITEMS = \$ 115,310.29

CONTINGENCY (20%) = \$ 23,062.06

SUBTOTAL = \$ 138,372.34

ENGINEERING (USE 12%) = \$ 16,604.68

CONSTRUCTION INSPECTION (USE 12%) = \$ 16,604.68

RIGHT OF WAY COSTS = 0

TOTAL (2011 DOLLARS) = \$ 171,581.71

SAY \$ 180,000.00

Table 3B

PRELIMINARY ENGINEER'S ESTIMATE
SEGMENT #2 - KENWOOD AVENUE TO GROVE STREET

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements		PIN: N/A		Contract #: N/A	
Agency: Town of Bethlehem		B&L NO: 858.037		DATE: 2-Aug-11	
Submittal: Preliminary Estimate		CALC. BY: TRJ		CHKD BY: DJR	
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	5.0	\$ 20.00	\$ 100.00
203.03	EMBANKMENT IN PLACE	CY	0.0	\$ 25.00	\$ -
206.02	TRENCH AND CULVERT EXCAVATION	CY	0.0	\$ 25.00	\$ -
207.22	GEOTEXTILE DRAINAGE	SY	0.0	\$ 2.00	\$ -
304.12	SUBBASE COURSE, TYPE 2	CY	5.0	\$ 45.00	\$ 225.00
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON	0.0	\$ 90.00	\$ -
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON	0.0	\$ 85.00	\$ -
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON	0.0	\$ 80.00	\$ -
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY	1700.0	\$ 6.00	\$ 10,200.00
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF	50.0	\$ 4.00	\$ 200.00
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA	0.0	\$ 800.00	\$ -
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF	0.0	\$ 400.00	\$ -
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF	0.0	\$ 500.00	\$ -
605.1001	UNDERDRAIN FILTER, TYPE 2	CY	0.0	\$ 45.00	\$ -
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF	0.0	\$ 2.00	\$ -
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY	5.0	\$ 450.00	\$ 2,250.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON	150.0	\$ 100.00	\$ 15,000.00
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY	2.5	\$ 350.00	\$ 875.00
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY	1700.0	\$ 100.00	\$ 170,000.00
609.0201	GRANITE CURB	LF	0.0	\$ 30.00	\$ -
610.0203	ESTABLISHING TURF	ACRE	0.0	\$ 3,000.00	\$ -
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA	5.0	\$ 600.00	\$ 3,000.00
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA	0.0	\$ 350.00	\$ -
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	20.0	\$ 225.00	\$ 4,500.00
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	0.0	\$ 80.00	\$ -
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA	0.0	\$ 15.00	\$ -
613.02	PLACING TOPSOIL - TYPE A	CY	0.0	\$ 35.00	\$ -
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	1.0	\$ 15,000.00	\$ 15,000.00
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF	20.0	\$ 25.00	\$ 500.00
645.81	TYPE A SIGN POSTS	EA	2.0	\$ 100.00	\$ 200.00
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA	0.0	\$ 600.00	\$ -
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA	0.0	\$ 4,200.00	\$ -
680.79----01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	1.0	\$ 2,500.00	\$ 2,500.00
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA	16.0	\$ 300.00	\$ 4,800.00
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA	8.0	\$ 200.00	\$ 1,600.00
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA	8.0	\$ 250.00	\$ 2,000.00
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA	0.0	\$ 2,500.00	\$ -
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	1700.0	\$ 1.00	\$ 1,700.00
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	0.0	\$ 1.00	\$ -
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA	2.0	\$ 150.00	\$ 300.00
	CURB BUMPOUT (ADDITIONAL COST)	EA	0.0	\$ 3,500.00	\$ -
	RAIL TRAIL CONNECTION	EA	0.0	\$ 7,500.00	\$ -
625.01	SURVEY OPERATIONS (USE 2%)	LS	1.0	\$ 4,699.00	\$ 4,699.00
697.03	FIELD CHANGE PAYMENT (5%)	D-C	11982.5	\$ 1.00	\$ 11,982.45
699.040001	MOBILIZATION (4% MAX.)	LS	1.0	\$ 10,065.26	\$ 10,065.26

SUBTOTAL CONSTRUCTION ITEMS = \$ 261,696.71

CONTINGENCY (20%) = \$ 52,339.34

SUBTOTAL = \$ 314,036.05

ENGINEERING (USE 12%) = \$ 37,684.33

CONSTRUCTION INSPECTION (USE 12%) = \$ 37,684.33

RIGHT OF WAY COSTS = 0

TOTAL (2011 DOLLARS) = \$ 389,404.70

SAY \$ 390,000.00

Table 3C

PRELIMINARY ENGINEER'S ESTIMATE

SEGMENT #3 - GROVE STREET TO D&H RR BRIDGE OVERPASS

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements		PIN: N/A		Contract #: N/A	
Agency: Town of Bethlehem		B&L NO: 858.037		DATE: 2-Aug-11	
Submittal: Preliminary Estimate		CALC. BY: TRJ		CHKD BY: DJR	
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	1610.0	\$ 20.00	\$ 32,200.00
203.03	EMBANKMENT IN PLACE	CY	100.0	\$ 25.00	\$ 2,500.00
206.02	TRENCH AND CULVERT EXCAVATION	CY	280.0	\$ 25.00	\$ 7,000.00
207.22	GEOTEXTILE DRAINAGE	SY	2925.0	\$ 2.00	\$ 5,850.00
304.12	SUBBASE COURSE, TYPE 2	CY	825.0	\$ 45.00	\$ 37,125.00
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON	790.0	\$ 90.00	\$ 71,100.00
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON	170.0	\$ 85.00	\$ 14,450.00
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON	505.0	\$ 80.00	\$ 40,400.00
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY	7775.0	\$ 6.00	\$ 46,650.00
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF	3760.0	\$ 4.00	\$ 15,040.00
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA	8.0	\$ 800.00	\$ 6,400.00
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF	2.0	\$ 400.00	\$ 800.00
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF	2.0	\$ 500.00	\$ 1,000.00
605.1001	UNDERDRAIN FILTER, TYPE 2	CY	280.0	\$ 45.00	\$ 12,600.00
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF	3760.0	\$ 2.00	\$ 7,520.00
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY	200.0	\$ 450.00	\$ 90,000.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON	100.0	\$ 100.00	\$ 10,000.00
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY	22.0	\$ 350.00	\$ 7,700.00
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY	270.0	\$ 100.00	\$ 27,000.00
609.0201	GRANITE CURB	LF	3760.0	\$ 30.00	\$ 112,800.00
610.0203	ESTABLISHING TURF	ACRE	0.2	\$ 3,000.00	\$ 510.00
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA	42.0	\$ 600.00	\$ 25,200.00
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA	0.0	\$ 350.00	\$ -
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	75.0	\$ 225.00	\$ 16,875.00
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	75.0	\$ 80.00	\$ 6,000.00
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA	200.0	\$ 15.00	\$ 3,000.00
613.02	PLACING TOPSOIL - TYPE A	CY	70.0	\$ 35.00	\$ 2,450.00
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	1.0	\$ 30,000.00	\$ 30,000.00
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF	75.0	\$ 25.00	\$ 1,875.00
645.81	TYPE A SIGN POSTS	EA	8.0	\$ 100.00	\$ 800.00
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA	8.0	\$ 600.00	\$ 4,800.00
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA	10.0	\$ 4,200.00	\$ 42,000.00
680.79---01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	0.0	\$ 2,500.00	\$ -
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA	0.0	\$ 300.00	\$ -
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA	0.0	\$ 200.00	\$ -
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA	0.0	\$ 250.00	\$ -
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA	1.0	\$ 2,500.00	\$ 2,500.00
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	5560.0	\$ 1.00	\$ 5,560.00
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	3600.0	\$ 1.00	\$ 3,600.00
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA	17.0	\$ 150.00	\$ 2,550.00
	CURB BUMP-OUT (ADDITIONAL COST)	EA	8.0	\$ 3,500.00	\$ 28,000.00
	RAIL TRAIL CONNECTION	EA	3.0	\$ 7,500.00	\$ 22,500.00
625.01	SURVEY OPERATIONS (USE 2%)	LS	1.0	\$ 14,927.10	\$ 14,927.10
697.03	FIELD CHANGE PAYMENT (5%)	D-C	38064.1	\$ 1.00	\$ 38,064.11
699.040001	MOBILIZATION (4% MAX.)	LS	1.0	\$ 31,973.85	\$ 31,973.85

SUBTOTAL CONSTRUCTION ITEMS = \$ 831,320.05

CONTINGENCY (20%) = \$ 166,264.01

SUBTOTAL = \$ 997,584.06

ENGINEERING (USE 12%) = \$ 119,710.09

CONSTRUCTION INSPECTION (USE 12%) = \$ 119,710.09

RIGHT OF WAY COSTS = \$ 30,000.00

TOTAL (2011 DOLLARS) = \$ 1,267,004.24

SAY \$ 1,270,000.00

Table 3D

PRELIMINARY ENGINEER'S ESTIMATE

SEGMENT #4 - D&H RR BRIDGE OVERPASS TO ELSMERE AVENUE

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements		PIN: N/A		Contract #: N/A	
Agency: Town of Bethlehem		B&L NO: 858.037		DATE: 2-Aug-11	
Submittal: Preliminary Estimate		CALC. BY: TRJ		CHKD BY: DJR	
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	800.0	\$ 20.00	\$ 16,000.00
203.03	EMBANKMENT IN PLACE	CY	100.0	\$ 25.00	\$ 2,500.00
206.02	TRENCH AND CULVERT EXCAVATION	CY	115.0	\$ 25.00	\$ 2,875.00
207.22	GEOTEXTILE DRAINAGE	SY	1170.0	\$ 2.00	\$ 2,340.00
304.12	SUBBASE COURSE, TYPE 2	CY	365.0	\$ 45.00	\$ 16,425.00
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON	345.0	\$ 90.00	\$ 31,050.00
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON	66.0	\$ 85.00	\$ 5,610.00
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON	183.0	\$ 80.00	\$ 14,640.00
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY	2835.0	\$ 6.00	\$ 17,010.00
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF	1500.0	\$ 4.00	\$ 6,000.00
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA	0.0	\$ 800.00	\$ -
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF	0.0	\$ 400.00	\$ -
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF	0.0	\$ 500.00	\$ -
605.1001	UNDERDRAIN FILTER, TYPE 2	CY	115.0	\$ 45.00	\$ 5,175.00
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF	1500.0	\$ 2.00	\$ 3,000.00
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY	100.0	\$ 450.00	\$ 45,000.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON	100.0	\$ 100.00	\$ 10,000.00
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY	14.0	\$ 350.00	\$ 4,900.00
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY	285.0	\$ 100.00	\$ 28,500.00
609.0201	GRANITE CURB	LF	1500.0	\$ 30.00	\$ 45,000.00
610.0203	ESTABLISHING TURF	ACRE	0.2	\$ 3,000.00	\$ 510.00
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA	25.0	\$ 600.00	\$ 15,000.00
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA	10.0	\$ 350.00	\$ 3,500.00
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	50.0	\$ 225.00	\$ 11,250.00
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	150.0	\$ 80.00	\$ 12,000.00
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA	200.0	\$ 15.00	\$ 3,000.00
613.02	PLACING TOPSOIL - TYPE A	CY	70.0	\$ 35.00	\$ 2,450.00
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	1.0	\$ 30,000.00	\$ 30,000.00
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF	75.0	\$ 25.00	\$ 1,875.00
645.81	TYPE A SIGN POSTS	EA	8.0	\$ 100.00	\$ 800.00
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA	0.0	\$ 600.00	\$ -
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA	11.0	\$ 4,200.00	\$ 46,200.00
680.79----01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	0.0	\$ 2,500.00	\$ -
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA	0.0	\$ 300.00	\$ -
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA	0.0	\$ 200.00	\$ -
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA	0.0	\$ 250.00	\$ -
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA	0.0	\$ 2,500.00	\$ -
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	4900.0	\$ 1.00	\$ 4,900.00
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	1500.0	\$ 1.00	\$ 1,500.00
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA	10.0	\$ 150.00	\$ 1,500.00
	CURB BUMPOUT (ADDITIONAL COST)	EA	0.0	\$ 3,500.00	\$ -
	RAIL TRAIL CONNECTION	EA	1.0	\$ 7,500.00	\$ 7,500.00
625.01	SURVEY OPERATIONS (USE 2%)	LS	1.0	\$ 7,960.20	\$ 7,960.20
697.03	FIELD CHANGE PAYMENT (5%)	D-C	20298.5	\$ 1.00	\$ 20,298.51
699.040001	MOBILIZATION (4% MAX.)	LS	1.0	\$ 17,050.75	\$ 17,050.75

SUBTOTAL CONSTRUCTION ITEMS = \$ 443,319.46

CONTINGENCY (20%) = \$ 88,663.89

SUBTOTAL = \$ 531,983.35

ENGINEERING (USE 12%) = \$ 63,838.00

CONSTRUCTION INSPECTION (USE 12%) = \$ 63,838.00

RIGHT OF WAY COSTS = 0

TOTAL (2011 DOLLARS) = \$ 659,659.35

SAY \$ 660,000.00

Table 3E

PRELIMINARY ENGINEER'S ESTIMATE

DELAWARE AVENUE CORRIDOR TOTAL

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements		PIN: N/A		Contract #: N/A	
Agency: Town of Bethlehem		B&L NO: 858.037		DATE: 2-Aug-11	
Submittal: Preliminary Estimate		CALC. BY: TRJ		CHKD BY: DJR	
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	2615.0	\$ 20.00	\$ 52,300.00
203.03	EMBANKMENT IN PLACE	CY	250.0	\$ 25.00	\$ 6,250.00
206.02	TRENCH AND CULVERT EXCAVATION	CY	425.0	\$ 25.00	\$ 10,625.00
207.22	GEOTEXTILE DRAINAGE	SY	4395.0	\$ 2.00	\$ 8,790.00
304.12	SUBBASE COURSE, TYPE 2	CY	1290.0	\$ 45.00	\$ 58,050.00
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON	1150.0	\$ 90.00	\$ 103,500.00
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON	253.0	\$ 85.00	\$ 21,505.00
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON	734.0	\$ 80.00	\$ 58,720.00
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY	12435.0	\$ 6.00	\$ 74,610.00
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF	5710.0	\$ 4.00	\$ 22,840.00
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA	8.0	\$ 800.00	\$ 6,400.00
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF	2.0	\$ 400.00	\$ 800.00
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF	2.0	\$ 500.00	\$ 1,000.00
605.1001	UNDERDRAIN FILTER, TYPE 2	CY	425.0	\$ 45.00	\$ 19,125.00
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF	5635.0	\$ 2.00	\$ 11,270.00
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY	328.0	\$ 450.00	\$ 147,600.00
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON	362.0	\$ 100.00	\$ 36,200.00
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY	48.5	\$ 350.00	\$ 16,975.00
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY	2380.0	\$ 100.00	\$ 238,000.00
609.0201	GRANITE CURB	LF	5635.0	\$ 30.00	\$ 169,050.00
610.0203	ESTABLISHING TURF	ACRE	0.4	\$ 3,000.00	\$ 1,170.00
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA	85.0	\$ 600.00	\$ 51,000.00
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA	10.0	\$ 350.00	\$ 3,500.00
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	170.0	\$ 225.00	\$ 38,250.00
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA	250.0	\$ 80.00	\$ 20,000.00
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA	450.0	\$ 15.00	\$ 6,750.00
613.02	PLACING TOPSOIL - TYPE A	CY	165.0	\$ 35.00	\$ 5,775.00
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	1.0	\$ 85,000.00	\$ 85,000.00
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF	196.0	\$ 25.00	\$ 4,900.00
645.81	TYPE A SIGN POSTS	EA	23.0	\$ 100.00	\$ 2,300.00
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA	8.0	\$ 600.00	\$ 4,800.00
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA	24.0	\$ 4,200.00	\$ 100,800.00
680.79----01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS	1.0	\$ 2,500.00	\$ 2,500.00
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA	16.0	\$ 300.00	\$ 4,800.00
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA	8.0	\$ 200.00	\$ 1,600.00
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA	8.0	\$ 250.00	\$ 2,000.00
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA	1.0	\$ 2,500.00	\$ 2,500.00
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	13385.0	\$ 1.00	\$ 13,385.00
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF	5100.0	\$ 1.00	\$ 5,100.00
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA	34.0	\$ 150.00	\$ 5,100.00
	CURB BUMPOUT (ADDITIONAL COST)	EA	8.0	\$ 3,500.00	\$ 28,000.00
	RAIL TRAIL CONNECTION	EA	4.0	\$ 7,500.00	\$ 30,000.00
625.01	SURVEY OPERATIONS (USE 2%)	LS	1.0	\$ 29,656.80	\$ 29,656.80
697.03	FIELD CHANGE PAYMENT (5%)	D-C	75624.8	\$ 1.00	\$ 75,624.84
699.040001	MOBILIZATION (4% MAX.)	LS	1.0	\$ 63,524.87	\$ 63,524.87

SUBTOTAL CONSTRUCTION ITEMS = \$ 1,651,646.51

CONTINGENCY (20%) = \$ 330,329.30

SUBTOTAL = \$ 1,981,975.81

ENGINEERING = \$ 237,837.10

CONSTRUCTION INSPECTION = \$ 237,837.10

RIGHT OF WAY COSTS = \$ 30,000.00

TOTAL (2011 DOLLARS) = \$ 2,487,650.00

SAY \$ 2,500,000.00

Table 3F

PRELIMINARY ENGINEER'S ESTIMATE

PRIVATE UTILITY UNDERGROUNDING

Project Title:	Delaware Avenue Hamlet Enhancement Streetscape Improvements	PIN: N/A	Contract #: N/A		
Agency:	Town of Bethlehem	B&L NO: 858.037	DATE: 11-Jul-11		
Submittal:	Preliminary Estimate	CALC. BY: TRJ	CHKD BY: DJR		
ITEM NUMBER	DESCRIPTION	UNIT	TOTAL QUANTITY	UNIT COST	AMOUNT
	GENERAL CONTRACTOR WORK: EXCAVATION, CONDUIT, FILL, SERVICE CONNECTIONS	LS	1.0	\$ 1,380,000.00	\$ 1,380,000.00
	POWER COMPANY BETTERMENT: OVERHEAD TO UNDERGROUND TRANSFER	LS	1.0	\$ 1,425,000.00	\$ 1,425,000.00
	TELEPHONE COMPANY BETTERMENT: OVERHEAD TO UNDERGROUND TRANSFER	LS	1.0	\$ 375,000.00	\$ 375,000.00
	CABLE TV COMPANY BETTERMENT: OVERHEAD TO UNDERGROUND TRANSFER	LS	1.0	\$ 75,000.00	\$ 75,000.00
	LEGAL	LS	1.0	\$ 75,000.00	\$ 75,000.00

SUBTOTAL CONSTRUCTION ITEMS = \$ 3,330,000.00
 CONTINGENCY (20%) = \$ 666,000.00
SUBTOTAL = \$ 3,996,000.00
 ENGINEERING (USE 12%) = \$ 479,520.00
CONSTRUCTION INSPECTION (USE 12%) = \$ 479,520.00
 RIGHT OF WAY COSTS = \$ 325,000.00
 TOTAL (2011 DOLLARS) = \$ 5,280,040.00

SAY	\$ 5,281,000.00
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PRELIMINARY ENGINEER'S ESTIMATE

Table 3G

LEGEND

Project Title: Delaware Avenue Hamlet Enhancement Streetscape Improvements
Agency: Town of Bethlehem
Submittal: Preliminary Estimate

ITEM NUMBER	DESCRIPTION	UNIT
ROADWAY ITEMS		
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY
203.03	EMBANKMENT IN PLACE	CY
304.12	SUBBASE COURSE, TYPE 2	CY
402.127302	12.5 F3 TOP COURSE HMA, 70 SERIES COMPACTION	TON
402.197902	19 F9 BINDER COURSE HMA, 70 SERIES COMPACTION	TON
402.377902	37.5 F9 SUPERPAVE HMA, 70 SERIES COMPACTION	TON
490.30	MISCELLANEOUS COLD MILLING OF BITUMIONUS CONCRETE	SY
520.5014--08	SAWCUTTING ASPHALT PAVEMENT, CONCRETE PAVEMENT AND ASPHALT OVERLAY ON CONC. PAVEMENT	LF
604.070701	ALTERING DRAINAGE STRUCTURES, LEACHING BASINS AND MANHOLES	EA
604.300103	RECTANGULAR DRAINAGE STRUCTURES (TYPE A), FOR #3 WELDED FRAME	LF
604.4048	ROUND PRECAST CONCRETE MANHOLE, TYPE 48	LF
655.1003	WELDED FRAME AND RECTANGULAR GRATE 3	EA
PEDESTRIAN ITEMS (SIGNAL, CURB, SIDEWALK, CROSSWALK, & BUMPOUT)		
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY
203.03	EMBANKMENT IN PLACE	CY
206.02	TRENCH AND CULVERT EXCAVATION	CY
207.22	GEOTEXTILE DRAINAGE	SY
304.12	SUBBASE COURSE, TYPE 2	CY
608.0101	CONCRETE SIDEWALKS AND DRIVEWAYS	CY
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON
608.21	EMBEDDED DETECTABLE WARNING UNITS	SY
608.9401--07	IMPRINTING AND COLORING OF ASPHALT	SY
609.0201	GRANITE CURB	LF
605.1001	UNDERDRAIN FILTER, TYPE 2	CY
605.1701	OPTIONAL UNDERDRAIN PIPE, 4" DIAMETER	LF
680.79----01	REMOVE TRAFFIC SIGNAL EQUIPMENT	LS
680.813103	PEDESTRIAN SIGNAL SECTION - TYPE 1, 12 INCH	EA
680.813105	PEDESTRIAN SIGNAL MODULE, 12 INCH, BI-MODAL HAND/MAN SYMBOLS, LED	EA
680.8150--10	PEDESTRIAN COUNT DOWN TIMER MODULE	EA
680.8220	FLASHING BEACON SIGN ASSEMBLY	EA
	CURB BUMPOUT (ADDITIONAL COST)	EA
LANDSCAPE		
610.0203	ESTABLISHING TURF	ACRE
611.010174	PLANTING MAJOR DECIDUOUS TREE SPECIES, 3" CALIPER B&B, NURSERY GROWN	EA
611.030163	PLANTING CONIFEROUS TREE SPECIES, 6' HEIGHT B&B, NURSERY GROWN	EA
611.040144	PLANTING DECIDUOUS SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA
611.050143	PLANTING EVERGREEN SHRUB SPECIES, 2' HEIGHT/SPREAD AS SPECIFIED	EA
611.060142	PLANTING VINES AND GROUND SPECIES, 4" POTS OR CONTAINER GROWN	EA
613.02	PLACING TOPSOIL - TYPE A	CY
670.XXXX	REPLACE EXISTING OVERHEAD LIGHTING FIXTURES WITH DECORATIVE LUMINAIRES, CONDUIT AND WIRING	EA
BICYCLE		
645.5102	GROUND MOUNTED SIGN PANELS LESS THAN OR EQUAL TO 30 SF WITH Z-BARS	SF
645.81	TYPE A SIGN POSTS	EA
685.01	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF
685.02	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MIL	LF
685.04	WHITE EPOXY REFLECTORIZED PAVEMENT SYMBOLS - 15 MIL	EA
RAIL TRAIL CONNECTIONS (GROVE, BECKER, HOWARD PLACE, & COMMERCIAL)		
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY
203.03	EMBANKMENT IN PLACE	CY
304.12	SUBBASE COURSE, TYPE 2	CY
608.020102	HOT MIX ASPHALT (HMA) SIDEWALKS, DRIVEWAYS, BICYCLE PATHS AND VEGETATION CONTROL STRIPS	TON
615.99920001	BOLLARDS, MOVABLE	EA
MISCELLANEOUS STANDARD ITEMS		
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS
625.01	SURVEY OPERATIONS (USE 2%)	LS
697.03	FIELD CHANGE PAYMENT (5%)	D-C
699.040001	MOBILIZATION (4% MAX.)	LS

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

IV. Funding Programs

Potential funding programs are listed in Table 4 below:

Table 4

Administrator	Program
Capital District Transportation Committee—Transportation Projects and Programs	<p>Transportation Improvement Program: Eligible project sponsors include NYSDOT, CDTA, counties, cities and other municipalities and public entities. CDTC’s eligibility criteria require integration of modes and appropriate integration of transportation and land use in all projects; a variety of fund sources are programmed through the periodic TIP update. Partial listing of fund sources/types - Spot Improvement Program, Transportation Enhancement Program (TEP), Safe Routes to School, Congestion Mitigation and Air Quality Improvement (CMAQ) program. All candidate projects must be consistent with CDTC’s New Visions 2030 Plan as reflected in CDTC’s adopted Planning and Investment Principles; some fund sources have additional specific requirements.</p> <p>Community and Transportation Linkage Planning Program: Provides consultant or CDTC staff technical assistance for joint regional-local planning initiatives that link transportation and land use.</p>
New York State Department of Transportation	<p>Transportation Enhancement Program: Projects must fall into one or more of 12 Federal Highway Administration (FHWA) categories to be eligible for funding, including Provision of Facilities for Bicycles and Pedestrians; Provision of Safety and Educational Activities for Pedestrians and Bicyclists; and Preservation of Abandoned Railway Corridors (Including Conversion and Use for Pedestrian and Bicycle Trails). Project applications may be developed by any municipality or non-profit incorporated group; a historic preservation society, for example. All applications must be sponsored by one of the three groups: a municipality (county, city, town or village); a state agency (other than DOT); an Authority (other than the New York State Thruway Authority, Canal Corporation). The availability of</p>

DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Administrator	Program
	future TEP application rounds will depend on the continuation of the program by Congress in the next surface transportation act.
New York State Office of Parks, Recreation and Historic Preservation—Trail Development	Land and Water Conservation Fund Program: A matching grant program for the acquisition, development and/or rehabilitation of outdoor park and recreation facilities. Funds are available to municipal public agencies and Indian tribal governments. Funded projects must reflect the priorities established in SCORP (Statewide Comprehensive Outdoor Recreation Plan) and be available to the general public. Source of funds: The National Park Service.
	Recreational Trails Program: A matching grant program for the acquisition, development, rehabilitation and maintenance of trails and trail-related projects. Funds are available to non-profit organizations, municipal, state and federal agencies, Indian tribal governments and other public agencies and authorities. Funded projects must be identified in, or further a specific goal of, the SCORP and must be available to the general public. Source of funds: Federal Highway Administration.
	Environmental Protection Fund, Parks Program: A matching grant program for the acquisition or development of parks and recreational facilities for projects to preserve, rehabilitate or restore lands, waters or structures for park, recreation or conservation purposes. Funds may be awarded to municipalities or not-for-profits with an ownership interest, for indoor or outdoor projects and must reflect the priorities established in the NY State-wide Comprehensive Outdoor Recreation Plan.(.
	Environmental Protection Fund, Acquisition: A matching grant program for the acquisition of a permanent easement or fee title to lands, waters or structures for use by all segments of the population for park, recreation, conservation or preservation purposes. To be used for all three program areas where acquisition is of more importance than



DELAWARE AVENUE HAMLET ENHANCEMENT STUDY

Implementation- August 3, 2011

Administrator	Program
	development.
New York State Assembly	Grant Action News: Free monthly newsletter identifies what grant opportunities are available. Also available is the Catalog of State and Federal Programs Aiding New York's Local Governments (http://assembly.state.ny.us/gan/)
Foundations, Private and Non-Profit Sources	Foundation Center: Maintains the most comprehensive database on U.S. grant-makers and their grants (http://foundationcenter.org)
Other - New York State	The Governor's Traffic Safety Committee (GTSC) oversees New York State's highway safety program and receives funding from the National Highway Traffic Safety Administration to address highway safety related problems. The goal of the program is to prevent motor vehicle crashes, save lives, and reduce the severity of injuries suffered in crashes on the state's roadways. The GTSC distributes these funds to state agencies, local governments and qualifying not-for-profit agencies through a grant award program.

