NAUGATUCK VALLEY COUNCIL of GOVERNMENTS

RT. 8 & WATERBURY BRANCH LINE CORRIDOR TRANSIT-ORIENTED DEVELOPMENT & ALTERNATE MODES ASSESSMENT PROJECT

Work Program

August 25, 2016

Working Draft to refine Work Elements, redaction of prior studies valid data, and as a means to finalize Tasks and expectations.

Task 1: Stakeholder Advisory Committee

A Stakeholder Advisory Committee (SAC) will be formed to provide oversight and direction for the study, and monitor the planning process. The SAC will be comprised of government, business, and civic representatives from the communities. The Connecticut Department of Transportation will be invited to participate on the SAC. The AECOM Team will assist NVCOG in identifying appropriate representatives and participate in SAC meetings, share documents and coordinate SAC activities.

The SAC will guide discussions on corridor alignment alternatives and transit options. The NVCOG will be responsible for managing the SAC. Activities include:

- Set study goals and objectives
- Guide SAC meetings and provide guidance and direction of the study
- Work program development
- Assist in development of charrettes and list of participants
- Set SAC meeting agendas, prepare meeting material and documents
- Prepare meeting minutes

AECOM Tasks:

Task 1A: Participate in three (3) SAC Meetings.

Task 1B: Prepare meeting displays and illustrations, up to nine (9) total.

Task 1C: Setup correspondence/communications tools.

Task 1D: Develop goals and objectives.

Deliverables:

- SAC meeting agendas
- Project goals and objectives

Note: all deliverables for this study – reports, documents, technical memoranda - will be provided in electronic files in a MS Word format. Data files will be in MS Excel format.

Task 2: Public Outreach & Engagement

The AECOM Team will initiate and assist NVCOG in the conduct of a proactive Public Outreach and Engagement process. The purpose of this task is to engage the public in a discussion regarding future transportation options for the Route 8 and Waterbury branch rail line corridors. As part of this task, the AECOM Team will conduct a public information meeting and create a project webpage. Information on the project and documents and plans on the project will be posted on the website.

Task 2A: Develop Public Outreach & Engagement Plan.

Task 2B: Create and maintain project Website or webpage on the NVCOG site.

Task 2C: Conduct one public outreach meeting.

Task 2D: Prepare project summary and information brochure.

Task 2E: Prepare draft meeting notes for public meeting; NVCOG to review and approve before finalizing.

Task 2F: Prepare PowerPoint presentation for public information meeting.

Deliverables:

- One Public Information Meeting
- Project Website/Webpage
- Public Outreach Plan

Task 3: Definition of Study Area

The proposed study area includes the Route 8 corridor primarily from downtown Bridgeport to the Derby-Shelton rail station and the Waterbury Branch Line corridor from the Devon wye to the Waterbury commuter rail station. The downtown areas of Shelton, Derby, Ansonia, Seymour, Beacon Falls, Naugatuck and Waterbury are also included in the study area. The WBL rail stations are located in the municipal centers and there are opportunities to emphasize downtown development initiatives on TOD-style actions.

Task 3A: Establish target corridors and develop base maps that identify existing transportation facilities and infrastructure, including rail infrastructure (sidings, interlockings, bridges), fixed-route bus services (Greater Bridgeport Transit, CT-Transit New Haven Division and CT-Transit Waterbury Division), and highways.

Task 3B: Identify and map land use parcels within ½ mile of the commuter rail stations – Derby-Shelton, Ansonia, Seymour, Beacon Falls, Naugatuck and Waterbury. Up to six (6) maps. (Note: NVCOG will provide land use, zoning and parcel data and mapping as described in the Study Area Data Profile).

Task 3C: Create and maintain geodatabase.

Task 3D: Land use, zoning district, demographic, population and income data will be collected for the study area and the study corridor within ½ mile of the selected roads, highways, and rail stations. Existing zoning designations, land uses and infrastructure will be used to develop "as-of-right" build-out scenarios, representing the baseline, *no- action* scenarios. This will include Derby, Ansonia, Seymour, Beacon Falls, Naugatuck and Waterbury. For Shelton, data will be collected for the downtown area only (within ½ mile of radius of the rail station).

Task 3E: Identify and locate any relevant brownfield sites and other critical environmental conditions

using existing inventory of Brownfields from NVCOG. (Note: NVCOG will provide information, data and mapping of all Brownfield sites within the project study area).

Task 3F: Identify prime areas suitable for transit oriented development projects.

Task 3G: Estimate "as-of-right" development scenarios for each station area to help determine what build-out scenarios the cities within the corridor could achieve under current/existing zoning regulations, and establish as the baseline condition.

Deliverables:

- Transportation Infrastructure Base Map
- Land Use Base Map
- Baseline Build-out Scenario

Task 4: Data Collection & Analysis of Existing Conditions

Data will be collected on existing local bus and rail operations serving the area and an overview of all services in the Study Area will be developed. Ridership data and operating statistics will be obtained from each transit (bus and rail) operator for their services provided within the corridor. The assessments and recommendations from the Connecticut Department of Transportation *"Waterbury Branch Line Study"* will be reviewed and extracted as necessary.

Task 4A: Review of Previous Studies. Review previous studies related to the corridor, including:

- CTDOT Waterbury Branch Line Improvement Study
- State and regional Long Range plans
- Greater Bridgeport Alternate Modes Study
- Let's Go CT (parts relevant to Waterbury Branch and corridor)
- Up to four others may be identified for review

Task 4B: Collect data and document existing fixed-route bus service operations:

- Ridership
- Revenue miles and hours
- Operating costs and revenues
- Rolling stock – age, capacity and condition
- On-time performance

The following fixed route systems will be included in this task: CT Transit Waterbury (operated by North East Transportation), Greater Bridgeport Transit (GBT), CT Transit – New Haven and CTfastrak. There will be one in person meeting with each provider. On board route evaluations and ridership data collection will be conducted for each route. (Note: NVCOG will provide AECOM fixed-route data available from its databases.)

Task 4C: Collect data and document existing commuter rail service:

- Ridership
- Revenue miles and hours
- Operating costs and revenues
- Rolling stock – age, capacity and condition
- On-time performance

On board ridership counts for each train will be conducted to obtain boarding and alighting's for each station and trip.

Task 4D: Document programmed transit system improvements with timelines and anticipated implementation dates; identify program source and project costs if available.

Task 4E: Collect existing traffic volume count data from available CTDOT database and document existing operating levels of service during peak commuting periods. Special attention will focus on the existing and future operations over the Commodore Hull Bridge carrying Route 8 over the Housatonic River, including the flow of traffic using the interchanges to downtown Derby and Shelton, respectively. This will include up to six (6) intersection turning movement and six (6) ATR counts. (Note: NVCOG will provide turning movement and ATR count data available and collected as part of the Route 34 reconstruction design project).

Task 4F: Determine inter-municipal travel and journey-to-work patterns using within the study area corridors.

Task 4G: Determine travel times and speeds via transit (based on schedules) and highway modes over the length of the corridor and at and between key intermediate point.

Task 4H: Estimate future transit ridership and traffic volumes based on a no build scenario.

Task 4I: Identify existing parking inventory within ½ mile of rail stations.

Task 4J: Environmental mapping of surface waters, floodplains, wetlands, water quality, endangered species and habitats, farmland soils, cultural, recreational, community resources and historic sites. Map scale will be 1:24,000.

Deliverables:

- Parking Inventory
- Review of previous studies summary report
- Existing Conditions Technical Memo
- Travel Pattern and Journey-to-Work Maps (2)
- Environmental mapping

Task 5: TOD Scenarios

The land uses and properties surrounding the commuter rail stations in Ansonia, Seymour, Beacon Falls and Naugatuck will be assessed to identify potential development patterns and uses to support enhanced transit operations and encourage the use of transit – i.e. Transit-Oriented Development (TOD). Included in this task is the review of previous redevelopment plans prepared for each community and analysis of various factors studied in Tasks 3 and 4 that affect or influence future development (i.e. zoning, market, demographic, access to transit, traffic, "first-mile/last mile" connectivity, parking, infrastructure, brownfields, floodplain, historic site and natural resources). In addition, the Team will review potential development in Shelton, including a review and update of the TOD efforts related to Derby rail station and how TOD efforts can be extended to Shelton.

The details of each build-out scenario (land use type, intensity, and distribution) and alternate alignment will be modeled using a travel demand model to determine their relative impacts on the community. Traffic and transportation issues will be the primary output of this modeling to determine necessary infrastructure investments. Based upon projections for growth that will result from new development and potential redevelopment options, a traffic impact and public transit ridership study will be conducted to identify strategies for increasing transit ridership. Non-motorized transportation such as bicycle and pedestrian elements will also be reviewed in terms of improving access to the rail stations from residential areas. Emphasis will be placed on reducing auto traffic impacts to the TOD areas.

The AECOM Team and NVCOG will develop TOD guiding principles specific to the Naugatuck Valley planning region. This will be based on the framework developed by the NVCOG in Task 2 of the region's TOD planning study and in the report, *"Transit Oriented Development in the Lower Naugatuck Valley: Model Zoning & Financial Tools."*

Task 5A: TOD Design Workshops. The AECOM Team will conduct ten (10) design workshops to inform the development of alternative transportation options and TOD concepts. The workshops will be approximately 3 hours and two workshops will be held in each of these five communities: Shelton (focus on Bridgeport Avenue), Derby, Ansonia, Seymour-Beacon Falls, and Naugatuck. The workshops will feature interactive work sessions where planners, designers, stakeholders and citizens collaborate to produce concept plans.

- First Workshop: The first workshop will focus on residents' and other stakeholders' vision for their station areas and visual preferences for TOD in their community. During the workshop, planners and designers will facilitate discussion about the principles and benefits of TOD and elicit discussion about the applicability of each principal or whether guidelines associated with any of the principles should be modified for their community. The principles and guidelines will generally include:
    - Human-scaled building facades or streetscapes

- Traditional proportions to the arrangement of windows, doors, cornices and rooflines
- Continuity of "street wall" close to the back of sidewalk
- A complimentary mix of uses, with retail uses on ground floor (where appropriate) and residential or office uses on upper floors.
- Shared parking
- Signage
- Streetscape design

The principal objective of this workshop is to get public understanding of the characteristics and benefits of TOD and public input and support for TOD forms and principles that are appropriate for their community.

- Second Workshop: The second workshop will focus on where, generally TOD could occur within a 1/2 mile radius of the station of each community. At this workshop the Team will present its recommendations for the Model TOD Block for their community. This diagram (or series of diagrams) will illustrate:
  - Building size (floor plates) and massing (height, articulation of roof lines and setbacks)
  - Density (general lot sizes and floor area ratios)
  - Building uses (including mixed-use)
  - Potential public open space with the block
  - Relationship of buildings to the streets
  - Complete Streets strategies and pedestrian enhancements that would be appropriate to calm traffic speeds, improve the walkability and bikability of the districts, and improve access to transit.
  - "Green Infrastructure" elements
  - The location and extent of parking (including potential structured or under-building parking)
  - Incorporation of meaningful and usable public open space (e.g. pedestrian plazas or parklettes)

  Importantly, the Model Block will be respectful of the context and unique attributes or qualities of each community relative to:

  - TOD Principles: The Model Block will incorporate the principles established with residents during the first workshop (see above).
  - Historical Context: The design of the Model Block will reflect the historic design vernacular of each community;
  - Community Preferences: The massing, density and mix of uses will be based on resident preferences expressed during the first workshop;
  - Station Area Context: The Model Block will be respectful of existing development, in particular, deference to any adjacent residential districts.

- Adaptive Reuse of Historic Buildings: The preservation, adaptive reuse and integration of structurally sound vacant or underutilized mill buildings.
- Environment: The application of the Model Block attributes and metrics on TOD opportunity sites will consider possible flood plain restrictions or other environmental features that represent constraints to development.

The Team will engage workshop participants in discussions on possible modifications to the Model Block as well as how the Model Block may need to be moderated for each of the various opportunity sites. For example, residents may feel that the Model Block is appropriate for sites immediately adjacent to the train station at the town center, but may need to be scaled back in terms of building heights or overall density for outlying sites or for sites that are directly adjacent to residential districts.

The principal objectives of this workshop are to engage the public on how the TOD principles and community preferences established in the first workshop would be interpreted or manifested in their downtown or station area as well on opportunity sites that are located outside of the center of their communities.

Each workshop will require advance logistical planning and coordination with NVCOG and host communities and will be held in accessible and central locations. As part of advance preparation for the workshops, or between the first and second workshops, the Team will conduct technical meetings and interviews with government agencies, municipal officials and staff, key stakeholders or neighborhood and community groups, as appropriate, to evaluate alternatives and discuss concerns.

Task 5B: Develop Conceptual TOD Build-Out Plan. Based on the workshops and the metrics associated with the "Model Block" for each community, the Team will identify sites (opportunity sites) within each station area where the build-out associated with the Model Block (or slight variations of the Model Block) could be implemented within the station areas of each of the five host communities. This Conceptual TOD Build-Out Plan will consider the market factors and the physical, natural, cultural and historic constraints and opportunities unique to each area and will provide technical information (e.g. total square footage of development by use, floor-area-ratios (FARs), number of parking spaces/spaces per 1,000 Sq. ft. of floor area).

The Conceptual TOD Build-Out Plans will not provide designs for each opportunity site, rather, they will indicate, numerically or qualitatively, how the attributes of the "Model Block" will be manifested on each opportunity site. The targeted design and implementation focus on TOD plans will be for up to a ¼ mile radius of the rail stations. A general overview of constraints and opportunities up to ½ mile radius of the rail station will be prepared.

Task 5C: Conduct a build-out analysis for each station area to determine how future TOD development (as identified in Task 5B) could impact transportation demand. The AECOM Team will develop a build-out analysis model/tool to test various assumptions (zoning, land use) and planning scenarios (infrastructure investment).

Task 5D: Conduct an economic and market analysis of TOD scenarios and develop public, private and public-private investment strategies. The AECOM Team will determine investment needed to achieve

preferred land use patterns.

Task 5E: Assess the existing condition of each of the commuter rail stations and identify needed improvements and enhancements to better connect to adjacent town centers. This will include a review of the most recent station reports and field assessments.

Deliverables:

- Ten (10) Design Workshops (two in each of five communities)
- Station Condition and Needs Reports
- "Model Block" Sketches for each of five communities incorporating TOD Design Principles
- Conceptual TOD Build-Out Plans and TOD Build-Out Scenario for each of five communities
- Market Analyses
- Investment Strategies

Task 6: Alternative Transportation Modes Needs Assessment

This Task will pull together all data and mapping developed during previous tasks to assess transportation needs and determine future transportation services and options to meet those needs.

Task 6A: Analyze current demographic and socio-economic data to identify and quantify the transportation needs of the region. Available data from CTDOT statewide survey data and CTDOT travel demand modeling trip generation data available, as well as data available from travel surveys conducted by NYMTC will be reviewed to determine where riders of new service would be likely to come from.

Task 6B: Assess various alternative transportation services for the region to better connect the Derby-Shelton rail station to downtown Bridgeport and/or the proposed new rail station at Barnum on the East Side. Connections along Bridgeport Avenue will be evaluated. In addition a review of CTDOT and Metro Norths plans for the Devon wye and potential transfer station will be conducted. The assessment will include the feasibility of instituting Bus Rapid Transit along the corridor, enhancing existing bus service and expanding and enhancing commuter rail service. The type of BRT system and up to three alignment options will be developed; improvements or changes to existing ramps and access to Route 8 will be identified. A parking supply and demand assessment will be performed for the Derby-Shelton station only, as the starting point for a BRT system.

Task 6C: Prepare a set of overlay maps (up to 4) depicting transit trip origins and destinations, and potential transit trip generation areas.

Deliverable:

- Alternative Transportation Modes Assessment

Task 7: Corridor Alignments

The approaches to deliver improved public transit services along the corridors at present and in future years will be determined and plausible transit alignments and land use alternatives for the north-south transit corridor will be developed. The alternatives will represent a range of land use mixes and intensities and incorporate the public actions that would be required in order for each to become a reality.

Task 7A: Develop up to three possible alternative transportation network structures and land use scenarios. These will offer a range of options for the future development of the region.

Task 7B: Determine opportunities for the proposed rail system improvements and how they may interact with existing bus services, including logical terminals and stops. The existing CTDOT improvement plans will be used only as a starting point; the Team will independently assess travel in the corridor and develop alternatives including BRT options that represent best actions to improve travel within the corridor.

Present Range of Land Use Mix & Intensities Options

Task 7C: Develop alternate service plans in the Route 8 Corridor for possible BRT service and evaluate bus operations relating to the plans. Three fully integrated comparative network structures compared to the baseline bus and rail project enhancement should be developed compared to the current plan. Draft subsets for regional linkages, east-west and north-south collection nodes will also be evaluated.

Task 7D: Determine environmental mitigation elements and livability principles (complete streets, non-motorized, storm water) to complement proposed transportation alternatives.

Task 7E: Develop an action plan and define public steps needed to accomplish preferred actions.

Deliverable:

- Corridor Alignment Concept Plans
- Implementation Action Plans
- Environmental Mitigation Scenarios

Task 8: Waterbury Branch Line Improvements Action Plan

The Connecticut Department of Transportation completed a needs and feasibility study on improvements along the Waterbury Branch Line. The study identified long and short-term infrastructure projects that would substantially enhance operations and service potential, as well as improve passenger station access and facilities and promote multi-modal connections. The cost of these projects is substantial, ranging from a few

million dollars to nearly $700 million. The CTDOT is currently designing a central traffic control system for the WBL (design completion date is 2018) and is committed to constructing two-to-four by-pass sidings (Devon, Derby, Beacon Falls and Waterbury). Under this task, planned and proposed infrastructure projects will be reviewed and feasibility will be determined.

Task 8A: Review planned/proposed WBL Infrastructure projects listed in the most recent Waterbury Branch Line needs and feasibility study completed by the CTDOT. The status and feasibility of programmed projects will be determined.

Task 8B: Determine and assess the feasibility of proposed infrastructure improvement.

Task 8C: Develop an investment strategy and Plan for future WBL infrastructure projects.

Task 8D: Assess feasibility of constructing a permanent transfer station for the WBL at Devon and develop operating schedules and service plans to support more frequent service on the WBL. A site investigation will be performed with CTDOT and Metro North.

Task 8E: Up to three (3) in person meetings with CTDOT regarding WBL.

Deliverable:

- Waterbury Branch Line Infrastructure and Operations Improvement Program Action Plan
- WBL Infrastructure Improvement Program Investment Plan
- Feasibility of Devon Transfer Station

Task 9: Preferred Alternatives Plan

The SAC will review the conceptual design alternatives and service plans and determine a preferred alternative regional scenario. An implementation plan for the preferred scenario will be prepared. The Plan will include the steps and actions needed to implement preferred actions, as well as the costs for infrastructure improvements, new service operations and land acquisition.

Task 9A: Presentation of Conceptual Design Alternatives and Service Plans to the Stakeholder Advisory Committee and determination of preferred alternative transportation plan.

Task 9B: Develop BRT and Devon Station visualization focusing on the proposed BRT corridor from the Derby-Shelton rail station to the proposed rail station in East Bridgeport with possible station stops at Derby-Shelton and Bridgeport Avenue and the proposed Devon transfer station.

Task 9C: Based on the preferred alternative transportation scenario, develop the final action and implementation plan for Preferred Scenario. The final plan will include:

- Infrastructure improvements
- New service operations plans
- Land acquisition needs
- Conceptual level cost estimates with an inflation factor

- High level benefit-cost analysis for preferred alternative identifying costs and potential benefits through 2040
- Funding and finance strategies for rail, BRT and TOD infrastructure

Deliverable:

- BRT and Devon Station Visualization
- Final Alternative Transportation Action Plan

Task 10: Project Administration

The NVCOG will administer the project contract, provide coordination and liaison with FTA and CTDOT, prepare and process invoices, and prepare progress reports.

Task 10A: The AECOM Team will prepare a Project Plan and project schedule for the NVCOG that includes the agreed upon program and schedule with key milestones.

Task 10B: The AECOM Team will submit monthly invoices and progress reports, including narratives of work accomplishments in support of requests for payment for services.

Task 10C: Conduct a project kick-off meeting at NVCOG with key team members and NVCOG to review schedule, communication protocol, list of Study Advisory Committee members, previous studies for review and other relevant information.

Task 10D: Participate in conference calls on a regularly scheduled basis (recommended every 2-3 weeks depending on stage of project, for a total of up to 39 conference calls) to provide progress, updates and discuss any issues, problems and delays. The conference calls will be to discuss project status, issues and monitor progress and ensure compliance with budgets and schedules. The AECOM Team will prepare a brief agenda for each conference call and set up calls via MS Outlook.

Task 10E: Develop Technical Advisory Committee and Project Mailing List.

Task 10F: Assemble Work Plans/Reporting, Estimates, Review Like Plans, Peer Consultation, Negotiation, Documentation, Contract Admin., Billings, Product/Deliverable QC.

Deliverable:

- Project Plan and Schedule
- Monthly Progress Reports

Study Area Data Profile

Demographic Data – 2014 ACS by Block Group:

- Population
- Population density
- Median Age
- Means of Transportation to Work
- Travel Times to Work
- Time Leaving Home to Go to Work
- Place of Work
- Median Household Income
- Per Capita Income
- Housing Units
- Housing Tenure
- Year Housing Structure Built
- Value of Owner Occupied Housing Units
- Zero Vehicle Households/1-Vehicle 2+ Person Households

Journey-to-Work:

- By Place of Residence to Place of Work
- By Place of Work from Place of Residence

Study/Project Mapping

NVCOG will provide the following data/maps for the study:

Study Area Maps – aerial and planimetric:

- Route 8 corridor from downtown Bridgeport to the Derby- Shelton rail station
- Waterbury Branch Line corridor from the Devon wye to the Waterbury rail station
- Downtown station areas:
    - Shelton
    - Derby
    - Ansonia
    - Seymour
    - Beacon Falls
    - Naugatuck
    - Waterbury

Transportation Facilities Maps:

- Rail infrastructure -- sidings, interlockings, bridges
- Fixed-route bus services – Greater Bridgeport Transit, CT-Transit New Haven Division, CT-Transit Waterbury Division

- Highways

Land Use Maps:

- Parcels within ½ mile of the commuter rail stations:
    - Derby-Shelton
    - Ansonia
    - Seymour
    - Beacon Falls
    - Naugatuck
    - Waterbury
- Parcel data to include units, floors, square footage, owner, vacancies, etc.
- Zoning districts within ½ mile of the commuter rail stations
- Housing and population (thematic maps) by block group within ½ mile of the commuter rail stations
- Future development plans/future land use/zoning as available

Brownfields Mapping – sites within ½ mile of the commuter rail stations