

# Central Connecticut Rail Study

Connecticut Department of Transportation

CTDOT Project #171-366

Prepared by URS Corporation AES, Rocky Hill, CT

Scope of Services

FINAL - 12/16/2011

## Background

The State of Connecticut, through the Connecticut Department of Transportation (CTDOT), has determined the need to conduct a market analysis and feasibility study regarding the implementation of fixed-guideway rail or bus transit service in the Central Connecticut Corridor, directly serving the cities of Waterbury, Bristol, New Britain, and Hartford and adjacent towns of Plainville, Berlin, and Plymouth. This initiative will be referred to as the “Central Connecticut Rail Study” (CCRS).

URS Corporation has been assigned by CTDOT to conduct this study, under the Intermodal Planning Task-Order contract No. 2127-2128. The URS Team has prepared this Draft Scope of Services outlining an overall approach to conduct this study. This document has been reviewed and accepted by CTDOT for Stakeholder consultation. The URS Team and CTDOT are soliciting additional input into this Draft Scope of Work through a series of Stakeholder scoping meetings.

## CENTRAL CONNECTICUT RAIL STUDY – DRAFT SCOPE OF WORK

### **TASK 1 PROJECT MANAGEMENT**

#### ***Task 1A URS Team Project Management***

The URS Team’s Project Manager (PM) will communicate regularly with CTDOT's PM on technical and policy matters and issues affecting completion of this study. The URS PM will also supervise individual discipline leaders to assure appropriate and/or required coordination has been accomplished with the Stakeholder Advisory Committee (SAC); federal, state, regional and local agencies; community/special interest groups; and the general public.

A study kick-off meeting will be held and attended by up to four study team members.

#### ***Task 1B Study Spokesperson***

The CTDOT PM will serve as the spokesperson for this study. At times, and at the direction of the CTDOT PM, the URS PM will function as study spokesperson at meetings and public briefings to assure consistency of information disseminated.

### ***Task 1C Study Record***

Relevant technical data, drawings, and reports will be maintained by the URS Team and delivered to CTDOT at completion of this study. Management and financial records will be maintained for possible review or audit for a period of three (3) years following completion of this contract.

A journal will be maintained for this study that will include technical submissions, meeting notes, and key correspondence. All information prepared for this study will document methodologies and procedures used. All plans and reports will be prepared in English units.

### ***Task 1D Monthly Progress Reports (18 progress meetings)***

The URS Team will develop and submit monthly reports documenting the progress of each task during the reporting period. Reporting shall identify activities accomplished during the reporting period, as well as activities anticipated during the next reporting period.

Progress reports will accompany the monthly invoices and be in a format specified by CTDOT. An 18-month schedule has been established to complete the tasks associated with this Scope of Work.

The URS Team anticipates meeting with CTDOT staff on a monthly basis (18 meetings) to discuss the status of this assignment, as well as policy and technical matters. These meetings may be in person or via telecom as agreed to with CTDOT.

## **TASK 2 DRAFT SCOPE OF SERVICES**

The URS Team will develop a Draft Scope of Services for the CCRS in coordination with CTDOT prior to any review meetings with key stakeholders. This Draft Scope of Services will be presented to the stakeholders for input, feedback, and revisions. Upon completion of these initial study scoping meetings, the URS Team, in coordination with CTDOT, will prepare a Final Scope of Services based on the review and input of the Stakeholders.

The scoping meetings will afford the study team the opportunity to have an early dialogue with key corridor Stakeholders in developing the goals and objectives through a transparent study process.

## **TASK 3 PURPOSE AND NEED STATEMENT**

The URS Team will develop a preliminary Purpose and Need Statement in coordination with CTDOT prior to the initial meeting with the Study Advisory Committee (SAC). This Purpose and Need statement will be presented to the SAC for feedback and revisions. At the end of the meeting, the URS Team, in coordination with CTDOT, will revisit the Purpose and Need Statement and revise it based on the findings from the initial Stakeholder input. The Purpose and Need statement will be revisited as warranted during and upon completion of this study analysis. The Purpose and Need statement developed through this study process will provide the basis for

the Purpose and Need statement to be prepared as part of future environmental analysis and documentation, if pursued.

#### **TASK 4      COORDINATION**

This task will include coordination by the URS Team with the key stakeholders within the corridor, as well as Metro North Railroad (MNR); Amtrak; Pan Am Southern Railway, and potentially other rail freight operators (including Providence and Worcester Railroad Company, Connecticut Southern Railroad Company, Naugatuck Railroad Company, and Central New England Railroad Company; Federal and State regulatory agencies; Municipalities; Regional Planning Organizations; and corridor Stakeholders. CTDOT will be responsible for maintaining close coordination with the Connecticut Office of Policy Management (OPM) with assistance from the URS Team as needed. The first step in this task is to conduct stakeholder scoping meetings, as described in Tasks 4A and 4B.

##### ***Task 4A      URS/CTDOT Kick-Off Meeting***

The URS Team will prepare the following information and attend a meeting with CTDOT to review the Draft Scope of Services, overall study schedule, list of potential stakeholders, the proposed study schedule, briefing and presentation materials to be used for the Stakeholder scoping meetings.

The draft briefing and presentation materials will provide information regarding the defined study area limits and the overall study tasks, goals and objectives. . It will serve as an outline for discussions at the scoping meetings and will include key questions to solicit input from Stakeholders.

Subsequent to this URS/CTDOT Kick-Off meeting, the information will be modified based upon the meeting discussions and consensus, and a Stakeholder Scoping Process Plan will be prepared, as discussed in Task 4B.

##### **Deliverables:**

*Draft and Final Scope of Services for Conducting Stakeholder Scoping Meetings*

*Proposed and Final Schedule of Stakeholder Meetings*

*Proposed overall Study Schedule*

*Draft and Final List of Stakeholders*

##### ***Task 4B      Stakeholder Scoping Meetings***

In October 2011, the URS Team and representatives from CTDOT attended two (2) scoping meetings. One (1) meeting was held with representatives from the Council of Governments of the Central Naugatuck Valley, and one (1) meeting was held with representatives from the Central Connecticut Regional Planning Agency. Each meeting was two (2) hours in length and was attended by one (1) member of the URS Team. These meetings allowed representatives from these two planning agencies to offer feedback on the scope of the Central Connecticut Rail Study.

#### ***Task 4C Stakeholder Advisory Committee (3 meetings)***

The Stakeholder Advisory Committee (SAC) will be established for this study by CTDOT. It is anticipated that the primary responsibility of the SAC will be to participate in the overall study process, provide and disseminate information, review and comment on draft documents and address specific issues associated with the development of study recommendations. Information collected from the Stakeholder outreach scoping meetings will be used to help determine the invitees and responsibilities of the SAC. The Study Team will provide SAC members a reasonable opportunity to review materials in advance of scheduled meetings. All study information will be e-mailed or a hard copy will be sent via postal mail.

In addition to appropriate CTDOT staff, the following will be invited to participate in the study SAC:

- The first official or their representative from each of the study corridor municipalities;
- A representative from each regional planning organizations along the study corridor (COG of the Central Naugatuck Valley and Central Connecticut RPA) as well as the Capitol Region Council of Governments (CRCOG);
- A representative from the Federal Transit Administration (FTA);
- A representative from the Federal Railroad Administration (FRA);
- A representative from each of the appropriate state and federal regulatory agencies, including but not limited to, CT Department of Energy and Environmental Protection (DEEP), U.S. Environmental Protection Agency (EPA), CT State Historic Preservation Office (SHPO), CT Department of Economic and Community Development (DECD), U.S. Fish & Wildlife, and U.S. Army Corps of Engineers (ACOE);
- A representative from MNR;
- A representative from Amtrak;
- A representative from the freight railroad operators along the study corridor (Pan Am Southern Railway, Providence and Worcester Railroad Company, Connecticut Southern Railroad Company, Naugatuck Railroad Company, and Central New England Railroad Company);
- A representative from local bus and paratransit service operators in the study corridor;
- A representative from regional bus service providers in the study corridor;
- A representative from the CT Rail Commuter Council;
- A representative from CT Commuter Services;
- A representative from the CT Public Transportation Commission;
- A representative of the CT Railroad Association; and
- Members from other interested parties including local economic development corporations, chambers of commerce, etc.

All SAC meetings will be open to the public. Notices of these meetings will be put on the study website and sent to members of the Interested Parties list, outlined in Task 5D.

It is anticipated that the SAC will meet up to three (3) times during this study. These meetings are anticipated to last up to three (3) hours each. It is assumed that four (4) URS Team members will attend each SAC meeting to support CTDOT.

The URS Team will:

- Fully develop the role and objectives of the SAC with CTDOT, so that the advisory role is clearly understood by all;
- Work with CTDOT and the SAC to ensure that representation is appropriate;
- Develop a tentative meeting schedule, corresponding to key decision points in the study;
- Plan three (3) meetings of the SAC;
- Maintain a database of SAC members;
- Be responsible for scheduling the date and time, identifying the meeting location, and developing draft meeting notices for CTDOT approval;
- Prepare a draft agenda for each SAC meeting to be approved by CTDOT;
- Revise and finalize each SAC meeting agenda;
- Develop and coordinate meeting materials (i.e. reports, slides, illustrations, graphics, designs, and maps);
- Send (via mailed postcard or email) meeting reminders to each of the SAC members three (3) days prior to each meeting;
- Distribute (via postal mail or email) SAC meeting notices, draft documents, and agenda to SAC members two (2) weeks prior to a scheduled meeting. These documents will also be posted on the study website, two weeks prior to the scheduled meeting;
- Facilitate each SAC meeting
  - At the first SAC meeting, present the objectives of the study, answer questions to clarify the objectives, and respond to general questions about the study;
- Write, revise, and finalize meeting notes;
- Distribute meeting notes to SAC members; and
- Post meeting notes on the website.

***Task 4D Metro-North Railroad Coordination (2 meetings)***

The URS Team, in consultation with CTDOT, will establish a liaison with MNR Planning and Operations. The intent will be to work with MNR on an as-warranted basis through the course of the study. It is anticipated that there will be up to two (2) meetings with MNR staff in conjunction with this study. These meetings are anticipated to last up to two (2) hours each. Two (2) members of the URS Team will attend each of these meetings.

***Task 4E Amtrak Coordination (2 meetings)***

The URS Team, in consultation with CTDOT, will establish a liaison with Amtrak. The intent will be to work with Amtrak on an as-warranted basis through the course of the study. It is anticipated that there will be up to two (2) meetings with Amtrak staff in conjunction with this study. These meetings are anticipated to last up to two (2) hours each. Two (2) members of the URS Team will attend each of these meetings.

***Task 4F Freight Service Operators Coordination (3 meetings)***

The URS Team will establish a liaison with the primary freight service operator, Pan Am Southern Railway, for this study, particularly as it relates to the operation of passenger rail

service on their freight line, and as the needs of shippers and their freight carriers must be addressed. The URS Team will collect from the freight railroads operating along this line, their current frequency of use and schedule table, active sidings, and anticipated future freight service. The URS Team will work with the operators to determine its shippers' requirements so that any potential conflicts with commuter rail operations can be resolved. The issue of passenger train operation and control will need to be discussed, as Pan Am Southern Railway owns the ROW but would not be running the commuter rail service. The intent will be to work with the operators on a continuing basis through the course of this study. It is anticipated that there will be up to three (3) meetings in conjunction with this subtask. These meetings are anticipated to last up to two (2) hours each. It is anticipated that two (2) members of the URS Team will attend each of these meetings.

***Task 4G Other Federal and State Agencies Coordination (6 meetings)***

There are various other agencies that will need to be informed of the study progress and findings, requiring meetings. These include regulatory agencies such as FTA, FRA, DECD, and OPM among others. It is assumed that there will be up to a total of six (6) meetings with these other agencies. These meetings are anticipated to last up to two (2) hours each. It is anticipated that two (2) members of the URS Team will attend each of these meetings.

***Task 4H Regional / Local Officials Meetings (4 meetings)***

Meetings with local officials will be held through the two (2) regional planning organizations, with municipalities that could be directly affected by actions considered or recommended by this study. The purpose of these meetings is to provide an overview of the study's activities; present service, infrastructure, station, and parking concepts; and solicit their views on the current conditions, station development issues, and vision for the future of rail/transit service in the Central Connecticut Corridor. It is anticipated that two (2) members of the URS Team will attend each of these meetings. It is anticipated that there will be two (2) separate meetings, lasting up to two (2) hours each, in each of the following regions with the specified municipalities, for a total of four (4) meetings:

Council of Governments of Central Naugatuck Valley:

- Waterbury

Central Connecticut Regional Planning Agency:

- Berlin
- Bristol
- New Britain
- Plainville
- Plymouth

***Task 4I Individual Stakeholder Study Meetings (5 meetings)***

It is anticipated that additional meetings/presentations to various Stakeholders in the study corridor will be required. The purpose of these meetings is to provide them with an overview of

the study's activities and to solicit their views on the current conditions and vision for the future of rail/transit service in the Central Connecticut Corridor. These meetings may include but are not limited to the following Stakeholders:

- Local Chambers of Commerce;
- Community / Neighborhood groups;
- Major employers;
- Connecticut United States Congressional delegation and/or their representatives; and
- Co-Chairs and the Ranking Members of the Connecticut General Assembly Transportation Committee and/or their representatives.

Up to five (5) Stakeholder meetings will be held during this study. It is anticipated that each meeting will last up to two (2) hours. It is anticipated that two (2) members of the URS Team will attend these meetings.

#### ***Task 4J Meeting Coordination and Meeting Minutes***

For each of coordination meetings identified in Task 4, the URS Team will be responsible for:

- Developing draft meeting minutes and making changes based on CTDOT review and comments, distributing the approved meeting minutes to each of the participants, and maintaining a log of each meeting; and
- Posting approved minutes on the project website.

CTDOT shall review all materials prior to publication/distribution.

### **TASK 5 PUBLIC OUTREACH**

Because of the numerous communities and Stakeholders associated with this study, this Public Outreach task is intended to supplement Task 4 Coordination activities. The Scope of Work for Tasks 4 and 5 shall serve as the Public Involvement Plan for this study. A log will be kept of all public comments received for this study.

#### ***Task 5A Public Information Meetings (2 sets - 4 meetings)***

The purpose of these meetings is to obtain input from the general public regarding the development of this study and its recommendations. The Public Information Meetings will be general "open house" style with brief presentations. It is anticipated that there will be two (2) sets of Public Information Meetings held throughout the Central Connecticut Corridor. It is anticipated that, for each of the two (2) sets of meetings, there will be two (2) different meeting locations/venues, for a total of four (4) meetings. These meetings are expected to last up to two (2) hours each. It is anticipated that each of these meetings will be attended by up to four (4) members of the URS Team, along with CTDOT staff.

For each of these meetings, the URS Team will be responsible for:

- Scheduling the date, time and meeting location;
- Developing an agenda for meetings for CTDOT approval;
- Developing handout material, including display graphics for CTDOT review and approval prior to publication;
- Conducting a review of the presentation for CTDOT before meeting;
- Presenting the study materials at the meeting;
- Developing draft meeting minutes and summary of the comments received at each meeting and making changes based on CTDOT review and comments;
- Publishing/posting the approved meeting minutes on the study website;
- Maintaining a log of each meeting; and
- Posting presentations from meetings on the study website.

No formal stenographer or audio recording will be required for this task.

It is anticipated that a set of Public Information Meetings will be held following both the first and second SAC meeting. The final SAC meeting will include a discussion of the comments received at the final set of Public Information Meetings.

#### ***Task 5B Website***

The URS Team for use in this study will host a separate website that will be compliant with CTDOT American's with Disabilities Act (ADA) guidelines. The URS Team will develop and maintain the website, which will include a link to the CTDOT website. The website will be used to notify the public of upcoming meetings or study events, provide study information (e.g. background and contact information, published reports), and show the methods available to communicate with the Study Team. As the study progresses, meeting announcements will be updated and relevant information added.

Specific tasks related to development and management of the website are as follows:

- Develop a set of Web Pages with information on:
  - Study Overview
  - Study Scope
  - Study Schedule
  - Study News
  - Meetings
  - Study Documents
  - Contact information, including a comment submittal form
  - Study Maps
- Create a link to the CTDOT website;
- Update the website as needed;
- Develop and maintain a database of all comments received via the study website and study email address;
- Provide reports of comments for CTDOT within the monthly progress report;



- Post appropriate study log comments and responses on study website;
- Establish and maintain an e-mail address for this study;
- Transmit e-mail to CTDOT on a timely basis; and
- Provide an automatic response to e-mail.

In addition, the Team will include use of Social Media, including Facebook, Twitter, and YouTube, as appropriate.

***Task 5C      Public Advertisements/Media Releases (Two sets of Public Information Meetings and one additional Press Release)***

Public advertisements (paid advertisements in newspapers) will be used to advertise the Public Information Meetings described in Task 5A. In conjunction with the initial advertisement, a response form will be included to provide individuals with the opportunity to be added to the study mailing list.

The URS Team shall prepare and publish public notice display advertisements, flyers, legal notices, and website postings. The URS Team will be responsible for designing the display ads and paying for their publication. CTDOT shall review all materials prior to publication.

Advertisements will be placed in regional and local newspapers with circulation along the study corridor. The ad shall be published one (1) week preceding each meeting. In addition, advertisements will be published one (1) week in advance of the public meeting in all local weekly papers. The URS Team will coordinate with the regional planning agencies to determine if there are any non-English newspapers in which advertisements should also appear.

The URS Team will prepare media releases for CTDOT’s approval. CTDOT will publish these releases on their website. Media releases shall be made available to the SAC and regional planning organizations for distribution.

***Task 5D      Study Mailing Lists***

The URS Team shall maintain a mailing list of Interested Parties throughout the study process. The Interested Parties mailing list shall include, but may not be limited to:

- State Legislators from the study corridor;
- State Legislature Transportation Committee Members;
- Connecticut Congressional Delegation;
- Individuals or organizations that have indicated an interest in this study;
- Stakeholders;
- Representatives from colleges and universities within the study corridor;
- Media;
- Freight Service Operators within the study corridor;
- Regional Planning Agencies within the study corridor; and
- Local municipal officials within the study corridor.

### ***Task 5E Cable Television***

The URS Team will use when available, cable television coverage within the study corridor to facilitate the broadcasting of meeting notices, informational videos, public meeting presentations, and discussions. The URS Team will:

- Identify all cable television resources in the study corridor;
- Notify all stations of upcoming meetings for community calendar listings;
- Invite CT-N to cover all public meetings;
- Request filming of public meetings by local area stations;
- Notify stations of the availability of CTDOT staff for interviews or special program opportunities; and
- Participate in up to three (3) interviews.

### ***Task 5F Newsletters (3)***

The URS Team will conduct outreach in the form of a printed newsletter and/or e-newsletter. The newsletter will be prepared and distributed by the URS Team to inform the public of the study progress and technical achievements, and to collect comments on any issues. Three (3) newsletters will be prepared during the duration of the study.

The URS Team will:

- Prepare each of three (3), four sided, 8.5"x11", color newsletters;
- Submit each newsletter for review and approval by CTDOT prior to publication;
- Print a total of 250 copies of each newsletter;
- Send the newsletters to the two RPAs, town halls, and public libraries within the study corridor, as well as those on the mailing list; and
- Post the newsletter on the study website.

### ***Task 5G Seat Drop (2 notices)***

For each round of the Public Information Meetings, a seat drop of flyers giving notice of upcoming meetings will be prepared and distributed on the Waterbury Branch of the New Haven Line trains and/or buses serving the study corridor, in coordination with MNR, CT Transit, and other local bus providers. If possible, notices will also be distributed on Amtrak's New Haven-Hartford-Springfield line.

The URS Team will:

- Develop a proposed list of existing bus and train routes in the corridor;
- Propose a schedule of routes to CTDOT that will receive flyers;
- Prepare a draft of each Seat Drop flyer for CTDOT/MNR review and approval; and
- Upon CTDOT/MNR approval, distribution of the Seat Drop flyer will be performed by MNR and posted on the study website.

## **TASK 6 DATA COLLECTION: EXISTING & FUTURE NO BUILD CONDITIONS**

### ***Task 6A Review Previous Studies***

A number of studies over the past several decades have examined the feasibility of rail service between Waterbury and Hartford via the Central Connecticut Corridor. The most relevant and available studies include the “Report of the Feasibility of Implementing Waterbury-Hartford Commuter Rail Service,” prepared by CTDOT Bureau of Policy and Planning in April 1992, and the “Hartford West Major Investment Study,” prepared by Wilbur Smith Associates and completed in 2003. This latter study includes three technical reports that have relevant information regarding parts of the corridor and potential for commuter rail service. Additionally, the “Waterbury-New Canaan Branch Line Feasibility Study,” conducted by Parsons Transportation Group (PTG) and completed in 2010, provides information on the market in the lower part of the corridor and transit-oriented development (TOD) potential in Waterbury. Additional studies have also been done on New Haven-Hartford-Springfield commuter rail service and the New Britain-Hartford Busway.

The URS Team will review these relevant studies in addition to any action that has taken place in the Connecticut Legislature during the past decade relating to establishing commuter rail service within the Central Connecticut Corridor.

#### **Deliverables:**

*Document Search, Collection, and Review*

### ***Task 6B Transit/Highway Data***

CTDOT will provide the URS Team with the following transit and highway traffic information, except as noted:

- Existing New Haven Line and Waterbury Branch rail schedules;
- Existing Amtrak schedules, service plans, and ridership;
- Proposed New Britain-Hartford Busway service plan;
- Existing Waterbury Branch Parking Capacity and Utilization;
- Existing (2012) and Future (2025 and 2040) New Haven Line and Waterbury Branch ridership from the CTDOT Travel Demand Model, for existing and programmed system condition (No Build) as well as latest information on New Haven-Hartford-Springfield ridership projections;
- Sales of bus/transit unitickets within the corridor
- Intercity bus routes, schedules and ridership (by URS Team);
- Local bus routes, fares, schedules and ridership (by URS Team);
- Existing (2012) and Future (2040) traffic volumes from the CTDOT Travel Demand Model, for existing transportation system condition (No Build);
- Railroad right-of-way maps (by URS Team);
- Parking use counts at the existing Waterbury rail station and park and ride lots within the study corridor;
- Anticipated/programmed/planned future changes to the transit/roadway network;

- Copies of all appropriate MNR and CTDOT existing facilities documentation;
- Freight service schedules (Pan Am Southern Railway, Providence and Worcester Railroad Company, Connecticut Southern Railroad Company, Naugatuck Railroad Company, and Central New England Railroad Company) and operating characteristics in the corridor (by URS Team);
- Available inspection and load rating reports for bridges within the corridor; and
- Planned land development activities (by URS Team based on what is available from municipalities).

## **TASK 7 ANALYSIS OF EXISTING NEEDS AND DEFICIENCIES**

### ***Task 7A Central Connecticut Rail Corridor Regional Market Evaluation***

In keeping with the marketing analysis being conducted for the Capitol Region Council of Governments (CRCOG) as part of the U.S. Department of Housing and Urban Development (HUD) Sustainable Communities grant program for the Knowledge Corridor, the URS Team will establish similar market expectations for growth potential and identify types of development that a Central Connecticut Rail or transit service would be best suited to capture.

The market analysis task will include the following activities:

- Evaluate population and demographic trends, employment, workforce skills, income levels, and existing businesses and trends for the cities of Waterbury, Bristol, and New Britain as well as the towns of Berlin, Plymouth and Plainville. The URS Team will focus on the potential of the region to attract and retain residents within the corridor based on the impacts a new rail or transit service could have.
- The URS Team will review and expand upon any existing regional economic analyses that have focused on the industries within the Central Connecticut Rail Corridor and the potential for growth in this Corridor and surrounding region. Based on information provided by the regional planning agencies within the study corridor, the URS Team will perform an existing conditions assessment of the dominant industries in the region. Employment concentration, sales and inventory, and spatial data will be considered. Based on this industry assessment, the URS Team will identify the potential for the Central Connecticut Corridor to build upon its existing industries, attract new industries, if new rail/transit service is implemented.
- The URS Team will provide estimates of population, commercial and industrial growth prospects for the entire Central Connecticut region for a 30 year horizon. The Team will also identify issues that may constrain efforts to expand the regional business and manufacturing base (e.g., lack of work force training or business incubators, regulatory barriers, industrial land use policies, property availability and other factors).

### ***Task 7B Traveler Surveys and Focus Groups***

In addition to the market evaluation described above, the Team will also conduct traveler surveys and focus group meetings to gain a better understanding of travel experiences and preferences for key groups within the corridor.

## **Task 7B.1 Traveler Surveys**

In addition to collecting existing data, the URS Team will conduct qualitative traveler surveys at agreed upon strategic locations both satisfactorily serviced by transit and not satisfactorily served by transit (defined as a location without a transit stop within five blocks or a half-mile). The survey will be a face-to-face interview using the following questions:

- Where are you coming from?
- Where are you going to?
- What modes did you use/will you use for any part of your round trip?
- If you are using a car, did you drive alone or share the ride with others?
- If you rode the bus or train (Waterbury Branch), how close was it to your origin and how close did it take you to your destination?
- If you drove, how close did you park to your destination?
- If there was a bus or train that stopped within two blocks or a quarter-mile from your destination, would you have used it instead of driving?
- Would the cost (fare) of using rail or bus transit influence whether you use it instead of your car?

Up to four (4) locations will be surveyed during the following four time periods:

- Weekday AM peak (7:00AM to 9:00AM)
- Weekday Midday (11:00AM to 1:00PM)
- Weekday PM peak (4:00PM to 6:00PM)
- Weekend (Times to be determined)

Specific survey locations will be determined by the analysis of existing transit and land use conditions, and in coordination with CTDOT and partners. Additionally, URS will work with Connecticut Commuter Services to determine if an employee travel survey could be conducted at any of the major employers located in the corridor.

## **Task 7B.2 Focus Groups**

The URS Team will also work with the CTDOT to identify two (2) representative focus groups in the Central Connecticut Travel Corridor. These meetings will follow the implementation of the Traveler Survey. These groups are likely to be organized as:

- Residents and Community groups
- Employees and business owners/managers/employers

The focus group meetings will allow the URS Team to identify and profile the distinct travel experiences, perceptions, expectations, and preferences of each group. To keep the conversation focused, a script comprised of key questions will be developed in advance of the meeting to focus on specific information. The Team will collect direct feedback from each group on a number of travel issues, including:

- Levels and patterns of transit use and assessment of existing service.
- Key travel origins and destinations within the study corridor.
- Key locations served and underserved or unserved by transit.
- Span of service and service frequencies of transit service.
- Conditions of existing transit stops.
- Walking conditions along routes underserved or unserved by transit.

The URS Team will coordinate with CTDOT to identify and invite potential participants for each focus group. The Team will also draw upon the extensive list of employers developed through the Connecticut Commuter Service program. It is expected that up to four (4) focus group meetings will be held representing different geographic areas within the corridor. It is anticipated that each focus group meeting will last up to two (2) hours. It is anticipated that up to four (4) members of the URS Team will attend each focus group meeting.

### ***Task 7C Corridor Evaluation***

The URS Team will perform a corridor-level analysis that evaluates the potential benefits of rail/transit improvements on corridor competitiveness. The URS Team will perform an analysis of the market development potential within up to two potential travel alignments within the Central Connecticut Rail Corridor. In particular, the URS Team will identify the potential effects that the rail and/or transit investments would likely have upon business competitiveness. What markets will likely be strengthened and what economic development efforts could be supported by new rail/transit service in the corridor? The analysis will include estimates of population, jobs, and commercial growth that are likely to be attracted to this corridor and station locations, versus if no transit improvements are made. This evaluation will also assume that improvements that could be expected to occur on the Waterbury Branch, including those with funding commitments, will be completed.

The analysis will consider demand for housing in areas considered walkable under typical TOD guidelines (½-mile of rail or transit station). This analysis will also consider the impacts that improved accessibility to the Hartford area expected by the Hartford-New Britain Busway and the New Haven-Hartford-Springfield Commuter Rail service may have on business competitiveness in the corridor. Comparative information on the effect of transit service on real estate markets from other similar areas will be considered. This analysis will also draw upon information from the focus group interviews being conducted with employer/business groups/developers.

### ***Task 7D Regional Considerations***

The URS Team will consider the addition of new rail/transit service in the Central Connecticut Corridor not only in terms of local impacts, but also in terms of how this new service will integrate into the regional transportation network. This network includes Metro-North Railroad New Haven Line service from New Haven to New York City; Shore Line East Railroad service from New London to New Haven connecting to Bridgeport, Stamford, and New York City; the Coastal Corridor bus service from Stamford to White Plains, NY; and commute patterns to Hartford, New Haven, Bridgeport, Stamford, Danbury, and New York.

### ***TASK 7E Review Existing Rail Passenger Schedules, Service Patterns, and Infrastructure***

The URS Team will become knowledgeable of existing Waterbury Branch and New Haven-Hartford-Springfield rail infrastructure (track configurations, operating system, equipment storage yards, passenger stations, parking, grade crossings, etc.), passenger service schedules, running times, crew requirements, consists, equipment needs, equipment turns, maintenance requirements, fueling requirements, and storage requirements. Interface with New Haven Line main line operations will also be addressed.

### ***TASK 7F Review Rail Freight Service Schedule and Service Patterns***

The URS Team will become conversant with the freight schedules and service patterns of Pan Am Southern Railway and other freight carriers in the region, Providence and Worcester Railroad Company, Connecticut Southern Railroad Company, Naugatuck Railroad Company, and Central New England Railroad Company as appropriate. The Railroads will be requested to provide estimates of likely changes in the level of service, schedule and service patterns for the planning threshold years of 2020 and 2040. This information will be used as the study progresses to determine if there will be an adverse impact on freight service resulting from analysis conducted for Long List Alternatives and Short List Alternatives.

### ***TASK 7G Review Transit Interface***

#### **Task 7G.1 Local Bus Transit**

The URS Team will become familiar with bus services and maintenance facilities provided by CT Transit and other bus service providers in the corridor and how they interface with the New Britain-Hartford Busway, the proposed New Haven-Hartford-Springfield Rail service, and the existing Waterbury Branch passenger rail service.

#### **Task 7G.2 Paratransit Services**

The URS Team will become familiar with paratransit services and maintenance facilities as it interfaces with fixed bus service and the potential new rail/transit service.

#### **Task 7G.3 Rideshare Services**

The URS Team will interview the staff of Connecticut Commuter Services to determine what private or corporate shuttles may serve the Central Connecticut Corridor. Information shall be obtained on the number of shuttles, what stations are served, the destinations served, the number of riders, their schedules, and how they are funded. One (1) meeting should be assumed.

### ***TASK 7H Review Existing Rail Ridership***

The URS Team will review Metro-North ridership data for the Waterbury Branch, current ridership and historic trends. The URS Team will also review current ridership and historic trends along the New Haven-Hartford-Springfield corridor.

### ***TASK 7I      Review Right-of-Way Boundaries***

The URS Team will review documentation regarding rights-of-way and other real holdings associated with railroad facilities along the potential new rail routes where information is available. Documentation to be reviewed may include railroad valuation maps, right-of-way mapping, station site plans, easement mapping, and other instruments that define, assess, or otherwise document the nature, limit, or extent of property owned by or otherwise under the control of CTDOT associated with branch line operations.

The URS Team will develop a composite base map of current railroad and station right-of-way based on the documents reviewed. If available, CTDOT will provide the right-of-way boundaries electronically.

The base mapping will be developed with a level of accuracy commensurate with the planning nature of this assignment. The base mapping will be developed using State Plane coordinates, and will be developed in a digital format suitable for use in concert with aerial photographs and other digital files prepared for this assignment.

### ***TASK 7J      Review Existing Road Network***

The URS Team shall review the network of state and local roads in the study corridor. Their suitability for local and express bus service will be determined. Existing traffic volumes will be documented based on available CTDOT data. Additionally, up to a total of 30 traffic counts will be conducted. It is anticipated that counts will occur at two to three (2-3) intersections at each of the ten (10) station locations. These traffic counts will be conducted by CTDOT.

### ***Task 7K      Environmental Review and Mapping***

Sufficient environmental data from available resources will be gathered to allow a general review of the existing environmental sensitivity of the study corridor and potential environmental impacts of the alternatives being studied. This effort will include a review of secondary data that is then presented on a GIS base. This review is intended to identify apparent critical environmental constraints along the study corridor.

The URS Team will map the critical environmental constraints of the study corridor. The Team will utilize GIS data to develop constraint maps, which will be used to evaluate natural resources and alternative alignments within the study corridor.

The review will include the following areas:

- Water Resources (Wetlands, Floodplains, Groundwater/Public Water Supplies)
- Threatened and Endangered Species.
- Farmland Soils.
- Cultural Resources
- Land Use/Zoning/Demographics
- Environmental Justice and Title VI



- Noise Sensitive Areas
- Section 4(f) and Section 6(f) Lands
- Air Quality
- Visual Resources

**Deliverables:**

*Environmental Sensitivity Technical Review and Mapping*

***Task 7L Base Mapping/Plan Preparation***

The URS Team will use the latest digital orthographic aerial photographic coverage of the Waterbury Branch (from Bridgeport to Waterbury) and the New Britain-Hartford Busway. The URS Team understands the aerial photography will (a) provide full coverage of the Central Connecticut Corridor, as well as adjacent areas of potential interest; (b) is in a digital format that is ready for use (\*.tif, \*.hmr, or \*.sid file formats); and, (c) has been ortho-rectified and is in conformance to Connecticut State Plane (NAD83) specifications and State Plane coordinates.

The URS Team will compile base mapping for the Central Connecticut Corridor that contains the following information:

- State and City/Town jurisdictional boundaries;
- Names of villages, areas, or hamlets;
- Major watercourses, natural water bodies, and reservoirs;
- Major State roadways and route numbers;
- Named bridges;
- Approximate boundaries of State Parks;
- Prominent, major, or named landforms;
- Rail lines;
- Rail maintenance facilities; and
- Rail storage yards.

Base mapping will depict each rail line in (a) cut-sheet format, allowing the entire length of the corridor to be plotted in a series of 22"x34" at 1"=200' scale, in 11"x17" sheets; and, (b) roll plot format, allowing each corridor to be plotted in long sheets for use as public meeting exhibits (scale(s) to be determined during the course of URS Team activities).

For both base mapping formats described above, sheets will be provided with match lines, north arrows, graphic scales, sheet borders, and title blocks. For orientation purposes, the URS Team will also prepare an index sheet depicting the cut-sheet layout within each of the rail corridors.

The base mapping will be developed with a level of accuracy commensurate with the planning nature of this assignment. The base mapping will be developed using State Plane coordinates and will be developed in a digital format suitable for use in concert with aerial photographs, and other digital files prepared for this assignment.

All mapping and plans prepared for use in this study will be in American (English) units. When making reference to metric scale, for example 1:2500, the closest English scale (1 in = 200 feet) should be referenced in parenthesis.

Consultant will provide topographic for a corridor 1,000 feet in width, specifically, 500 feet measured on each side of the rail/transit right-of-way centerline. This data will be used as needed for developing engineering concepts and as appropriate to illustrate existing conditions and potential impacts from the alternatives.

#### ***Task 7M      Documentation of Existing Conditions***

The URS Team will summarize the analysis of existing conditions in a concise technical memorandum, with supporting graphics for CTDOT review. Upon completion of this review and receipt of comments, the memorandum will be finalized for incorporation into the Draft report.

The URS Team will also present these findings to the SAC at one of their scheduled meetings.

### **TASK 8      ANALYSIS OF FUTURE (NO BUILD) NEEDS AND DEFICIENCIES**

The URS Team will review and analyze the anticipated growth in the study corridor and the travel demand forecast by CTDOT to assist in determining the level of future transportation deficiencies/needs in the study corridor.

#### ***Task 8A      Review Future Land Use Assumptions***

As part of the SAC process, the URS Team will seek input from state and local officials regarding significant land use changes anticipated along the corridor that may affect regional or localized travel demands. The URS Team will review and compare this information with growth inputs to the Connecticut Statewide Travel Demand Model to ensure that the model adequately accounts for changes expected in the study area.

The URS Team will also contact the relevant regional planning agencies. If there are major differences in the modeled assumptions, the URS Team will apprise CTDOT of the difference.

#### ***Task 8B      Forecast of Future Transportation Conditions***

CTDOT will use its statewide travel demand model to produce years 2025 and 2040 average weekday travel model with assignment to corridor links for the study corridor transit and roadway network. This assignment will include “committed only” transportation improvements to the corridor. CTDOT will provide select link analysis superzone trip tables, screenline counts, and URS Team selected groups of traffic analysis zones (TAZ).

CTDOT will estimate and provide to the URS Team years 2025 and 2040 AM and PM (30th highest) peak hour flows for two to three (2-3) intersections at each of the ten (10) station

locations. These intersections will be the same as those where traffic counts are conducted, as discussed in Task 7J.

***Task 8C Review Future (No Build) Peak Hour Networks***

CTDOT will develop years 2025 and 2040 peak hour networks (representing a 30th highest AM and PM condition) for the study area. The URS Team will review these networks for completeness prior to initiating the future condition analyses.

***Task 8D Analysis of Future Operations***

The URS Team will analyze future (2025 and 2040) roadway and transit demand in the study corridors. The location and nature of any deficiencies in the transportation system will be highlighted in tables and graphics.

***Task 8E Define Future Corridor Deficiencies/Needs***

The URS Team will work with CTDOT to define the study corridor transit needs and refine the goals and objectives of this study, in cooperation with the SAC. These needs will be summarized in user-friendly corridor graphics and analysis summary tables.

***Task 8F Documentation of Future (No Build) Conditions***

The URS Team will summarize future (2025 and 2040) no-build market analysis and transportation conditions in a technical memorandum, with supporting graphics for CTDOT review (8 copies). Upon completion of this review and receipt of comments, the memorandum will be finalized for incorporation into the final report.

The URS Team will also present these findings to the SAC at one of their scheduled meetings.

**TASK 9 IDENTIFICATION & EVALUATION OF LONG LIST ALTERNATIVES**

***Task 9A Planning Charrette***

The URS Team will conduct one all day planning charrette with CTDOT staff and representatives of the regional planning agencies to further clarify study area issues and identify a Long List of alternatives for consideration. It is anticipated that a Smart Board, which would be supplied by CTDOT, could be used to facilitate this charrette. This charrette will also include representatives from MNR, Amtrak, Pan Am Southern Railway, and relevant state resource agencies as well as four representatives from the SAC. It is assumed that up to four (4) URS Team members would attend each session.

The URS Team shall prepare a report summarizing the deliberations and findings of the meeting, and this report will be provided to the SAC.

## **Task 9B**      *Identification of Long List Alternatives*

The URS Team will work with CTDOT, in cooperation with SAC, to define existing and future study area transportation needs and the goals and objectives of this study, and review the Purpose and Need statement. . These needs will be summarized in user-friendly corridor graphics and analysis summary tables.

A Long List Alternatives will be developed for analysis. Long List Alternatives may include, but not limited to:

- No Build;
- Enhanced Bus;
- Extension of New Britain-Hartford BRT into Central Connecticut Corridor;
- Light Rail or Streetcar;
- Commuter Rail;
- Transit-Oriented Development strategies; and
- Innovative technologies (TDM/TSM/ITS strategies).

For purposes of this study, it is assumed no additional transportation corridors will be identified other than the Central Connecticut Corridor. Therefore, strategies will be limited to utilizing the existing rail and roadway alignments within this corridor and creating cost-effective improvements targeted toward enhancing the attractiveness of transit and reducing the demand for auto use as a commutation mode.

### **Deliverables**

#### *Long List Technical Memo*

### **Task 9B.1**      **Infrastructure Analysis**

For the rail alignments/alternatives identified, the URS Team will evaluate signal, power, and geometric track modifications. These evaluations will seek to identify the constraints that grades, curvatures, super elevations, clearances, bridges, tunnels, passing sidings, maintenance facilities, layover areas, existing track conditions, at-grade crossings, and other infrastructural elements place on the ability to operate new passenger rail service within this corridor using existing freight rail trackage along Pan Am Southern Railway and other state owned right-of-way where available.

### **Deliverables**

#### *Infrastructure Analysis Technical Memo*

### **Task 9B.2**      **Bus Rapid Transit Analysis**

The URS Team will evaluate the feasibility and cost of a Bus Rapid Transit Operation connecting the Waterbury Branch terminus in Waterbury via Bristol to points along the New Haven-Hartford-Springfield (NHHS) Rail line and/or the New Britain-Hartford Busway (the

Busway). This option could allow for bi-directional bus service to either the NHHS or the Busway from the Waterbury Branch.

Areas to be addressed shall include the impacts above and below grade structures, wetlands, watercourses, hazardous/contaminated material sites, cuts, fills, utilities, and at grade crossings with any needed associated street lights. The cost estimate will assume 15-minute peak period bi-directional service and 30-minute off peak bi-directional service.

### **Deliverables**

*Bus Rapid Transit Technical Memo*

### **Task 9B.3 Express Bus Analysis**

The URS Team shall evaluate the feasibility and cost of expanding existing express bus service within the study corridor. The cost estimate will assume 15-minute peak period bi-directional service and 30-minute off peak bi-directional service. The existing transit fleet and associated maintenance facilities previously identified in Task 7 will be examined to determine if the existing bus fleet in the study area can operate the above mentioned service headways or if additional buses will be required.

### **Deliverables**

*Final Express Bus Technical Memo*

### **Task 9B.4 Light Rail Analysis**

The URS Team shall evaluate the feasibility and the cost of an electrified Light Rail System using an overhead power supply connecting the Waterbury Branch to Bristol, as well as to the New Britain Hartford Busway and/or an NHHS connecting point in Berlin. The evaluation will focus on major right-of-way, infrastructure, and operating constraints, use conceptual costs based on similar LRT systems, and be limited to these two potential alignments.

### **Deliverables**

*Light Rail Impact Technical Memo*

### **Task 9B.5 Station Needs and Location Analysis**

The URS Team will examine up to 10 potential rail/transit station locations to identify the optimum locations for maximum ridership and that are the most promising TOD opportunities (further discussed in Task 14). In the context of the corridor-wide market analysis, the Team will evaluate existing market strength and opportunities at each potential station. Market opportunities should reflect current conditions, the unique strengths of each station, and a realistic assessment of future growth. The URS Team will also assess the need for parking at each station location.

Following guidelines developed by New Jersey Transit and CTDOT, the URS Team will calculate “transit scores” for up to 10 potential station locations to help determine optimum

‘transit friendly’ locations along the Central Connecticut Corridor. Specifically, the URS Team will follow the “*Methodology for Developing a Connecticut Based Transit Score and Mapping Procedure*,” as drafted by the CTDOT Travel Demand Modeling Unit in the Department’s Bureau of Policy and Planning. The Team will consult with the CTDOT Travel Demand Modeling Unit and assist in the transit score calculations. A brief report summarizing results with appropriate maps will be prepared.

### **Deliverables**

*Station Analysis Technical Memo*

### **TASK 9C Evaluation (Screen 1) of the Long List Alternatives**

The Long List of Alternatives will be screened (Tier 1 level screening) with a set of evaluation criteria that will identify for elimination from further consideration those alternatives that are fatally flawed. The URS Team will develop the Tier 1 Screening evaluation criteria that will include, but not be limited to:

- Ability to satisfy the Purpose and Need and future travel demand;
- Market Analysis Documentation;
- Traveler Surveys Documentation;
- Ease / Feasibility of implementation;
- Rights of Way Impacts;
- Critical Environmental constraints; and
- Conformance to FTA, FRA, EPA, DEP, and CTDOT requirements and policies.

The final list of Tier 1 Screening evaluation criteria will be reviewed and approved by CTDOT and the SAC. Support and/or rejection for each of the Long List Alternatives will be fully documented. The remaining alternatives, the Short List Alternatives, will include a maximum of five (5) alternatives including: No Build, TSM, and three Build Alternatives.

### **Deliverables**

*Long List Evaluation – Screen 1 Technical Memo*

### **TASK 10 TRAVEL DEMAND FORECAST**

The URS Team will review existing Metro-North ridership data for the Waterbury Branch as well as Amtrak ridership for NHHS and existing bus ridership for the Waterbury, Bristol, and New Britain areas. This analysis will consider ridership of neighboring towns, in addition to those that would have stations for Central Connecticut Rail service. The URS Team will review the most recent New Haven Line/Shore Line East AM Peak Rail Survey data for the Waterbury Branch as well as the projections for the NHHS line. The Team will work with CTDOT’s Office of Systems Modeling and Forecasting to develop ridership forecasts for the Central Connecticut Corridor’s improvement for the Short List Alternatives. These forecasts will be run through the CTDOT model and must meet FTA’s ridership forecasting requirements under the most recent federal guidelines.

The URS Team will meet with CTDOT's Office of Systems Modeling and Forecasting to discuss issues regarding the Statewide Travel Model and the forecasting process as it relates to the Central Connecticut Corridor in order to arrive at an agreement on the process to be used for this study, particularly in the event that the 2010 Journey to Work data has not been incorporated into the Statewide Travel Demand Model in time for the completion of this Study. The URS Team and CTDOT will work together to "fine tune" the model's networks, mode split variables, or other parts that could improve sensitivity.

Once agreement has been reached, the model will be run by CTDOT to produce base ridership forecasts for up to three (3) improvement alternatives for the planning threshold years of 2025 and 2040. These forecasts will be based on the transportation modifications as contained in the Short List Alternatives.

A Draft Ridership Forecasting Summary Report shall be prepared containing the results of this task. A Final Ridership Forecasting Summary Report shall be prepared after CTDOT has provided its comments and approved the final version of the report.

## **TASK 11 DEVELOPMENT OF SHORT LIST ALTERNATIVES**

The URS Team will develop a Short List of alternatives for comparison and a Tier 2 Level Screening.

The Alternatives could include the following:

- 1) No-Build Alternative
- 2) TSM Alternative
- 3) Central CT Rail Alignment #1 and #2
- 4) Central CT Transit Alignment
- 5) Central CT Combined Rail and Transit Alignment

### **Deliverables**

#### *Short List Alternatives Report*

- A Technical Memo using the most recent available digital ortho mapping shall be prepared after CTDOT has provided its comments and approved the final version of the memo. Three (3) printed copies of the memo shall be delivered to CTDOT as well as one electronic copy on a Compact Disk or USB Memory Stick in Microsoft Word and print ready format.

## **TASK 12 DEVELOPMENT OF TIER 2 EVALUATION CRITERIA**

At this stage, Tier 2 Screening criteria that differentiate and compare each of the alternatives in the Short List Alternatives will be applied. The URS Team will work with CTDOT to determine the appropriate additional forecasting, if any, which may be required under the various alternatives. With the cooperation of the SAC, the URS Team will apply the same set of evaluation criteria in assessing each of the Short List Alternatives identified.

The criteria shall include:

- Conceptual capital cost estimates (a methodology shall be developed);
- Travel times;
- Ridership forecasts, utilizing the Statewide Travel Model, as modified, will be developed;
- Operating cost impacts;
- Property impacts; and
- Environmental sensitivity

### **Deliverables**

#### *Tier 2 Screening Evaluation Criteria Report*

- A Technical Memo using 2004 digital ortho mapping shall be prepared after CTDOT has provided its comments and approved the final version of the memo. Three (3) printed copies of the memo shall be delivered to CTDOT as well as one electronic copy on a Compact Disk or USB Memory stick in Microsoft Word format and print ready format.

### **TASK 13 REFINEMENT OF SHORT LIST ALTERNATIVES**

The URS Team will screen the potential overall effectiveness of the Short List Alternative strategies for the corridor versus expected impacts to determine the feasibility of implementation and the potential to satisfy the Purpose and Need and achieve the study goals and objectives, using the criteria developed in Task 12. This task will also begin to identify the combination of individual, potentially complementary options, for alternative packaging. A matrix evaluation is envisioned for this process.

### **Deliverables**

#### *Refined Short List Alternatives Screening Report*

- A Technical Memo will be prepared after CTDOT has provided its comments and approved the final version of the memo. Three (3) printed copies of the memo shall be delivered to CTDOT as well as one electronic copy on Compact Disk or USB Memory Stick in Microsoft Word format and print ready format.

### **TASK 14 IDENTIFY TRANSIT-ORIENTED DEVELOPMENT OPTIONS**

The URS Team will evaluate opportunities for the reuse or repurposing of existing property for its TOD potential at each station location. The URS Team will review and summarize existing planning studies and other activities for any of the potential station locations that may have been performed during the past five years. The URS Team will identify existing businesses and housing (particularly environmental justice residents) that could be displaced by TOD, and review existing zoning maps to determine if new zoning regulations would be required to facilitate TOD.

The Team will identify how the real estate market around each potential station may evolve over time and also identify potential barriers to TOD and land use/zoning conflicts.



## **TASK 15 EVALUATION OF SHORT LIST ALTERNATIVES**

### ***Task 15A Capital and Operating Costs and Ridership***

Each Alternative for the Short List will be evaluated for their ability to satisfy the Purpose and Need, using the following criteria. The emphasis will be on those criteria that allow for comparison of each of the Short Listed Alternatives to each other.

Capital Cost Estimates - Rail and/or bus infrastructure.

Rail Running Time - The estimate running time shall be quantified for the new rail service on each alignment identified.

Ridership Forecasts - Utilizing the Statewide Travel Model, ridership forecasts will be developed for the new rail service and bus options.

Rail and Bus Operating Costs – Develop the estimated operating cost of the new rail service for each alignment carried forward, as well as any potential bus/transit service including:

- Bus Rapid Transit and Express Bus Service vs. diesel or electrical rail service;
- Added maintenance cost of new rail service;
- Maintenance cost of bus rapid transit service vs. express bus service; and
- Impact on shops and yards for rail and bus service.

### ***Task 15B Review Required Rights-of-Way Boundaries***

Based on the information developed in previous tasks, and field surveys, the URS Team shall identify areas of concern that could result from the construction and operation of new rail service in the Central Connecticut Rail Corridor. This could include track requirements, signaling, construction of new passing sidings, parking facilities, grade crossings, bus rapid transit infrastructure, and new stations. The URS Team will identify areas of concern due to above or below grade structures, existing roadway constraints, utilities, at grade crossings and geological conditions.

### ***Task 15C Review Environmental Sensitivity***

The URS Team will identify critical elements of environmental sensitivity in the corridor and potential environmental impacts of the Short List of Alternatives studied. This effort will include a review of secondary data that is then presented on a GIS base. The assessment will include, but not be limited to the following areas: Land use/zoning; demographics; wetlands; groundwater; floodplains; natural resources/fish and wildlife/endangered species; Historic and archaeological resources, section 4(f) land; Section 6(f) land; scenic roads; hazardous/contaminated sites; prime farmland; air quality; aesthetics/visual setting; noise sensitive areas; utilities; and Environmental Justice.

***Task 15D Candidate Alternatives for Further Consideration***

The analysis of the Short List Alternatives completed under this task will lead to a refined list of Candidate Alternatives for further consideration and more detailed evaluation in a future effort. The Tier 2 level screening of alternatives will be documented in a brief Technical Memorandum for CTDOT and SAC review. Upon completion of this review and receipt of comments, the memorandum will be finalized for incorporation into the Final Report.

***Task 15E Study Draft Report***

A draft report shall be prepared containing the results of Tasks 10 - 16. Eight (8) printed copies of the draft report shall be delivered to CTDOT for review, as well as one electronic copy on a Compact Disk or USB Memory Stick in Microsoft Word format.

Following revisions based upon CTDOT's review, copies of the draft report will be distributed to the SAC for review and comment in accordance with Task 2A.

A Public Informational meeting shall be held as described in Task 3A.

The revised Draft report will be made available for public viewing and comment (e.g. study website, municipal libraries, municipal Town Halls, regional planning organizations" offices, etc...) at least two weeks prior and two weeks following a scheduled Public Information meeting.

***Task 15F Final Report***

A report of the Public Information meeting shall be prepared which summarizes the URS Team's presentation at the meeting and a synopsis of any comments received as a result of the presentations. Eight (8) printed copies of the draft report shall be delivered to CTDOT as well as one (1) electronic copy on Compact Disk or USB Memory Stick in Microsoft Word format.

A draft final report shall be prepared after CTDOT review. The draft final report shall address all comments received from the SAC and public.

After CTDOT has provided its comments and approved the draft final version of the report, the study Final Report will be prepared for publication. Eight (8) printed copies of the Final Report shall be delivered to CTDOT, as well as one electronic copy on a Compact Disk or USB Memory Stick in Microsoft Word format and print ready format.

The Final Report shall be posted on the study website (replacing the Draft Final Report).