Appendix A: PEL Questionnaire

GREATER HARTFORD MOBILITY STUDY

CONNECTICUT DEPARTMENT OF TRANSPORTATION

Purpose

The PEL Questionnaire is a required Federal Highway Administration document to demonstrate how the given PEL process meets Administration requirements pursuant to Title 23 U.S.C. to Title 23 U. S. C. § 168(d)(4). The GHMS PEL Questionnaire was completed at the end of the study with an intention to act as a summary of planning process and study outcomes that will ease the transition from planning to a National Environmental Policy Act (NEPA) analysis for the projects recommended for advancement.

Key Components

The PEL questionnaire provides comprehensive responses to the standard questions focused on the following topics:

1. Study Background
2. Methodology Used
3. Agency Coordination
4. Public Coordination
5. Purpose and Need for the PEL Study
6. Range of Alternatives
7. Planning Assumptions and Analytical Methods
8. Environmental Assessments

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Question 1 - Background

a) Who is the sponsor of the PEL study?

Response: GHMS PEL Study is sponsored by the Connecticut Department of Transportation (CTDOT) and is a collaborative effort between CTDOT, the Capitol Region Council of Governments (CRCOG) and municipalities/towns within the GHMS study area including the City of Hartford and the Town of East Hartford.

b) What is the name of the PEL study document and other identifying project information (e.g. sub-account or STIP numbers, long-range plan, or transportation improvement program years)?

Response: This study is known as the Greater Hartford Mobility Study (GHMS), Connecticut State Project No. 63-716.

c) Who was included on the study team (Name and title of agency representatives, consultants, etc.)?

Response: The study team consists of lead agency CTDOT, with multiple CTDOT departments guiding the study. The consultant team was led by TranSystems Corporation and AECOM along with their subconsultants FHI, WSP, Goody Clancy, and Voices of Women of Color. The following table lists details:

Table 1: CTDOT Designees

Designee Name	Title	Agency
Nilesh Patel, PE	Principal Engineer	CTDOT
Kevin Burnham, PE	Project Manager	CTDOT
Ahmed Kadhim	Project Engineer	CTDOT
Kim Lesay	Bureau Chief, Policy, and Planning	CTDOT
Kevin Carifa	Transportation Planning Director	CTDOT
Lisa Rivers	Administrator, Transit and Ridesharing	CTDOT
Tracy Fogarty	Transportation Principal Engineer, Project Design, Division of Traffic Engineering	CTDOT

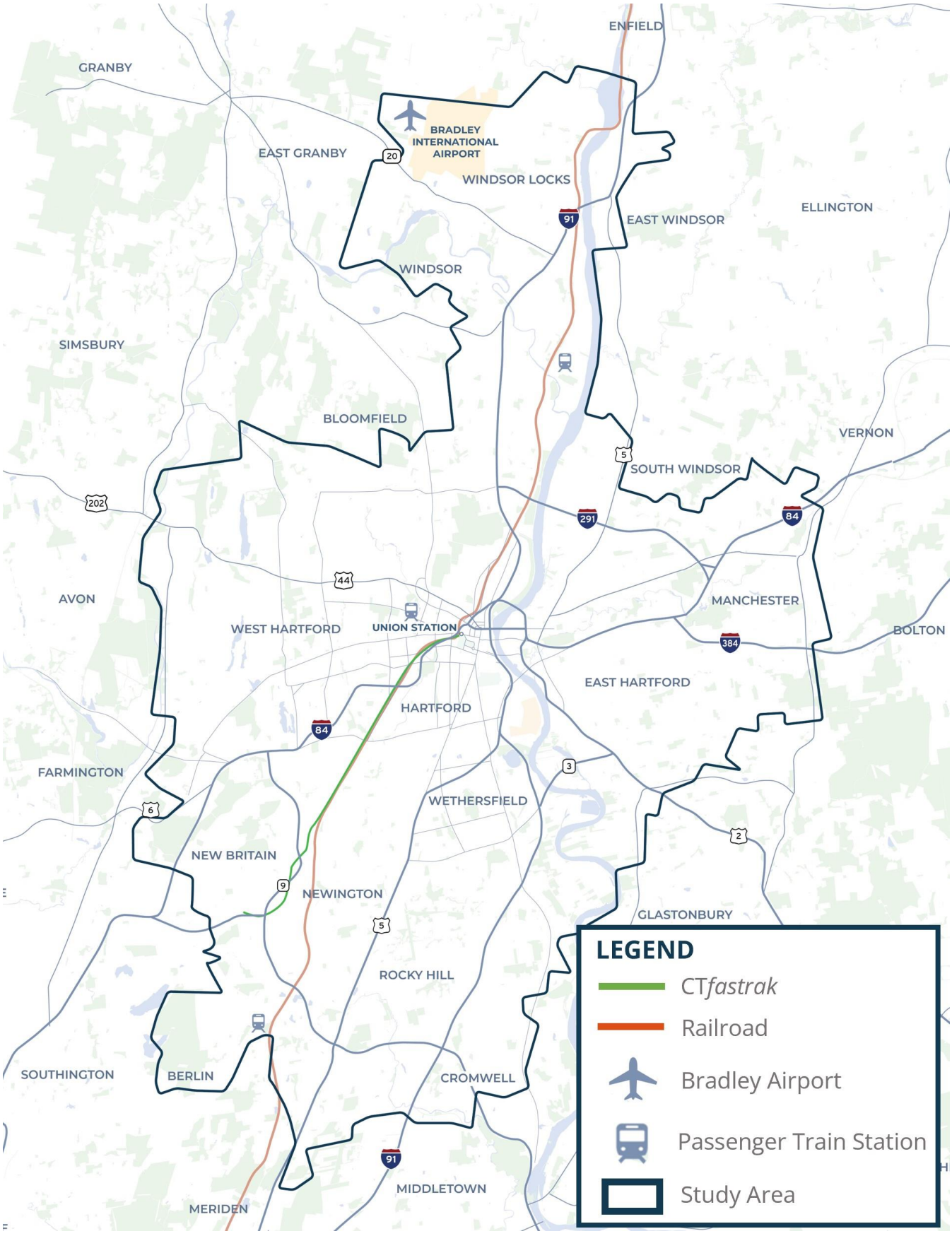
Table 2: Consultant Team

Designee Name	Title	Agency
Casey Hardin, PE	Vice President	AECOM
Mayuresh Khare, PE, AICP, PP	Vice President	AECOM
Gina Trimarco, AICP, LEED	Assistant Vice President	TranSystems Corporation
Michael Morehouse, PE	Vice President	FHI
Martin D. Hull, AICP, CTP	Regional Planning Lead	WSP
David Spillane, FAICP, RIBA	Principal – Planning & Urban Design	Goody Clancy
Janice Fleming	Owner	Voices of Women of Color

d) Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)

Response: GHMS is a sub-regional PEL study focused on improving multimodal mobility in the Greater Hartford Region with urban study core of City of Hartford and East Hartford and sub-urban periphery with residential and commercial mix. The study area for the planning level origin-destination and mobility analysis is shown below in the map. It encompasses the City of Hartford, East Harford, West Hartford, Wethersfield, Newington and portions of Windsor Locks, Windsor, Bloomfield, Farmington, Manchester, Glastonbury, Rocky Hill, South Windsor, Cromwell, Berlin, New Britain municipalities. The study area is served by all modes including auto, bus, rail, bicycle/pedestrian/trail network and aviation.

Figure 1: Study Area and Modes



e) Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

Response: Multiple multimodal planning studies have either been completed or are ongoing in the GHMS study area as shown in the table below. These studies have been summarized GHMS Study Framework Memo in **Appendix B**.

Table 3: Previous Studies Summarized

Previous Studies Summarized
MULTIMODAL
M01 - CRCOG Metropolitan Transportation Plan (MTP)
M02 - I-84 Hartford - Multimodal Station Plan
M03 - CT2030 Plan
M04 - Let's Go CT Plan
TRAFFIC/HIGHWAY/BRIDGE
TH01 - I-84 Hartford Project (Viaduct)
TH02 - I-84 Hartford Capitol Gateway Plan
TH03 - CRCOG I-84 Viaduct Hub Study
TH04 - I-84/I-91 Interchange Study
TH05 - I-84 Corridor Congestion Relief Study
TH06 - Silver Lane Corridor Study
TH07 - CT State Freight Plan
TH08 - CT River Flood Control
TH09 - Other CTDOT Initiates
RAIL
R01 - I-84 Hartford Project - Basis of Design Plans and Track Schematic
R02 - CT State Rail Plan
R03 - Hartford Rail Alternatives Analysis
R04 - New Heaven Line Capacity and Speed Analysis Draft Report
R05 - Efforts to Convert Griffin Line to BRT/LRT
BUS
B01 - CT*fastrak* East
B02 - CRCOG Comprehensive Transit Service Analysis
B03 - GHTD Union Station Master Plan
B04 - NW Corridor Study (All 3 Parts)
B05 - Downtown Hartford Transit Circulation and Through Routing Study
B06 - CRCOG Transportation Safety and Improvement Study - UConn Hartford
B07 - Bradley Airport Master Plan
BIKE/PEDESTRIAN/COMPLETE STREETS
BP01 - City of Hartford Bicycle Master Plan
BP02 - CRCOG Capitol Region Complete Streets Plan
BP03 - Connecticut Active Transportation Plan
BP04 - East Coast Greenway Study
BP05 - Hartford Parking Study

Previous Studies Summarized
ENVIRONMENTAL
E01 - CRCOG Regional POCD
E02 - Capitol Region Green Clearinghouse
E03 - CRCOG Building Corridors of Opportunity - Best Practices
E04 - CRCOG Metro Hartford Future
E05 - CRCOG Metro Hartford Comprehensive Economic Development Strategy
E06 - Capitol Region Natural Hazard Mitigation Plan Update
E07 - Connecticut Riverfront Recapture
E08 - East Harford POCD
E09 - West Harford POCD
E10 - Harford POCD / Hartford 400
E11 - Wethersfield POCD
E12 - Bloomfield POCD
E13 - Windsor POCD
E14 - NEC Future

f) Are there recent, current, or near future planning studies or projects in the vicinity? What is the relationship of this project to those studies/projects?

Response: The following recent, current or near future studies are in the immediate vicinity of the core of the study area and are considered interrelated to holistically understand mobility opportunities in the Greater Hartford region.

I-84 Hartford Study (Viaduct) – a recent study to address aging bridge structures along the 2-mile section of I-84 in Downtown Hartford. The recommendations from this study have been rolled into the GHMS as they relate to mobility, safety and opportunities for reconnecting communities.

I-84/I-91 Interchange Study - a recent study to determine alternatives to relocate the I-84/I-91 interchange, which acts as a bottleneck and a source of major congestion in the study core. Various identified alternatives from this study were rolled into the GHMS for screening against the established criteria to determine which alternative will best serve the region to improve overall mobility.

Hartford Rail Alternatives Analysis - a recent study to address the ongoing serviceability of aging rail infrastructure, to improve local connectivity and regional mobility and support economic development. All these aspects are directly related to the vision and goals of the GHMS.

CT*fastrak* East Expansion Study – a recent study to address demand for full expansion of CT*fastrak* system along high ridership corridors and new markets east of the Connecticut River, which relates with the GHMS focus of creating travel options and enhancing multimodal mobility.

Question 2 - Methodology

a) What was the scope of the PEL study and the reason for completing it?

Response: The scope of the PEL study was to complete data collection and existing conditions analysis to identify mobility deficiencies and/or opportunities and establish needs statement. That led to identifying a universe of alternatives for consideration after screening the alternatives against high-level critical flaw criteria.

The PEL study then focused on conducting detailed analysis of multimodal alternatives for various corridors of significance, screening these alternatives to determine a set of viable alternatives to be included in incremental implementation programs for systemic benefits assessment, establishing and recording PEL findings to help advance appropriate alternatives through applicable environmental review/NEPA process based on funding availability and other decision-making criteria.

The reason for completing the study was to holistically analyze interrelated projects and establish an implementation plan of improvement projects at a systemic level to improve multimodal mobility for the Greater Hartford Region both under the existing conditions and in future design year(s) and to document the decision-making process, thereby linking long-range planning to NEPA and streamlining the overall project development process.

b) Did you use NEPA-like language? Why or why not?

Response: Yes, NEPA-like language was used for consistency and continuity between PEL study phases and to streamline efficient transition of appropriate alternatives/projects into upcoming environmental review phases.

c) What were the actual terms used and how did you define them? (Provide examples or list)

Response: Some examples of the NEPA terms used are outlined below-

1. Needs Statement: A needs statement describes the transportation needs that exist and the problems to be addressed. It serves as a basis for the identification of reasonable alternatives, and overall project development guidance.
2. Alternatives: A range of high-level concepts that were evaluated for feasibility and ability to address identified deficiencies and needs to determine the best option to meet location-specific transportation needs.
3. Environmental Justice: Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.
4. Affected Environment: The affected environment is the area impacted by the proposed alternatives. It includes the area of ecological, cultural, social, aesthetic, and economic resources affected by the alternatives and impacts. The purpose of describing the affected environment is to define the context in which the impacts will occur.
5. Independent Utility: Independent utility is defined by identification of a project/alternative that is a usable and reasonable expenditure resulting in tangible transportation benefits even if no additional transportation improvements are made.
6. Critical Flaws: Critical flaw means an impact or combination of impacts that prohibit an alternative from being built.

7. Public and Agency Involvement: Public and agency involvement refers to the opportunities extended for interested parties to participate in and provide feedback/input to the PEL study with an intent to collect a broad range of information, ideas, and opinions from the public and agencies.

d) How do you see these terms being used in NEPA documents?

Response: The terms used in GHMS PEL Study are consistent with those used in the NEPA process and should be easily incorporated into future NEPA documents. Further, the GHMS PEL Study used a NEPA-like process by involving public and key stakeholders with draft needs statement, development of alternatives, and evaluation criteria. Also, FHWA, FTA and FRA and several other resource/partnering agencies were also involved as identified in the "Agency Coordination" Section of the PEL questionnaire below.

e) What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, the decision was made by state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies.

Response: Virtual listening sessions and meetings with the study team, regional agency partners such as CRCOG, other stakeholders and the public were organized throughout the duration of the study. CTDOT, as the lead agency, was the decision-maker for the GHMS PEL Study and along with its consulting team it established the study framework and the key study milestones. Milestone coordination meetings were organized with the federal resource agencies (FHWA, FTA and FRA) around the four key PEL study milestones: Study Framework, Universe of Alternatives Development, Alternatives Screening and PEL Findings. Bi-weekly progress meetings were also conducted with FHWA throughout the duration of the study. Continuous public coordination occurred through GHMS online portal, study milestone based public listening sessions, stakeholder interviews, pop-up events and public meetings. Community Engagement Plan (**Appendix C** – CEP) and Agency Coordination Plan (**Appendix D** – ACP) respectively provide types and details of public and agency involvement efforts.

f) How should the PEL information be presented in NEPA?

Response: The information produced, and decisions made in the PEL study can serve as a starting point for more detailed, project-specific analyses in NEPA. The Vision, Goals and Needs Statement for the GHMS established as a result of the PEL study will be used for subsequent project specific NEPA documents pertinent to individual projects identified through the study. The PEL does not limit the range of reasonable alternatives that may be considered in NEPA but rather provides recommended alternatives. However, the PEL does recommend eliminating alternatives that are either not aligned with the vision and goals of the study or any alternatives that have been identified to have one or more critical flaws through the PEL process. The recommended alternatives will be considered subsequent in NEPA analyses of GHMS multimodal projects. Future NEPA studies will focus on GHMS projects with independent utility and project limits with logical termini determined through the PEL process. The technical reports produced during the GHMS PEL Study will be incorporated in future NEPA documents as appendices, referenced in the text, included as part of the project record, and serve as part of the history of the decision-making process. The Public Involvement Summary Reports generated from the public and stakeholder outreach activities will provide context for the public's role in the decision-making process and will also be incorporated by reference into future NEPA studies.

Question 3 – Agency Coordination

a) Provide a synopsis of coordination with Federal, tribal, state, and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

Response: In the beginning of the GHMS PEL Study, the study team developed an Agency Coordination Plan (ACP – see **Appendix D**) to determine a strategy for coordination with the public and pertinent agencies.

The purpose of the ACP was to communicate milestones at which CTDOT will coordinate agency participation and to identify formal opportunities for receiving agency input and comments in the Planning and Environmental Linkages (PEL) process. The identified agency partners were grouped into the following three categories:

1. Resource Agency Partners (CTDOT, FHWA, FTA, FRA and USHUD) – these modal agencies and USHUD were selected to provide input during the PEL process related to the study approach, alternatives development, and identification of relevant performance measures to be used to evaluate them. The project team had three (3) meetings with most of these partners at appropriate study milestones to-date to inform progress and seek input. In addition, FHWA, being the lead resource agency for identified highway improvement recommendations, was kept updated on the study progress through regularly scheduled bi-weekly meetings throughout the duration of the study.
2. State and Regional Agency Partners (CRCOG, CTDECD, CTOPM, CTDEEP) - CTDOT collaborated with the state agencies and regional planning organizations to seek input on the goals and outcomes related to economic development, the environment, and regional planning initiatives. In particular, CRCOG, being the regional planning partner, was kept updated on the study progress through regularly scheduled monthly meetings throughout the duration of the study.
3. Other Regional Agency Partners (USEPA, USACE, SHPO, Narragansett Indian Tribe) – these agencies were identified as partners to reach out to mainly related to project specific coordination that will happen when some of the recommended projects will move to the environmental review/NEPA phase.

b) What transportation agencies (e.g., for adjacent jurisdictions) did you coordinate with or were involved during the PEL study?

Response: CRCOG, Municipal Planning Department of involved municipalities, various departments of CTDOT, FHWA, FTA, and FRA.

c) What steps will need to be taken with each agency during NEPA scoping?

Response: Each agency will be provided with a copy of the GHMS PEL Study Report at the conclusion of the study and be requested to provide an acknowledgement letter of their participation through the PEL process. The NEPA scoping would be done in consideration of the recommendation of the GHMS PEL Study. During the NEPA process, agencies would be reengaged in accordance with their regulatory jurisdiction.

Question 4 – Public Coordination

a) Provide a synopsis of coordination efforts with the public and stakeholders.

Response: The study team developed a Community Engagement Plan to determine a strategy for coordination with the public and pertinent stakeholders. The public involvement strategy included utilizing local and social media, online interactive collaboration portal, pop up events, a GHMS website, newsletter and fact sheets, information videos, interviews and correspondence to local officials, study milestone-based public listening sessions and frequent stakeholder outreach as outlined in the CEP (see **Appendix C**) and listed above under Section 2e.

Question 5 – Purpose and Need

Purpose and Need for the PEL Study

a) What was the scope of the PEL study and the reason for completing it?

Response: The scope of the PEL study was to:

1. complete existing conditions analysis to identify mobility deficiencies and/or opportunities.
2. establish needs statement for the seven (7) individual corridors of significance within the GHMS study area that were based on a review of the previously identified needs in the recent relevant studies, public and stakeholder inputs and technical analyses completed as a part of the GHMS existing and future base condition assessments.
3. identify a universe of multimodal alternatives that will help address the identified needs.
4. conduct high-level critical flaws screening and a subsequent detailed screening of all the identified alternatives, eliminate alternatives with critical flaws and recommend appropriate alternatives for the next steps including appropriate environmental review process.

The reason for completing the study was to holistically analyze interrelated projects and establish an implementation plan of improvement projects at a systemic level to improve multimodal mobility for the Greater Hartford Region both under the existing conditions and in future design year(s) and to document the decision-making process, thereby linking long-range planning to NEPA and streamlining the overall project development process.

b) Provide the purpose and needs statement, or the corridor vision and transportation goals and objectives to realize that vision.

Response: The Vision and Goals for the GHMS are listed below.

Vision Statement: The Greater Hartford Mobility Study's Vision is to improve mobility by planning an integrated, resilient, multi-modal transportation system in the Greater Hartford Region thereby enhancing the quality of life, economic vitality, and opportunity in the region.

Goals:

1. Improve the movement of people and goods.
2. Increase transportation options, accessibility, reliability and safety.
3. Accommodate future needs and emerging technologies.

4. Prioritize social equity.
5. Minimize environmental impacts.

Based on the above vision and goals established for the GHMS, the project team identified needs statement for the overall GHMS study area and the seven (7) individual corridors of significance within the study area. These needs statement were based on a review of the previously identified needs in the recent relevant studies, public and stakeholder inputs and technical analyses completed as a part of the GHMS existing and future base condition assessments. The needs statement were established for the following three broad categories:

Needs based on deficiencies in the multimodal **network**: Needs identified under this theme are mostly focused on identifying physical infrastructure deficiencies.

Needs based on deficiencies in the **quality** of user experience: Needs identified under this theme are mostly focused on identifying issues with the quality of service provided to users of the multimodal transportation system.

Needs based on lack of **equity**: Needs identified under this theme are mostly focused on achieving social equity by making active transportation and public transportation options more competitive for local trips to reduce reliance on auto travel.

See **Appendix H** for the Needs Statement and supporting details.

c) What steps will need to be taken during the NEPA process to make this a project-level purpose and needs statement?

Response: The GHMS PEL Study's Needs Statement was a collaborative effort using public, stakeholder and agency input in its development. Detailed data and analyses were conducted for understanding population trends and projections, major traffic generators, historic and future traffic projections, multimodal design, and safety conditions, all of which helped to establish the need for improvements within the GHMS study area. The Needs Statement established in this PEL Study will be used as an overarching framework for identifying individual project-level purpose and needs statement for NEPA review and for validating project-level recommended alternatives during the NEPA decision-making process. The project-level Purpose and Needs Statement for NEPA will be developed in accordance with Appendix A to 23 CFR 450, which details how information, analyses, and products from transportation planning can be incorporated into the project-level NEPA process.

Question 6 – Range of Alternatives

Range of Alternatives - Planning teams need to be cautious during the alternative screen process; alternative screening should focus on purpose and need/corridor vision, critical flaw analysis, and possibly mode selection. This may help minimize problems during discussions with resource agencies. Alternatives that have critical flaws or do not meet the purpose and need/corridor vision will not be considered reasonable alternatives, even if they reduce impacts to a particular resource. Detail the range of alternatives considered, screening criteria, and screening process, including:

a) What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

Response: The Project Team developed a wide range of alternatives spanning across multiple modes (roadway/auto, bus transit, rail, bicycle, pedestrian) and types (capital, service/operational, policy) to establish the universe of alternatives for the study area. Details of these alternatives are included in **Appendix I**.

b) How did you select the screening criteria and screening process?

Response: The Study Team established screening criteria that were aligned with study's vision and goals as well as the identified needs. The team used a tiered-screening approach with the primary screening focus on mobility related criteria such as reliability and travel time improvement, access and connectivity and travel options and user convenience. The second tier of screening criteria were aligned closely with the study goals and included criteria related to promoting equity, enhancing safety, improving infrastructure resiliency and sustainability, minimizing impacts on environment, accommodating future technology, and assessing public/stakeholder support. The final screening tier included overarching aspects aligned with the study vision to include economic opportunity, overall system compatibility and feasibility/complexity. The details of the screening process and findings are included in **Appendix J**.

c) For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s). (During the initial screenings, this generally will focus on critical flaws.)

Response: The identified alternatives were screened through two levels. A high-level critical flaw analysis was conducted to screen those alternatives out that were not meeting one or more of the following screening criteria.

1. Alignment with study's vision and goals
2. Alignment with identified needs
3. Alignment with regional planning vision
4. Alignment with recommendations from relevant previous planning studies (i.e. alternatives already discarded in previous studies)

The following critical flaws were used in the detailed screening process to screen out additional alternatives:

1. Excessive deterioration in travel time or reliability when analyzed at systemic level
2. Excessive deterioration to both access and connectivity aspects
3. Disproportionate impacts on disadvantaged population
4. Excessive VMT increase as an outcome at systemic level
5. Critical impacts on network resiliency
6. Severe and unmitigable impacts on built and/or natural environment
7. Excessive and long-term impacts on economic opportunity
8. Lacking independent utility

d) Which alternatives should be brought forward into NEPA and why?

Response: The study has identified and recommended an implementation plan of over sixty (60) early action, mid-term and long-term multimodal improvement projects for further consideration.

Potential environmental review/NEPA actions (Categorical Exclusion – CatEx, Environmental Assessment/Finding of No Significant Impact – EA/FONSI, and Environmental Impact Statement – EIS) have been identified for each of these projects, which are included in the implementation plan. While many projects are expected to be classified under CatEx review category, the following projects are anticipated to require either EA or EIS review.

1. City Link: East and West Components (I-91 to Route 2 Connection, Lowered I-84, I-84/I-91 Interchange Relocation, Rail Realignment)
2. River Gateway (New River Crossing, Central/Southern Capping, New Whitehead Highway)
3. Founders Gateway (New Mixmaster, Founders Bridge Connection)

4. Connecticut River Rail Bridge
5. CT*fastrak* Expansions

It should be noted that as detailed project scoping is undertaken to advance implementation plan projects, some additional projects may be determined to require EA/EIS review.

The GHMS implementation plan also includes potential timeframe for each of these projects to move into the NEPA review phase based on current funding options and grant opportunities. See the GHMS Implementation Plan (Appendix L) for further details.

e) Did the public, stakeholders, and agencies have an opportunity to comment during this process?

Response: Yes, as described earlier under Sections 3 and 4 of this questionnaire, public, stakeholders and agencies had multiple and ongoing opportunities to provide comments during the PEL study process.

f) Were there unresolved issues with the public, stakeholders, and/or agencies?

Response: There are no specific unresolved issues. Significant public outreach and key milestone agency coordination related to the GHMS study process and recommendations has occurred to date. The Department will continue engagement, particularly related to stakeholders and general public's desire for additional engineering and design information as projects identified in the Implementation Plan advance to the next stage(s) of project development.

Question 7- Assumptions and Analysis

Planning Assumptions and Analytical Methods

a) What is the forecast year used in the PEL study?

Response: 2050 was the forecast year for the GHMS PEL Study.

b) What method was used for forecasting traffic volumes?

Response: The approved 2050 CRCOG Regional Travel Demand Model (TDM) was used for forecasting future traffic volumes for the study.

c) Are the planning assumptions and the corridor vision/purpose and needs statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?

Response: The GHMS PEL Study Needs Statement is consistent with, and in many cases directly supports, the regional vision and goals from the CRCOG's current MTP "Connect 2045". This consistency is aligned with all the following considerations:

1. Safety enhancement
2. Mobility and access improvements
3. Performance-based planning approach
4. Innovative funding opportunities
5. Land use, transportation and economic development nexus
6. System preservation

7. Environmental sensitivity
8. Fiscally constrained planning approach

d) What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?

Response: While GHMS used conventional transportation planning tools such as Travel Demand Models for future condition assessment, it also focused on scenario planning assessment using a GHMS-specific scenario planning tool that was based on federally supported performance-based planning approach. The scenario planning tool was utilized to understand and plan for impacts related to changing transportation trends, user behavior, technological advancements, and policy implications that conventional transportation planning tools are unable to assess.

Question 8 – Environmental Resources

Environmental Resources (wetlands, cultural, etc.) Reviewed. For each resource or group of resources reviewed, provide the following:

a) In the PEL study, at what level of detail was the resource reviewed and what was the method of review?

Response: The GHMS PEL identified and documented baseline environmental and cultural/socioeconomic information in the Existing Conditions Report. A desktop review of resources was conducted using existing datasets, studies, and plans. The presence of following resources was identified and mapped for the GHMS study area.

- Critical habitat
- Protected open space and DEEP property
- Prime farmland soils and soils of statewide importance
- Surface and groundwater resources
- Floodplains
- Wetlands
- Historic, architectural and archaeological resources
- Socioeconomic considerations – zero vehicle households, Environmental Justice and Title VI communities
- Land use and zoning
- Hazardous materials
- Air quality (areas of documented non-compliance)

b) Is this resource present in the area and what is the existing environmental condition for this resource?

Response: The following tables provide an existing condition summary for each of the environmental resources listed above. See Appendix E – Existing Conditions Report: Chapter 7 for maps and additional details:

Table 4: Critical Habitat

Sector	Comments
Study Core	Habitat associated with the Hockanum River adjacent to I-84, Route 2, Route 15; Habitat associated with the Connecticut River between I-91 and I-291.
Northwest Sector	No mapped habitat noted
North Sector	Grassland habitat at Bradley Airport; Habitat associated with Waterworks Brook near Route 20 / I-91; Habitat associated with the Farmington River (Pierson Lane, Mill Brook, Farmington River Mouth) adjacent to the Hartford Line; Habitat associated with the Connecticut River between I-91 and I-291.
Northeast Sector	Habitat associated with the Hockanum River adjacent to the I-84 / I-291 interchange.
Southwest Sector	No mapped habitat noted
South Sector	Habitat associated with Wethersfield Meadows adjacent to the I-91 / Route 3 interchange; Habitat associated with Rocky Hill Meadows adjacent to I-91-Route 3 and the Connecticut Southern (G&W) rail line; Habitat associated with Folly Brook adjacent to I-91.
Southeast Sector	Habitat associated with Glastonbury Meadows and Keeney Cove adjacent to Route 3 between I-91 and Route 2.

Table 5: Protected Open Space and DEEP Property

Sector	Comments	
	DEEP Property	Municipal Property (Representative Sample)
Study Core	Connecticut River Wildlife Management Area (East Hartford).	Keney Park, Riverside Park, Pope Park, Colt Park, Bushnell Park, McAuliffe Park, Martin Park
Northwest Sector	Talcott Mountain State Park, North Branch Park River Flood Control site, South Branch Park River Flood Control sites, Auerfarm State Park Scenic Reserve.	Westmoor Park, Elizabeth Park, Fernridge Park
North Sector	Matianuck Sand Dunes Preserve, Windsor Meadows State Park, Rainbow Dam Fishway.	Washington Park, Northwest Park, Southwest Park, Spring Park
Northeast Sector	Hop River State Park Trail.	Wickham Park, Center Spring Park
Southwest Sector	South Branch Park River Flood Control site.	Ragged Mountain Preserve, Hungerford Park, Willow Brook Park, Martha Hart Park, Walnut Hill Park, Stanley Park
South Sector	Rocky Hill Quarry, Dinosaur State Park.	Mill Woods Park, Candlewyke Park, Maxwell Park, Clem Lemire Sports Complex, Churchill Park
Southeast Sector	Glastonbury Meadows Wildlife Management Area.	Addison Park, Gorman Park, Goodwin Playground Park

Table 6: Prime Farmland Soils and Soils of Statewide Importance

Sector	Comments	
	Prime Farmland Soils	Soil of Statewide Importance
Study Core	Low prevalence	Low prevalence
Northwest Sector	Moderate prevalence	Moderate prevalence
North Sector	High prevalence	High prevalence
Northeast Sector	Moderate prevalence	Moderate prevalence
Southwest Sector	Low prevalence	Low prevalence
South Sector	High prevalence	High prevalence
Southeast Sector	High prevalence	High prevalence

Table 7: Surface Water Resources

Sector	Comments
Study Core	Connecticut River, Hockanum River, Willow Brook, Park River, Keeney Cove, Porter Brook, Pewterpot Brook, Goodwin Brook, Burnham Brook
Northwest Sector	Hartford Reservoir 1,2,3,5,6, Dyke Pond, Hoe Pond, Ely Pond, Mead Pond, Willow Lake, Tumbledown Brook, Wash Brook, Indian Brook, Farmington River
North Sector	Connecticut River, Farmington River, Seymour Hollow, Strawberry Meadows Brook, Hathaway Hollow, Waterworks Brook, Adds Brook, Kettle Brook, Mundy Hollow, Phelps Brook, Goodwin Pond, Mill Brook, Meadow Brook, Deckers Brook, Podunk River, Newberry Brook,
Northeast Sector	Hockanum River, Hockanum River Reservoir, Union Pond, Lydall Brook, Bigelow Brook, Center Springs Pond, Porter Brook, Buckland Pond, Folly Brook, Hop Brook, Salmon Brook, Globe Hollow Reservoir
Southwest Sector	Woodridge Lake, Wood Pond, Batterson Park Pond, Bass Brook, Piper Brook, Trout Brook, Mattabesset River, Hart Pond
South Sector	Wethersfield Cove, Connecticut River, 1860 Reservoir, Goff Brook, Fairlane Brook, Valley Brook, Beaver Brook, Saw Mill Brook, Mattabesset River, Spruce Brook, Chestnut Brook,
Southeast Sector	Connecticut River, Salmon Brook, Porter Brook, Hubbard Brook, Keeney Cove

Table 8: Groundwater Resources

Sector	Comments
Study Core	Primarily GB (not suitable for drinking water) in central core of Hartford, East Hartford / GA outside central city (assumed suitable for drinking water)
Northwest Sector	Primarily GA (assumed suitable for drinking water) / GAA (near wells and tributaries contributing to the Hartford Reservoirs)
North Sector	Primarily GA (assumed suitable for drinking water) / GA-Impaired and GB near Bradley International Airport
Northeast Sector	Primarily GA (assumed suitable for drinking water) / GB (not suitable for drinking water) in central core of Manchester
Southwest Sector	Primarily GA (assumed suitable for drinking water) / GB (not suitable for drinking water) in central core of New Britain and adjacent to Hartford Line
South Sector	Primarily GA (assumed suitable for drinking water)
Southeast Sector	Primarily GA (assumed suitable for drinking water)

Table 9: Floodplains

Sector	Comments
Study Core	Moderate prevalence
Northwest Sector	Low prevalence
North Sector	Moderate prevalence
Northeast Sector	Low prevalence
Southwest Sector	Moderate prevalence
South Sector	Moderate prevalence
Southeast Sector	Low prevalence

Table 10: Wetlands

Sector	Comments
Study Core	Wetland areas adjacent to the Connecticut River, Park River, Hockanum River, Parker River and Pewterpot Brook. Isolated wetlands near Keney Park (Meadow Brook) and Rentschler Field (Willow Brook).
Northwest Sector	Wetland areas adjacent to Route 44 and Route 218 associated with Beman Brook and Wash Brook, North Branch of the Park River, Tumbledown Brook and Hart Meadow Brook.
North Sector	Wetland areas adjacent to I-91 and the Hartford Line associated with the Connecticut River, Farmington River and Mill Brook.
Northeast Sector	Wetland areas adjacent to I-84, I-384, Route 44, Route 6 associated with the Hockanum River, in Buckland Hills associated with Plum Gulley Brook and Farm Brook.
Southwest Sector	Wetland areas adjacent to I-84, Route 9 and the Hartford Line associated with the Dead Wood Swamp, Quinnipiac River, Mill Brook, Piper Brook, and Mattabesset River.
South Sector	Wetland areas adjacent to I-91, Route 9, Route 3 and the Hartford Line associated with the Connecticut River, Mattabesset River, Hatchery Brook and Spruce Brook.
Southeast Sector	Wetland areas adjacent to Route 3 and Route 2 associated with the Connecticut River and Salmon Brook.

Table 11: Historic, Architectural, and Archeological Resources

Sector	Comments
Study Core	High prevalence: over 50 historic districts
Northwest Sector	Low prevalence: less than 5 historic districts
North Sector	Low prevalence: less than 5 historic districts
Northeast Sector	Moderate prevalence: less than 10 historic districts
Southwest Sector	Low prevalence: less than 5 historic districts
South Sector	Moderate prevalence: less than 10 historic districts
Southeast Sector	Moderate prevalence: less than 10 historic districts

Table 12: Zero Vehicle Households

Sector	Comments
Study Core	High prevalence
Northwest Sector	Low prevalence
North Sector	Low prevalence
Northeast Sector	Moderate prevalence
Southwest Sector	High prevalence
South Sector	Low prevalence
Southeast Sector	Low prevalence

Table 13: Minority Population

Sector	Comments
Study Core	High prevalence
Northwest Sector	Moderate prevalence
North Sector	Moderate prevalence
Northeast Sector	Moderate prevalence
Southwest Sector	High prevalence
South Sector	Low prevalence
Southeast Sector	Low prevalence

Table 14: Low Income Population

Sector	Comments
Study Core	High prevalence
Northwest Sector	Low prevalence
North Sector	Low prevalence
Northeast Sector	Moderate prevalence
Southwest Sector	High prevalence
South Sector	Low prevalence
Southeast Sector	Low prevalence

Table 15: Population with Limited English Proficiency

Sector	Comments
Study Core	High prevalence
Northwest Sector	High prevalence
North Sector	Moderate prevalence
Northeast Sector	High prevalence
Southwest Sector	High prevalence
South Sector	High prevalence
Southeast Sector	Moderate prevalence

Table 16: Predominant Land Uses

Sector	Comments
Study Core	Institutional, commercial, and recreational uses
Northwest Sector	Institutional, industrial, commercial, and mixed-use
North Sector	Institutional, industrial, commercial, and agricultural uses
Northeast Sector	Industrial, institutional, and commercial uses
Southwest Sector	Institutional, industrial, and commercial uses
South Sector	Institutional, commercial, and industrial
Southeast Sector	Institutional, agricultural, and industrial uses

Table 17: Zoning

Sector	Comments
Study Core	The city of Hartford has specific Transit-Oriented Development (TOD) zoning.
Northwest Sector	No communities with TOD-specific zoning.
North Sector	The town of Windsor allows increased residential density and building height in the redevelopment area of Windsor Center. In Windsor Locks, the Main Street Overlay Zone includes provisions to "take maximum advantage of the potential relocation of the Windsor Locks Train Station to its proper location back in the historic downtown setting and providing appropriate transit-oriented development land use and densities."
Northeast Sector	The town of Manchester provides density incentives in its Comprehensive Urban Development Zone and General Business Zone for areas within one-half mile of mass transit.
Southwest Sector	No communities with TOD-specific zoning.
South Sector	The town of Newington has a TOD Overlay District.
Southeast Sector	The City of New Britain has a specific Incentive Housing Zone / Transit-Oriented Design District.

Table 18: Hazardous Materials

Sector	Comments
Study Core	Hartford: 621 total sites/489 USTs/0 CERCLIS sites/0 ELUR sites/130 other sites; East Hartford: 267 total sites/185 USTs/1 CERCLIS site/0 ELUR sites/81 other sites; West Hartford: 530 total sites/471 USTs/4 CERCLIS sites/1 ELUR site/54 other sites.
Northwest Sector	West Hartford: 530 total sites/471 USTs/4 CERCLIS sites/1 ELUR site/54 other sites; Bloomfield: 175 total sites/120 USTs/1 CERCLIS site/1 ELUR site/53 other sites; Farmington: 160 total sites/117 USTs/21 CERCLIS sites/1 ELUR site/21 other sites; Avon: 77 total sites/53 USTs/1 CERCLIS sites/0 ELUR sites/23 other sites.
North Sector	Windsor: 179 total sites/102 USTs/1 CERCLIS site/0 ELUR sites/76 other sites; Windsor Locks: 98 total sites/68 USTs/0 CERCLIS sites/0 ELUR sites/30 other sites; South Windsor: 132 total sites/79 USTs/3 CERCLIS sites/1 ELUR site/49 other sites; East Windsor: 87 total sites/61 USTs/5 CERCLIS sites/0 ELUR sites/21 other sites.
Northeast Sector	South Windsor: 132 total sites/79 USTs/3 CERCLIS sites/1 ELUR site/49 other sites; Manchester: 262 total sites/175 USTs/8 CERCLIS sites/1 ELUR site/78 other sites; Glastonbury: 115 total sites/75 USTs/3 CERCLIS sites/0 ELUR sites/37 other sites.
Southwest Sector	West Hartford: 530 total sites/471 USTs/4 CERCLIS sites/1 ELUR site/54 other sites; New Britain: 251 total sites/167 USTs/1 CERCLIS site/2 ELUR sites/81 other sites; Farmington: 160 total sites/117 USTs/21 CERCLIS sites/1 ELUR site/21 other sites; Newington: 179 total sites/127 USTs/3 CERCLIS sites/2 ELUR sites/47 other sites.
South Sector	Wethersfield: 93 total sites/72 USTs/0 CERCLIS sites/0 ELUR sites/21 other sites; Newington: 179 total sites/127 USTs/3 CERCLIS sites/2 ELUR sites/47 other sites; Rocky Hill: 83 total sites/54 USTs/5 CERCLIS sites/0 ELUR sites/24 other sites; Cromwell: 84 total sites/57 USTs/0 CERCLIS sites/0 ELUR sites/27 other sites.
Southeast Sector	Glastonbury: 115 total sites/75 USTs/3 CERCLIS sites/0 ELUR sites/37 other sites.

Table 19: Major Stationary Sources of Air Pollution

Sector	Comments
Study Core	Capitol District Energy Center Cogeneration Associates, Capitol Avenue, Hartford; Metropolitan District Commission Incinerator, Brainard Road, Hartford; Materials Innovation and recycling Authority Resource Recovery Facility and South Meadow Station Energy Facility, Reserve Road, Hartford; Pratt & Whitney, Main Street, East Hartford.
Northwest Sector	None.
North Sector	Algonquin Power Energy Facility, Canal Bank Road, Windsor Locks; HSC/UTC, Hamilton Road, Windsor Locks.
Northeast Sector	Manchester Landfill, Landfill Way, Manchester.
Southwest Sector	None.
South Sector	Algonquin Gas Compressor Station, Shunpike Road, Cromwell; Mattabassett District Water Pollution Control Facility, Main Street, Cromwell.
Southeast Sector	None.

c) What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?

Response: This is a regional PEL study with over sixty (60) different multimodal improvement projects identified for the region. The need and timeline for advancing each of these projects into environmental review/NEPA process may vary significantly based on funding availability and other relevant factors. As such detailed environmental resource impact and mitigation assessments related to each of the identified projects were not completed as a part of this PEL study because these assessments may become outdated and will need to be redone in the NEPA process. However, each individual improvement project was screened with a high-level environmental screening criterion to determine anticipated level of impacts associated with the project at this conceptual planning level stage.

d) How will the planning data provided need to be supplemented during NEPA?

Response: The environmental data analyzed at the regional level will serve as a starting point for NEPA analysis but will need to be assessed at a greater level of specificity for project-level alternatives, once established logical termini are confirmed for each of these projects in the NEPA scoping phase and these alternatives are sufficiently designed to complete impacts and mitigations assessment.

Question 9 – Excluded Environmental Resources

List environmental resources you are aware of that were not reviewed in the PEL study and why. Indicate whether or not they will need to be reviewed in NEPA and explain why.

Response: The list of resources reviewed in the PEL study at a regional level is comprehensive and is consistent with resources typically considered in a NEPA analysis. The level of analysis details would be greater and project-specific in a NEPA study for all the resources assessed in the PEL study. Resources which would specifically receive significantly more detailed analysis in NEPA are listed below:

1. Air Quality / Area Emissions
2. Noise Analysis

Question 10 – Cumulative Impacts

Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where the analysis can be found.

Response: Cumulative impacts were not considered in the GHMS PEL Study. The design and project details necessary to adequately assess cumulative impacts of proposed alternatives were not available at the PEL-level of analysis and will be appropriately studied during the NEPA process, as and when these individual projects are advanced to the environmental review/NEPA phase based on the GHMS Implementation Plan recommendations and funding availability. The scenario planning analysis did evaluate mobile emissions on a programmatic level to assess the combined effects.

Question 11 – Mitigation Strategies

Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

Response: As discussed under Question 8.c, project specific impact assessments and mitigation strategies were not included in the GHMS PEL study for individual projects as this is a regional PEL study with nearly sixty-five (65) multimodal improvement projects recommendations included in the GHMS implementation plan. The need and timeline for advancing each of these projects into environmental review/NEPA process may vary significantly based on the anticipated implementation timeframe, funding availability and other relevant factors. As such, impacts assessments and mitigation strategies, if completed in the PEL study phase, may become outdated and may require to be redone in the NEPA process.

Question 12 – PEL Study Availability

What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?

Response: The NEPA document(s) will be informed by a full spectrum of planning decisions derived from the PEL process. The GHMS PEL Study Report and all supporting PEL decision documents will be incorporated into the NEPA process by reference and become part of the administrative record and history of the decision-making process. Further, the GHMS PEL Study Report, including associated technical reports, will be integrated into the NEPA process, and made available to the public, agency team members, stakeholders, and agencies that were involved during the GHMS PEL Study. Additionally, the GHMS PEL Study Report will be available on the study website.

Question 13 – Other

Are there any other issues a future project team should be aware of?

Examples: Controversy, utility problems, access or ROW issues, encroachments into ROW, problematic landowners and/or groups, contact information for stakeholders, special or unique resources in the area, etc.

Response: Any future project team(s) should be aware of the following considerations:

- Ongoing regional coordination is essential to advance improvements identified in the GHMS Implementation Plan to the next stages of project development. Due to the regional footprint of the recommendations, CTDOT will need to partner with local municipalities and regional project sponsors (such as CRCOG) to implement the systemic improvements envisioned by the GHMS. It is also important to continue coordination with other stakeholders and special interest groups such as active transportation advocacy groups, to realize a unified vision for improved mobility, placemaking and economic growth for the Greater Hartford region.
- Coordination with multiple federal agencies is an important aspect as multiple projects/programs identified in the GHMS implementation plan involve more than a single mode of transportation. It is important to identify appropriate lead federal agency and supporting federal agencies for the NEPA phase.

- **Engineering design** of major projects and associated impacts have been key interest/concern areas for general public and stakeholders, especially highlighting the following aspects:
    - **Limits and locations of proposed capping for I-84 and I-91** – where will capping happen? Will the capped areas be developable? What type of development is anticipated for the capped areas?
    - **Required property acquisitions and/or relocations**, especially related to the proposed railroad relocation and interchange relocation elements.
    - **Maintenance of traffic and mobility** through construction phases of major projects
- **Funding opportunities** – GHMS has proposed a major regional multimodal transportation improvements program. The implementation of this program is dependent on identifying variety of conventional and discretionary funding sources. As such tracking and pursuing appropriate current and new federal grants and earmarks is of critical importance.