
Request for Proposals 12PSX0323

Procurement, Installation, and Integration of a Bus Intelligent Transportation System (ITS) for the Connecticut Department of Transportation

State of Connecticut
Department of Administrative Services

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TABLE OF CONTENTS

1.	OVERVIEW _____	4
2.	SCOPE OF SERVICES _____	9
3.	PRODUCT AND/OR SERVICE SPECIFICATIONS _____	19
4.	PROPOSAL REQUIREMENTS _____	32
5.	SPECIAL PROVISIONS _____	37
6.	SELECTION CRITERIA _____	44
7.	INSTRUCTIONS TO PROPOSERS _____	49
8.	SUBMITTAL REQUIREMENTS _____	51
9.	CONTRACT _____	54

EXHIBITS:

- A. Technical Specifications
- B. Drawings
- C. Price Proposal Template
- D. Technical Compliance Matrices
- E. Federal Requirements
- F. Wage Rates
- G. CT Enterprise Architecture (CCTEA-TA)
- H. Additional Background Information

Pursuant to the provision of Section 4a-57 of the General Statutes of Connecticut as amended, proposals will be received by Procurement Services for the State of Connecticut, at the direction provided in this Request for Proposals (RFP) for furnishing the commodities and/or services herein listed.

The State of Connecticut Department of Administrative Services (the State) welcomes the opportunity to work with our customers and suppliers to provide the Procurement, Installation, and Integration of a Bus Intelligent Transportation System (ITS) for the Connecticut Department of Transportation.

Request for Proposals

1. Overview

1.1. Project Background

The role of the Department of Administrative Services (the “State”) is to manage the procurement process and any administer any subsequent awarded contract. The day to day operations of the Contract will be conducted by the Department of Transportation (CTDOT or the “Department”) and the Connecticut Transit Authority (CTTRANSIT).

The State’s overall goal of this procurement is to provide a comprehensive Intelligent Transportation Systems (ITS) and communications systems that will support the Department’s efforts to implement and operate a reliable and efficient Bus Rapid Transit (BRT) service along the New Britain-Hartford corridor. ITS will play an important role in ensuring the reliability and efficiency of these BRT services as well as supporting the data and communications infrastructure that will enable the provision of accurate real-time transit information to the system’s customers and operators.

The New Britain-Hartford Busway (CT**fastrak**) was first proposed as part of a major investment study in the I-84 corridor, completed in the late 1990s. Several modes were looked at to reduce traffic congestion and improve transportation services including roadway expansion, light rail, commuter rail and high occupancy vehicle lanes, in addition to CT**fastrak**. CT**fastrak** was selected as the locally preferred alternative because of its relatively high ridership and relatively low operating and capital costs compared to the other alternatives. CT**fastrak** also provided a number of unique service advantages over other transit options including more frequent service, the ability to provide service to locations not directly on CT**fastrak**, flexibility to change routes when necessary, and the ability to operate local and express services along the same right-of-way.

CT**fastrak** will be a 9.4 mile long bus-only roadway running from Main Street in downtown New Britain to Asylum Street in downtown Hartford. CT**fastrak** will be built along the former New Britain Secondary railroad between New Britain and Newington Junction and beside the active Amtrak Springfield to New Haven Line from Newington Junction to Union Station in Hartford. Most of the roadway is two (2) lanes wide, with three (3) or four (4) lane sections at stations to enable buses to pass each other. Although most of CT**fastrak** will be grade-separated, at-grade intersections will be located at Stanley Street (New Britain), East Main Street (New Britain), Smalley Street (New Britain), Oakwood Avenue (West Hartford) and Hamilton Street (Hartford). These crossings will be protected by traffic signals. The traffic signals at the intersections of CT**fastrak** with Oakwood and Hamilton will also be interconnected with the adjacent railroad grade crossing signals.

CT**fastrak** will include eleven (11) stations. New Britain Station at the southwestern end of CT**fastrak** will have a larger multiple berth transit center due to its location at the hub of New Britain local services. Union Station at the northeastern end of CT**fastrak** in Hartford will include an on-street shelter. The nine (9) through-stations will have two (2) platforms of approximately 10’ by 100’. The northbound platforms at stations along the Amtrak rail line will only be accessible by crosswalks from the southbound platform. Small park-and-ride lots will be included at East Street, Cedar Street, Newington Junction, Elmwood, Flatbush Avenue, and Parkville. Buses will be able to enter CT**fastrak** at New Britain Station, East Main Street Station, East Street Station, Cedar Street Station, Newington Junction Station, at the Oakwood Avenue/CT**fastrak** intersection, and at Sigourney Street Station.

Based upon the current draft service plan, a total of thirty-seven (37) buses will be used in regular service on the CT **fastrak** guideway, including a combination of new buses and buses from the existing fleet. Allowing an additional twenty (20) percent for spare vehicles increases the total number of vehicles required to forty-five (45). New 60-foot articulated BRT buses will be used for the main CT **fastrak** local services, new and existing 40-foot low floor transit buses will be used for CT **fastrak** local services that access CT **fastrak** at Oakwood, and new 35-foot low floor transit buses will be used for the Central Connecticut State University (CCSU) shuttle. Express services from Waterbury and Southington will use existing 45-foot coaches. Additionally, other buses in the CTTTRANSIT Hartford and New Britain divisions will serve stations on CT **fastrak** but will not be using the guideway itself. New routes will service the Hospital Shuttle (originating at the Sigourney Street Station), the Newington Shuttle between New Britain Downtown Station and Newington Junction Station via local streets, and the Bishops Corners Shuttle (originating at the Flatbush Station), all using 30-foot buses. The regular local bus services in the region will also serve certain CT **fastrak** stations, but again will not be using the CT **fastrak** guideway.

The following table summarizes the number of new and existing vehicles, as well as the spares, required for each vehicle type that will be operating on the CT **fastrak** guideway. These vehicles are included in the scope of the initial phase of the ITS procurement.

Table 1: Vehicles Required for CT **fastrak** Service

Bus Make / Model	Description	New (for service)	Existing (for service)	New (spares)	Total
	Articulated BRT	14		3	17
New Flyer model D40LF	40' low floor	8	4	2	14
	35' low floor	2		1	3
Mixed	45' coach		9	2	11
Total		24	13	8	45

Bus service on CT **fastrak** will potentially be operated by multiple organizations depending upon the outcome of any necessary competitive procurements of service and any determinations of services that can continue to be operated by their historical operators. Based upon the current array of contract operators, the organizations would include CTTTRANSIT Hartford service through HNS Management Co., Inc., CTTTRANSIT New Britain service through both New Britain Transportation and DATTCO, CCSU service by an operator to be determined, and possibly other contract operators for new transit services in the future. All transit vehicles that will eventually operate a portion of their trip on CT **fastrak** will be dispatched by operations staff located in the Busway Operations Center (BOC). The BOC is planned to be located at the CTTTRANSIT facility located at 100 Liebert Road in Hartford. The bus service contractors detailed above will be responsible for maintaining the equipment installed on CT **fastrak** transit vehicles as they are now for providing day-to-day maintenance on their fleet of state-owned or state-sponsored buses.

CT **fastrak** will be supervised and maintained by a total of approximately thirty (30) vehicles of different types (also called non-revenue vehicles). These would include fifteen (15) existing supervisory and administrative vehicles (hybrid Ford Escapes or similar) and up to five (5) additional supervisory vehicles by the time CT **fastrak** is implemented. It is estimated that another ten (10) maintenance vehicles, including snow plows of various types, will also be used to maintain CT **fastrak**.

A map of the overall Ct**fastrak** route is provided in Drawing No. INX-01 (See Exhibit B). This Figure shows the proposed alignment, as well as the division of the construction of CT **fastrak** into five (5) major construction contracts.

Since any bus in the CTTRANSIT fleet can use CT**fastrak**, and since reliable information and reliable bus connections are important to overall customer usage and satisfaction, other buses in the CTTRANSIT fleet will need to be equipped similarly to the “core” 45 buses described above. Therefore, a provision for optional additional equipment has been made part of this Request for Proposals. Additional CAD/AVL equipment will be offered as optional equipment, and assuming that CTDOT uses the equipment standards of this project as the standard for the remainder of the state-owned fleet, procurement of additional on-board or off-board units of ITS equipment shall also be offered as options as will be described later in this document.

Additional relevant background information on the CT**fastrak** project can be found in the following documents, available in Exhibit I.

- Draft New Britain - Hartford Busway Service Plan (August 13, 2009)
- Draft New Britain - Hartford Busway Operations Plan (August 26, 2009)
- New Britain - Hartford Busway ITS Concept of Operations – Revised Final Report (October 28, 2010)
- Functional Requirements for the New Britain - Hartford Busway ITS & Communications Systems (October 2011)
- P-25 Radio System Documentation

1.2. Overview of System Components

The ITS and Communications Systems for CT**fastrak** includes:

- **Central Systems:** Central Systems hardware shall include workstations, servers, racks, communications hardware, video display equipment, a Network Video Recorder (NVR), and data storage hardware located at the BOC. Central Systems software shall include Computer-Aided Dispatch/Automatic Vehicle Location (CAD/AVL) Central Software, AVA (Automatic Voice Annunciation) Software, APC (Automatic Passenger Counters) Management Software, Traveler Information Software, ~~Fare Management Central Software~~, CCTV (Closed Circuit Television) Camera Management Software, Emergency Call Box (ECB) Central Software, and a Network Management System. Central systems software shall be integrated as described in the specifications. The Central Systems' CAD/AVL software will be integrated by the Contractor with CTTRANSIT's existing scheduling software. All agencies operating transit vehicles operating on the CT**fastrak** guideway will utilize instances of the same existing scheduling software (Trapeze FX – Version 11). The Contractor shall also install a workstation at the New Britain Station building to provide remote access to BOC systems.
- ~~**Automatic Fare Collection (AFC):** Includes Ticket Vending Machines (TVMs) and Ticket Validators located at every station along the CT**fastrak** guideway. In order to serve passenger demand and provide redundancy, at most stations at least two TVMs will be installed and at least one validator will be installed per platform. Also includes a small quantity of Mobile Enforcement Devices (MEDs) to support ticket enforcement personnel in the field. Fareboxes for CT**fastrak** transit vehicles will be procured separately by CTTRANSIT. The fare collection system will be managed through the Fare Management Central Software (part of the Central Systems), which will monitor equipment status data and manage relevant information. Credit and debit card processing will be handled by other systems, to be determined by the Department as part of a separate effort.~~
- **Traveler Information Systems:** Includes Variable Message Signs (VMS) and Public Address (PA) systems installed on each station platform. These VMS and PA systems shall be coordinated and controlled from the BOC. VMS and PA systems shall also be capable of being controlled locally at the station during an emergency or if communications to the BOC is temporarily lost. The central Traveler Information Software (part of the Central Systems) will be

interfaced by the Contractor with the CAD/AVL Central Software (also part of the Central Systems) to provide real-time bus arrival prediction information to the VMS and PA systems at the stations.

- **On-board Technology:** Includes Mobile Data Computers (MDCs), with built-in Mobile Data Terminals (MDTs), Vehicle Logic Units (VLUs) and GPS receivers, installed on all CT **fastrak** transit vehicles. Also includes Automatic Passenger Counters (APC). The APC Management Software will be integrated by the Contractor with the CAD/AVL Central Software (both part of the Central Systems). Also includes on-board Automatic Voice Annunciation (AVA) controller and an interior Variable Message Sign (VMS). The AVA controller and the interior VMS shall be integrated with the MDC and the vehicle's existing PA system. Additionally, to facilitate communications to transit vehicles, a Mobile Communications Gateway and Router (MCGR) will also be installed on all CT **fastrak** transit vehicles. Other on-board technologies, such as on-board passenger displays, , Automatic Voice Annunciation Systems (AVAS), On-board Video Monitoring (OVM), silent alarms, and fuel and maintenance management systems will not be provided as part of this project. Equipment installed as part of this project will be integrated by the Contractor with existing on-board technologies. Equipment installed as part of this project shall not preclude installation and integration with future on-board technologies. In addition, the Contractor will coordinate with CTTRANSIT with regards to its larger system-wide efforts. is in the process of procuring a system-wide CAD/AVL system as part of a separate effort. The CAD/AVL system procured for CT **fastrak** shall not preclude integration with CTTRANSIT's future system-wide CAD/AVL system. Refer to Section 3.2 of the General Provisions for more information. On-board technology also includes On-board Processing Devices and Antennas for a limited number of non-revenue (supervisor, administrative, and maintenance) vehicles.
- **Safety and Security Systems:** Includes CCTV cameras to monitor: the platforms, the Ticket Vending Machines, and provide some coverage of station plazas and pedestrian pathways. CCTV cameras will also be placed at strategic operational locations along the CT **fastrak** guideway in between stations to improve situational awareness for the dispatchers at the BOC. The video from these cameras will be transmitted to the BOC for viewing and recording. The video management and recording software will be included as part of the Central Systems. Emergency Call Boxes (ECBs) will also be installed at each station.
- **Communications System:** A fiber optic cable-based communications infrastructure will support the initial ITS deployment at stations and along the CT **fastrak** guideway and provide capacity to support future ITS deployments. Fleet and vehicle voice communications will be handled by an upgraded radio communications system that will be deployed as part of a separate statewide effort by the Connecticut State Police. Fleet and vehicle data communications will be handled primarily by a cell data communications system, with unlimited cell data plans to be provided by the Department. A bulk data communications system will also be deployed to support the exchange of information when transit vehicles are in proximity to future high-speed wireless network infrastructure installed at certain CTTRANSIT facilities.

The fiber optic communications system along the CT **fastrak** guideway will provide a secure, high speed and reliable platform for transmission of voice, data and video to support monitoring and management of the bus operations and security functions at stations. This communications system shall include a dedicated fiber optic backbone installed along the length of the CT **fastrak** guideway connecting to stations, intersections and stand-alone cameras. The fiber optic backbone will also extend from the northern terminus of the guideway to the BOC located at the CTTRANSIT facility in Hartford.

The fiber-optic communications system includes communications hubs (consisting primarily of Ethernet switches and fiber network devices) at each of the stations, with two hubs located at the East Main station (due to the physical separation of its platforms). A communications hub is a connection point on the communications network from where system data can be redistributed. The fiber optic backbone will interconnect each of the communications hubs. Communications cabling will be utilized to connect the communications hubs to the ITS field equipment at each station. Other communications hubs are located at the BOC and CCTV

locations along the guideway. The communications network architecture will utilize Ethernet (IP) technology for backbone and distribution to provide a flexible, expandable, resilient, and reliable network for both initial and future ITS requirements. Station and platform ITS components, security/surveillance cameras, and other equipment will connect to the network using standard Ethernet/IP interfaces.

The bulk data communications system and the cell data communications system will facilitate data communications between the central system and vehicles. The bulk data communications system will support the exchange of information when transit vehicles are in proximity to high-speed wireless network infrastructure installed at designated CTTRANSIT facilities. The cell data communications system will support the exchange of information in real-time and when buses are outside the range of high-speed wireless network equipment at CTTRANSIT facilities.

The components of the CT **fastrak** ITS and Communications Systems to be furnished under this contract are described in greater detail in the Technical Specifications document.

- No previous RFPs have been issued for this project
- The anticipated funding breakdown for this procurement is as follows:

Federal Transit Administration (FTA): 80.4%
Catalog of Federal Domestic Assistance (CFDA) Numbers: 20500 and 20507

State: 19.6%
State Project Number: 88-179 (funding under 171-305)

Note: Options may be purchased using alternative funding sources which will be determined at a later date.

- Alternative system configurations may be proposed that meet or exceed the overall functional and performance capabilities of the system as specified and as shown on the Drawings. If the Contractor proposes an alternative system configuration to the design as specified and shown on the Drawings, the Contractor shall provide a justification for the alternative system configuration and shall demonstrate, to the satisfaction of the Engineer, that the alternative system configuration meets or exceeds the functional and performance requirements of the system. Alternative system configurations may also be proposed for the Options described throughout this RFP.

2. Scope of Services

2.1. Scope of Services

The delivery of a fully functional ITS and Communications System for CT **fastrak** to the Connecticut Department of Transportation will be performed under one contract (State Project No. 088-179). The Contractor is responsible for all detailed design, coordination, documentation, supply, delivery, installation, integration, testing, training, and technical support necessary to deliver a fully functional, fully integrated, and complete system.

The systems shall include all hardware and software components and all communications equipment required to integrate the system and support transmission of data from on-board and field equipment to and from CT **fastrak** Busway Operations Center (BOC).

Refer to the attached Technical Specifications and Drawings (see Exhibit A) for additional information on the equipment and systems for CT **fastrak**.

This section describes the general scope of services pertaining to the detailed design, documentation, delivery, installation, integration, testing, training, and technical support of the CT **fastrak** ITS and Communications Systems. The systems shall include all hardware and software components and all communications equipment required to integrate the system and support transmission of data from on-board and field equipment to and from CT **fastrak** Operations Center (BOC). The work as described is also referred to in the documents as “the Work” or “the Project.” The Project Manager for the Connecticut Department of Transportation, or his/her designated representative(s), shall be referred to as the “Engineer” within these specifications. The Connecticut Department of Transportation (CTDOT) also shall be referred to as the “Department”.

The following list summarizes the minimum tasks that shall be completed by the Contractor:

- The Contractor shall be responsible for project management activities, including the creation and maintenance of a Master Schedule of Work and critical path schedule (see Specification 101 – Project Coordinator and Specification 100 - General Provisions), attending progress meetings and submitting progress meeting materials (see Specification 100 in the General Provisions), and providing ongoing coordination with the other Contractors carrying out the five (5) contracts for the construction of the stations and CT **fastrak** guideway (see Section 3.2 - General Provisions). **The Contractor shall have the responsibility to provide ongoing coordination with the Automatic Fare Collection equipment Contractor regarding system design, construction, testing, and system integration.**
- The Contractor shall furnish the services of one of its administrative employees, entitled Document Control Specialist, who will ensure that the Contractor and all other parties as designated by the Engineer will prepare, status, electronically file and send all project correspondence and drawings utilizing a document control system as established and maintained by the Department. The Document Control Specialist shall be responsible for maintaining contract documents and submittals using the Primavera Contract Manager (PCM) software. Refer to Specification 109 – Document Control Specialist for more information.
- The Contractor shall develop Interface Control Documents with detailed descriptions of all interfaces to external systems. Specification 100 - General Provisions for more information.
- The Contractor shall carry out a Design Review Process, including Preliminary and Final Design, described in more detail in Specification 100 – General Provisions. During this process, the Contractor shall be responsible for submitting detailed Design Documentation of the system design and configuration, described in more detail in Specification 100 -

General Provisions. This documentation includes Documentation on Materials, Contractor Work Plan and Schedule, Interface Control Documents, and the System Security Plan. The Final Design Documentation shall be reviewed and accepted by the Department prior to the Contractor procuring any equipment. As part of the Design Process, the Contractor shall participate in all design, review, coordination, and progress meetings.

- The Contractor shall review construction plans for all relevant locations related to installation of system equipment including, but not limited to, the BOC, CT **fastrak** stations, locations for CT **fastrak** equipment, and sites designated for installation of equipment on-board vehicles. The Contractor shall also conduct a site visit of the proposed BOC location. Based on this review, the Contractor shall confirm the ability to install all equipment as designed at these locations.
- The Contractor shall obtain any necessary permissions required by outside parties to complete the Work as specified in the Contract.
- The Contractor shall provide adequate weatherproof office quarters for the duration of the work, and if required, for a maximum of ninety days thereafter for the exclusive use of CTDOT forces and others who may be engaged to augment CTDOT forces with relation to the contract. Refer to Specification 102 – Construction Field Office, Large for more information.
- The Contractor shall maintain and protect traffic for the duration of the work. The Contractor shall also provide the services of Trafficpersons of the type and number, and for such periods, as the Engineer approves for the control and direction of vehicular traffic and pedestrians. Traffic persons requested solely for the contractor’s operational needs will not be approved for payment. Refer to Specification 103 – Maintenance and Protection of Traffic, Specification 104 – Trafficperson (Municipal Police Officer), and Specification 105 – Trafficperson (Uniformed Flagger) for more information.
- For the duration of all installation, integration, and testing work, the Contractor shall provide Construction Communications Equipment for use by Department inspection personnel as well as a toll-free, reservation-less telephone conference call account for use by the Engineer. Refer to Specification 106 – Construction Communications Equipment for more information.
- The Contractor shall establish protocols and provide procedures to protect the health and safety of its employees and subcontractors as related to the proposed construction activities performed within the Project Areas of Environmental Concerns (AOECs), including the development and implementation of a written site-specific Health and Safety Plan (HASP). Refer to Specification 107 – Environmental Health and Safety for more information.
- The Contractor shall furnish the services of one of its management staff to serve as Quality Control Manager (QCM). The QCM shall develop and implement a Contractor Quality Control Program. Refer to Specification 108– Contractor Quality Control Program for more information.
- The Contractor shall procure, install, integrate, and test CCTV Camera Assemblies along the guideway and at stations as shown on Drawings. As per the Drawings, at certain locations along the CT **fastrak** guideway, the Contractor shall install Camera Assemblies on existing camera poles with existing camera lowering systems. As per the Drawings, at CT **fastrak** stations, the Contractor shall install Camera Assemblies on existing light poles, station shelters and canopies, VMS poles and brackets, and other existing support structures. The Contractor shall procure and install all additional support structures and/or mounting brackets and equipment required for installation of the cameras as per the Drawings. Camera Assemblies and mountings shall be consistent with CT **fastrak** station design aesthetic. The Contractor shall verify that the camera mounting location will provide

the required field of view, to the satisfaction of the Engineer. Existing conduit between the Camera Assemblies' locations and the power and communications cabinets at the station shall be provided. The Contractor shall be responsible for all cabling required to provide power to the Camera Assemblies and to connect Camera Assemblies to existing communications cabinets. Refer to Drawings and equipment specifications for further detail.

- The Contractor shall procure, install, integrate, and test Emergency Call Boxes with blue strobe lights at CT **fastrak** stations in highly visible locations as shown on Drawings. The Contractor shall provide and install an Uninterruptible Power Supply to support each Emergency Call Box. Existing conduit between the Emergency Call Box location and the power and communications cabinets at the station shall be provided. The Contractor shall be responsible for all cabling required to provide power and communications to the Emergency Call Boxes. The Contractor shall be responsible for installing all necessary Emergency Call Box foundations, concrete pads, mounting bolts, and pavement matching. The Contractor shall be responsible for providing and installing all necessary support structures and mounting hardware. As part of the following State Projects, No. 088-177, No. 088-178, No. 093-180, and No.063-670, a dedicated telephone line drop will be provided for the Contractor at the station communications cabinet for each Emergency Call Box. The Contractor shall be required to connect the Emergency Call Box to the dedicated telephone line and to coordinate with utilities to ensure that the Emergency Call Box address and location is properly established within the appropriate local public safety dispatch call center database. Refer to Drawings and equipment specifications for further detail.
- The Contractor shall procure, install, integrate, and test the PA System at stations, including speakers, audio amplifiers (each capable of supporting a minimum 10 speakers), and ambient noise level sensors as shown on Drawings. Ambient noise level sensors shall be situated so as to enable effective automated volume control to ensure understandable announcements throughout the station platforms. The Contractor shall install the PA System speakers on existing station canopies. Existing conduit between the speaker locations and the power and communications cabinets at the station shall be provided. The Contractor shall be responsible for all cabling required to provide power and communications to the PA System components. Refer to Drawings and equipment specifications for further detail.
- The Contractor shall procure, install, integrate, and test single-sided and double-sided VMS at stations as shown on Drawings. Double-sided VMS shall be installed and suspended from existing station canopies. The Contractor shall inspect existing station canopies and verify that the structure can safely support the mounting of the double-sided VMS. The Contractor shall supply all required mounting hardware to safely suspend the double-sided VMS from existing station canopies. Single-sided VMS shall be installed on support structures to be designed, procured, and installed by the Contractor. In most cases, the single-sided VMS shall be installed on a cantilevered bracket attached to the station platform pylon. The Contractor shall be responsible for designing the cantilevered bracket to safely support the VMS and additional ITS equipment (cameras, etc.). The bracket design shall be stamped by a structural engineer licensed in the State of Connecticut. The Contractor shall also have a structural engineer licensed in the State of Connecticut review pylon foundation design and certify that the proposed VMS, bracket, camera, and ancillaries and accompanying loads (including galloping) can be supported by the pylon foundation. In some cases, the single-sided VMS shall be installed on a dedicated galvanized steel pole, to be designed by the Contractor and stamped by a structural engineer licensed in the State of Connecticut. For the single-sided VMS, the Contractor shall be responsible for installing all necessary VMS foundations, concrete pads, mounting bolts, and pavement matching. The Contractor shall be responsible for providing and installing all necessary support structures and mounting hardware. For both single-sided and double-sided VMS, the Contractor shall procure, integrate, install, and test push-button read-out activation devices associated with each VMS that, when activated,

cause the messages displayed on the VMS to be read out as an announcement through an integrated VMS speaker. These read-out activation devices shall be installed in close proximity to the VMS sign in accordance with ADA guidance. Existing conduit between all VMS locations and the power and communications cabinets at the station shall be provided as noted on plans. The Contractor shall be responsible for all cabling required to provide power and communications to the VMS and associated speakers and push-buttons. Refer to Drawings and equipment specifications for further detail.

- The Contractor shall procure, install, integrate, and test Traveler Information System (TIS) Controllers to manage the PA System and VMS at stations as shown on Drawings. The TIS Controllers shall be installed in the communications cabinets at station locations. The TIS Controllers shall synchronize VMS and PA System messages and allow for local control of VMS and PA Systems during an emergency or when communications with the BOC is lost. The TIS Controllers at the stations shall include an equipment/communications case with a computer and local microphone and data entry keyboard. The Contractor shall be responsible for all cabling required to provide power and communications to the TIS Controllers. Refer to Drawings and equipment specifications for further detail.
- ~~The Contractor shall procure, install, integrate, and test Ticket Validators at stations as shown on Drawings. The Contractor shall be responsible installing all necessary Ticket Validator foundations, concrete pads, mounting bolts, and pavement matching. The Contractor shall be responsible for providing and installing all necessary support structures and mounting hardware. Existing conduit between the Ticket Validator locations and the power and communications cabinets at the station shall be provided. The Contractor shall be responsible for all cabling required to provide power and communications to the Ticket Validators. Refer to Drawings and equipment specifications for further detail.~~
- ~~The Contractor shall procure, install, integrate, and test Ticket Vending Machines (TVMs) at stations as shown on Drawings. The Contractor shall be responsible for installing all necessary TVM foundations, concrete pads, mounting bolts, and pavement matching. The Contractor shall be responsible for providing and installing all necessary support structures and mounting hardware. The Contractor shall install a shelter to protect the TVMs and TVM customers from the rain. Existing conduit between the TVM locations and the power and communications cabinets at the station shall be provided. The Contractor shall be responsible for all cabling required to provide power and communications to the TVMs. Refer to Drawings and equipment specifications for further detail.~~
- The Contractor shall procure, install, integrate, and test Field-Hardened Media Converters at station locations as shown on Drawings. The Contractor shall be responsible for providing and installing all necessary mounting hardware. The Contractor shall be responsible for all cabling required to provide power and communications to the Field-Hardened Media Converters. Refer to Drawings and equipment specifications for further detail.
- ~~The Contractor shall procure, integrate, and test Mobile Enforcement Devices. MEDs shall include docking stations to charge the MEDs and to allow data to be automatically downloaded from and uploaded to the central software. The MEDs shall be used by enforcement staff to enter information and print citations. The location of the docking stations will be determined by the Department. Refer to equipment specifications for further detail.~~
- The Contractor shall be responsible for ensuring that all Contractor-provided mounting equipment, and all structures on which equipment will be mounted, can withstand the static and dynamic forces associated with the equipment being mounted under the environmental conditions as specified. The Contractor shall submit documentation for the review of the Department, including drawings and calculations stamped by a structural

engineer licensed in the State of Connecticut demonstrating the ability of mounting equipment to meet mounting and installation requirements.

- The Contractor shall procure, install, integrate, and test all necessary hardware and software at the BOC. Hardware at the BOC shall include a Modular Chassis Switch, Firewalls, Servers, Network Video Recorders, a Video Display Processor, Video Monitors, Workstations and Workstation Monitors. Software at the BOC shall include CAD/AVL Central Software, AVA Software, APC Management Software, CCTV Camera Management Software, Traveler Information Software, Emergency Call Box Management Software, ~~Fare Management Central Software~~, Bulk Data Communications Gateway Software, Cellular Data Communications Gateway Software, and a Network Management System. Unless otherwise approved or directed by Connecticut Department of Transportation, the Servers, Firewalls, Modular Chassis Switch, and Network Video Recorders at the BOC shall be rack-mounted. The Contractor shall provide a BOC Rack (equipped with rack power distribution units and rack cooling fans) for the equipment proposed, and shall install and integrate the BOC Rack into Department designated facilities. All equipment at the BOC shall be supported by an Uninterruptible Power Supply (UPS). Refer to Drawings and equipment specifications for further detail.
- The Contractor shall configure, integrate, and test all software and automated software interfaces for the BOC at the CTTRANSIT facility at New Britain station. In particular, the Contractor shall demonstrate that the automated interface between the CAD/AVL Central Software and the different instances of CTTRANSIT's existing scheduling software is in accordance with the Department-approved Interface Control Document. Refer to Specification 206 – Software Integration for more information.
- The Contractor shall procure, install, integrate, and test a fiber-optic communications system to support the transmission of data from field equipment to the BOC. This shall include equipment needed for various Optical Fiber Cables, Optical Fiber Splice Enclosures, Optical Fiber Termination Patch Panels, Ethernet Switches, Ethernet Cabling, and Category 6 Copper Patch Cable. The fiber-optic communications system shall be managed by the Network Management System at the BOC. Refer to equipment specifications for further detail.
- The Contractor shall procure, install, integrate, and test all transit vehicle on-board equipment, including the Mobile Data Computer (including a Vehicle Logic Unit and Mobile Data Terminal), AVA controller, interior VMSs, Automatic Passenger Counters, a Mobile Communications Gateway and Router, and a Multi-band On-board Antenna. The Contractor shall inspect the designated transit vehicle(s) to confirm installation details. The Contractor shall coordinate with the Department regarding incorporating cell data communications. Refer to equipment specifications and testing specifications for further detail.
- The Contractor shall procure, install, integrate, and test all non-revenue vehicle (supervisor, administrative, and maintenance vehicle) on-board equipment, including an On-board Processing Device with an integrated GPS receiver and cellular data modem card, and an Antenna that supports GPS and cellular frequencies. The Contractor shall inspect the designated maintenance vehicle(s) and supervisory vehicle(s) to confirm installation details. The Contractor shall coordinate with the Department regarding incorporating cell data communications. Refer to equipment specifications and testing specifications for further detail.
- The Contractor shall perform Factory Acceptance Tests (FAT) on all field devices and central system hardware and equipment and submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 201 – Factory Acceptance Tests for more information.

- The Contractor shall perform a Prototype Demonstration Test on designated representative quantities of field devices and central system hardware and equipment and submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 202 – Prototype Demonstration Test for more information.
- The Contractor shall perform an On-Board Equipment Pilot Test for equipment installed on-board transit vehicles and central system hardware and equipment and submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 203 – On-Board Equipment Pilot Test for more information.
- Prior to installation in the field, the Contractor shall perform a System Demonstration Test on all configured and connected field devices and central system hardware and equipment and submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 204 – System Demonstration Test for more information.
- As equipment is installed in the field, the Contractor shall perform all required Installation Testing to ensure safe and proper installation in accordance with industry best practices and manufacturer/vendor recommendations. The Contractor shall submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 205 – Installation Test for more information.
- Following installation and integration, the Contractor shall perform an Integration Test on each subsystem of field devices and central system hardware and equipment and on the overall ITS and Communications Systems. The Integration Test shall demonstrate to the Department's satisfaction that the installed system meets all system requirements. The Contractor shall submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 206 – Integration Test for more information.
- Following the Integration Test and prior to training, the Contractor shall submit all required Operations and Maintenance Documentation, described in more detail in Specification 100 – General Provisions. This documentation includes Hardware Manuals, Software Manuals, and Vehicle Operator Manuals. The Operations and Maintenance Documentation shall be reviewed and accepted by the Department prior to the Contractor commencing training.
- The Contractor shall submit a training plan and provide training for Department-designated personnel for all hardware, software, communications and the overall system after the Integration Test has been successfully completed and the results accepted by the Department. Instruction shall include training in system operation, system maintenance and troubleshooting, and system administration. Refer to Specification 300 – Training for more information.
- To demonstrate stable and failure-free operation of the system, the Contractor shall perform an Acceptance Test for a 30-day period (or otherwise approved by the Engineer) after the Integration Test and training have been completed and approved by the Department. The Contractor shall submit all testing documentation for Department review in accordance with the Test Plan. Refer to Specification 208 – Acceptance Test for more information.
- The Contractor shall provide spare parts for all ITS and communications equipment on-board vehicles, at the BOC, on CT **fastrak**, and at stations. The Contractor shall maintain this quantity of spare parts throughout the duration of the Technical Support and Warranty period. The Contractor shall also provide all maintenance materials and sufficient operating stock (ticket stock, paper, ink, etc.) to allow for anticipated operations for an initial three (3) month period. Refer to Specifications 100 – General Provisions for more details.
- Final Acceptance will be granted by the Department at its sole discretion based on the successful completion of all work; all training; all testing, including the thirty (30) day

Acceptance Testing; delivery of spares; and Department acceptance of all system documentation.

- The Contractor shall provide start-up support from the time that equipment is installed until Final Acceptance. The Contractor shall maintain all system components in good working condition in a timely fashion and shall provide all routine maintenance and required repairs. Refer to Specifications 100 – General Provisions for more details.
- The Contractor shall provide Technical Support and Warranty Services for the integrated ITS and Communication System for CT**fastrak** for an initial period of two (2) years following Final Acceptance (Years 1 and 2). The System Technical Support and Warranty shall cover all ITS and communications equipment at the BOC, along the CT**fastrak** guideway, at stations, and on vehicles. The Contractor shall also manage each individual ITS and communications component warranties as described in each equipment item specification, providing a single point of warranty contact for the Department.

The Contractor shall prepare and submit all deliverables described in Specification 100 – General Provisions.

- **OPTION:** Upon completion of Years 1 and 2, the Department may, at its sole discretion, choose to extend this contract to include an additional one (1) year of Technical Support and Warranty Services (Year 3). Upon completion of Year 3, the Department may, at its sole discretion, choose to extend this contract to include another additional one (1) year of Technical Support and Warranty Services (Year 4). Refer to equipment specifications and Specification 400 – Technical Support and Warranty Services for more information.
- **OPTION:** At its sole discretion, at any time during the contract duration, including the initial Technical Support period, the Department may choose to have the Contractor provide additional equipment and services to implement a redundant Modular Chassis Switch and associated communications equipment at the New Britain Station supervisors building. Refer to Specification 100 – General Provisions for more information.
- ~~**OPTION:** At its sole discretion, at any time during the contract duration, including the initial Technical Support period, the Department may choose to have the Contractor provide additional equipment quantities and installation and integration services to expand the CAD/AVL Central System to accommodate a larger geographic area and additional vehicle fleets. This work would include the provision of remote instances of BOC central software and supporting hardware at various locations throughout the State.~~
- **OPTION:** At its sole discretion, at any time during the contract duration, including the initial Technical Support period, the Department may choose to have the Contractor provide additional on-board equipment quantities and related installation and integration services. This work may include the provision of additional BOC central software and supporting hardware at various locations throughout the State.

For costing purposes, the Contractor shall assume the following locations and fleet sizes:

Location	Transit Vehicles	Non-Revenue Vehicles
Hartford	300	35
Hamden	160	25
Stamford	100	15
Waterbury	100	17
DATTCO (in New Britain)	20	2
New Britain	20	6
TOTAL	700	100

As part of this option, the Contractor shall provide the following on-board equipment for transit vehicles: the Mobile Data Computer (including a Vehicle Logic Unit and Mobile Data Terminal), AVA controllers, interior VMSs, Automatic Passenger Counters, a Mobile Communications Gateway and Router, and a Multi-band On-board Antenna. The Contractor shall also provide the following on-board equipment for non-revenue vehicles (e.g., supervisor, administrative, and maintenance vehicles): On-board Processing Device with an integrated GPS receiver and cellular data modem card, and an Antenna that supports GPS and cellular frequencies. Refer to equipment specifications and testing specifications for further equipment details. Project schedule and Department responsibility for the equipment and services provided as part of this option would be separately negotiated and would not be subject to the time constraints identified herein, except as specifically identified by mutual agreement.

2.2. Implementation Program

Figure 1 summarizes the process the Contractor shall use for the delivery and testing of ITS and Communications System hardware, software, and overall systems. The diagram distinguishes between On-Board, BOC, Station/Busway, and Communications equipment by showing them in separate columns. Steps are shown in chronological order from top to bottom, with concurrent activities more or less in line horizontally. In the case where a step is to be carried out for multiple types of equipment, the step is shown with a grey box spanning across the relevant columns. This process is described in more detail in Specifications 100 - General Provisions.

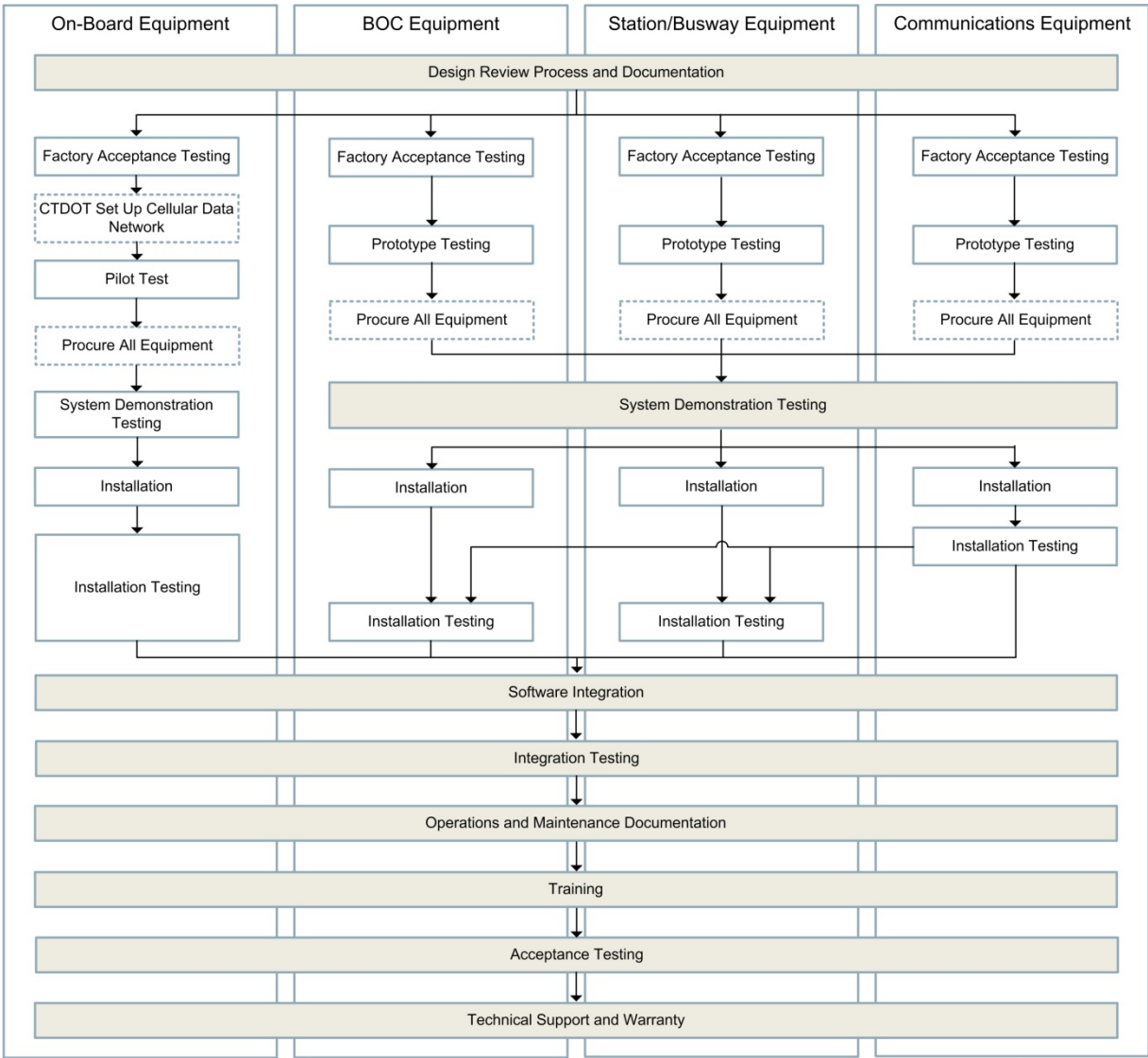


Figure 1: Implementation Program

2.3. Project Schedule and Key Milestones

The chart below depicts the contractual milestones and access constraints for the ITS and Communications System Project. These dates represent the multiple contract interfaces and vehicle deliveries that are required for completion of this project. It should be noted that Notice of Award and Notice to Proceed dates shown are forecast based on the best information at this time.

ITS AND COMMUNICATIONS SYSTEMS TIMELINE

Milestone	Milestone	Calendar Days from NTP*	Current Forecast
	Notice of Award (forecast)		3/26/2013
	Notice to Proceed (forecast)		5/10/2013
MS 1	Completion of System Demonstration Test	314	3/20/2014
AC 1	Turnover of Contract 1 - New Britain Station		3/26/2014
AC 4	Turnover of Contract 4 - Union Station		4/3/2014
AC 2	Turnover of Contract 2 - East Street and East Main Street Stations		4/9/2014
AC 5	Availability of Busway Operations Center		7/4/2014
AC 3	Turnover of Contract 3 - Cedar Street, Newington Junction, Elmwood, New Park, Flatbush, Kane and		8/8/2014
AC 6	Availability of Pilot Test Bus		8/15/2014
AC 7	Availability of Buses		10/1/2014
MS 2	Completion of Installation Testing	572	12/3/2014
CCD	Contract Completion Date	616	1/16/2015

** If days from NTP are not shown, date is a hard date and will not change based on the final NTP date. Reference the Contract Time and Liquidated Damages section for detailed milestone and access constraint descriptions.*

3. Product and/or Service Specifications

3.1. Detailed Specifications

Refer to the attached Technical Specifications and Drawings for detailed product and service specifications and additional details.

3.2. Coordination with Other Projects

The Contractor is hereby made aware of other ongoing projects which may impact the prosecution of the required Work of this project. The Contractor shall be required to coordinate the work of this contract with the following projects:

- **CTfastrak Construction Contracts:** The Contractor shall coordinate with the Contractors responsible for each of the five (5) Department contracts for constructing the stations and the CTfastrak guideway in accordance with the map. The Contractor shall reference the contract numbers shown in the figure.
- **Radio System Upgrade:** At the time of writing this RFP, the Department, in conjunction with the Connecticut Department of Public Safety, was in the process of deploying an upgraded radio system for all eight divisions of state-owned transit. The bandwidth provided by this upgraded radio system should be sufficient for voice communications and some low-speed data transmission. High-speed data requirements will need to be met by other forms of communications, such as cellular communications or wireless broadband. The Contractor shall coordinate with the Department and the Connecticut Department of Public Safety to ensure that any ITS and communications equipment requiring use of the radio system is compatible with the radio system.
- **CTTRANSIT System-wide Coordination:** The Contractor shall coordinate with CTTRANSIT with regards to potential system expansion and coordination of the project with ongoing system-wide efforts. Coordination shall include potential for integration with existing and planned fareboxes and other existing or planned on-board equipment.
- **Scheduling Software Upgrade:** The Contractor shall coordinate with the Department to ensure that the hardware and software in these specifications are able to interface with any current or impending scheduling software upgrades.
- **Upgrade of BOC Facility:** The Contractor shall inspect the proposed BOC facility location to identify to CTTRANSIT any upgrades that are required to the HVAC, electrical, and other relevant systems in order to fully operate the integrated ITS and communications equipment at the BOC. The Contractor shall coordinate with CTTRANSIT with regards to overall space planning for the BOC facility. The Contractor shall coordinate with CTTRANSIT and the Department to ensure that upgrades are completed before installation of BOC equipment. If the Option is exercised to provide additional BOC equipment at remote locations, the Contractor shall also inspect these proposed remote BOC facility locations to identify HVAC, electrical, communications, space planning, and other relevant needs. **The Contractor shall notify the Department in writing within ninety (90) days following Notice to Proceed of required upgrades, improvements or remodeling that will be reasonably required to implement and install the CTfastrak BOC systems and equipment. The Department will review the Contractor's request and make any changes prior to approving the request.**

- **WLAN at Garages:** At the time of writing these specifications, CTTRANSIT is considering installation of a wireless local area network infrastructure (WLAN) at three garages. The Contractor shall coordinate with the Department and CTTRANSIT to determine whether this WLAN can be used for bulk data exchange with on-board ITS systems for vehicles that operate on CT *fastrak*.
- **Automatic Fare Collection (AFC):** The Contractor shall coordinate with the AFC equipment contractor and the Department/CTTRANSIT as the fare collection system is being deployed on the project. Coordination shall include, but not be limited to, schedule and design coordination, central systems compatibility, testing, integration, and physical access ability. AFC equipment and software may include ticket vending machines, ticket validators, fare management software and appurtenant cabling and hard wiring.

Interim completion of the busway communications system: The Contractor shall provide a completion schedule for the installation of the Busway Communication System to the extent that the AFC equipment contractor may begin installation of the system components and make connections to the designated power supply, communications system, Gigabit Ethernet Switch and BOC systems. These dates shall be included in a master schedule.

3.3. Drawing Numbering

The Contractor is hereby notified that the sheet numbering format for the CT *fastrak* drawings is as follows: The sheet numbers consist of the two digit numerical designation for the Volume Number followed by a period, the two digit numerical designation for the Subset Number, followed by a period and the three digit numerical designation for the Sheet Number in the Subset. For example, the sheet number 13.02.009 is for Volume 13, Subset 02, Sheet Number 009.

3.4. Information Shown on the Drawings

The Contractor is hereby notified that the information shown on the Drawings is intended as guide to the development and implementation of a fully functional system. The Drawings, particularly the system block diagrams, depict a logical organization of functional modules and subsystem interfaces, and allow for various manufacturers' equipment to be utilized to provide a fully functional system. The Drawings, therefore, are not intended as final implementation drawings and the physical implementation provided by the Contractor may differ from the Drawings if prior approval is received from the Department of Transportation. The Contractor shall review and understand the functional and performance requirements of the ITS and Communication System as depicted in the Drawings and described in the Specifications. The Contractor shall then select the equipment and materials, subject to Department review and approval, that meet the specified functional and performance requirements necessary to provide a fully functional system. The Contractor shall be responsible for all implementation details associated with the selected and approved equipment. It is the responsibility of the Contractor to contact the Engineer to resolve any discrepancies discovered by the Contractor in the Drawings and Specifications. Discrepancies, errors and omissions in the Specifications and Drawings shall not relieve the Contractor of the responsibility to provide a fully functional system and shall not form the basis for Claims against the Department.

3.5. Noise Pollution

The Contractor shall take measures to control the noise intensity caused by construction operations and equipment, including but not limited to equipment used for excavation or hauling.

All methods and devices employed to minimize noise shall be subject to the continuing approval of the Engineer. The maximum allowable level of noise at the nearest residence or occupied building shall be 90 decibels on the "A" weighted scale (dBA). Any operation that exceeds this standard will cease until a different construction methodology is developed to allow work to proceed within the 90 dBA limit.

3.6. Protection of Existing Utilities

Existing utilities shall be maintained during construction except as specifically stated herein and/or noted on the Drawings and as coordinated with the utilities. The Contractor shall verify the location of underground, structure mounted and overhead utilities. Construction work within the vicinity of utilities shall be performed in accordance with current safety regulations.

The Contractor shall notify "Call Before You Dig", telephone 1-800-922-4455 for the location of public utility, in accordance with 16-345 of the Regulations of the Department of Utility Control.

Representatives of the various utility companies shall be provided access to the work, by the Contractor.

Contractors are cautioned that it is their responsibility to verify locations, conditions, and field dimensions of all existing features, as actual conditions may differ from the information shown on the Drawings or contained elsewhere in the specifications.

The Contractor shall notify the Engineer prior to the start of work and shall be responsible for all coordination with the Department. The Contractor shall allow the Engineer complete access to the work.

The Contractor shall be liable for all damages or claims received or sustained by any persons, corporations or property in consequence of damage to the existing utilities, their appurtenances, or other facilities caused directly or indirectly by the operations of the Contractor.

Any damage to any existing private and public utility, as a result of the Contractors operations, shall be repaired to the utilities and Engineer's satisfaction at no cost to the State or the Utilities, including all materials, labor, etc., required to complete the repairs.

Prior to opening an excavation, effort shall be made to determine whether underground installations, i.e., water, sanitary, gas, electric ducts, communication ducts, etc., will be encountered and, if so, where such underground installations are located. When the excavation approaches the estimated location of such an installation, the exact location shall be determined by careful probing or hand digging, and when it is uncovered, proper supports shall be provided for the existing installation. Utility companies shall be contacted and advised of proposed work prior to the start of actual excavation, as noted above.

3.7. Permits

The Contractor shall obtain any necessary federal, state, and city permits, including but not limited to, sidewalk, curb and road opening, and maintenance and protection of traffic.

3.8. Equipment Inspection

The Department reserves the right to inspect the Contractor's equipment or facility in an effort to determine if it is qualified to perform the services required for the Work.

3.9. Work Restrictions - General

The Contractor will insure that all proper safety items will be worn by all personnel at all job sites, including at stations, along CT**fastrak**, and at the BOC.

To install equipment and conduct equipment testing, the Contractor will require access to the field equipment sites at stations and along CT**fastrak**. The Contractor shall coordinate access to field equipment sites with the Engineer. No lane closures or other obstructions to traffic movement along CT**fastrak** shall be allowed without prior written authorization from the Engineer.

Prior to commencing work at the BOC, the Contractor shall notify the Engineer and any designated facility contacts and coordinate installation and testing of all central system equipment, hardware and software. The Contractor shall work within the restricted hours of the BOC site and shall coordinate work with the designated facility contacts to minimize interference with existing, ongoing operations.

CTTRANSIT personnel will occupy the BOC site described herein during the entire construction period. The Contractor shall cooperate with CTTRANSIT during construction operations to minimize conflicts and facilitate usage. The Contractor shall perform the Work so as not to interfere with CTTRANSIT operations.

Unless otherwise directed by the Engineer or the designated contact at the BOC site, the Contractor shall comply with the general Use of Premises restrictions as specified below.

3.10. Work Restrictions - Use of Premises

The Contractor shall confine Work to the extent depicted in the Drawings and Specifications. The Contractor shall not disturb portions of the site beyond areas in which the Work is indicated.

The Contractor shall allow for Owner occupancy of the site and use by the public. Any work that can potentially disrupt the Owner's activities shall first be cleared with the Engineer. The Contractor shall not impact exiting requirements of the building occupants and areas at any time during construction.

The Contractor shall keep driveways and entrances serving premises clear and available to the Owner, the Owner's employees, and emergency vehicles at all times. The Contractor shall not use these areas for parking or storage of materials. The Contractor shall schedule deliveries to minimize use of driveways and entrances.

The Contractor shall schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

The Contractor shall maintain the existing building/shelter in a weather tight condition throughout the construction period. Repair damage caused by construction operations. The Contractor shall protect the building/shelter and any occupants during the construction period.

Restriction in use of the building facilities:

- a. All Contractor personnel working on premises will be required to comply with CTRANSPORT and Department security and badging restrictions.
- b. Access to the building begins at 7:00 AM and continues until 9:00 PM on weekdays. The Contractor shall perform all Work that does not disrupt normal operations during normal business hours, which are defined as between 8:00 AM and 4:00 PM. The Contractor shall not be paid any additional compensation for overtime.
- c. Extremely noisy, dusty, or otherwise burdensome activities that may disrupt normal operations shall be scheduled for after business hours. After business hours are defined as between 4:00 PM and 9:30 PM on weekdays. The types of activities that are to be conducted after business hours include but are not limited to: drilling, overhead cable installation, or other activities of this nature. No additional compensation will be paid for this activity.
- d. The Contractor shall not transport large, heavy, or long materials when there is a danger to employees in potentially congested circulation areas. All materials shall be scheduled with the Engineer so determinations can be made relative to time of transport. It may be necessary to transport certain materials before, or after, normal working hours (8:00 AM to 4:00 PM). After business hours are defined as between 4:00 PM and 9:00 PM on weekdays. No additional compensation will be paid for this activity.
- e. During the time that the Contractor is working on the premises the Contractor is responsible for security in order to prevent theft of or damage to Owner's property. Contractor shall adhere to established security and/or property entrance policies and procedures established for each requesting State Entity. It is the responsibility of each Contractor to understand and adhere to those policies and procedures prior to any attempt to enter the premises. The Contractor shall not leave doors open, or create other situations that make building subject to theft or vandalism.
- f. All Contractor's vehicles, "gang boxes", and debris containers shall be subject to inspection while on premises and when entering and leaving the facilities.
- g. The Contractor shall be responsible for ensuring that construction activities do not disrupt continuous operation of the entire building during normal business hours including all building systems and utilities. If construction activities require a shutdown of building systems including but not limited to: HVAC, fire alarm, security, UPS, or general electrical systems to accomplish work, the Contractor shall schedule work with the Engineer at least forty-eight (48) hours in advance of a required shutdown. In the case of the fire alarm, the Contractor shall deactivate the building horns, strobes, and notify the appropriate alarm company and local fire department that the system has been taken off-line for work. Upon completion of the work (or before departing the facility that day, whichever occurs first), the Contractor shall bring all systems back on-line and notify appropriate personnel. These same procedures shall be applied to the building's security systems when the Contractor is working on them.
- h. All debris from demolition and/or construction activities shall be removed and disposed of by the Contractor from the premises on a daily basis. Disposal of the debris is the sole responsibility of the contractor and the Contractor shall comply with all prevailing local laws, rules, and ordinances with regard to disposal.
- i. The Contractor shall protect walls, floor, door frames, doors, ceilings, ramps, stairs, and the loading dock from construction activities, including overloading. Any damage to the facilities, as a result of the Contractors operations, shall be

repaired to the Engineer's satisfaction at no cost to the Department, including all materials, labor, etc., required to complete the repairs.

3.11. Limitation of Operations

TIME RESTRICTIONS:

In order to provide for traffic operations as outlined in the Special Provision "Maintenance and Protection of Traffic," the Contractor will not be allowed to perform any work that will interfere with existing traffic operations on all project roadways as follows:

ON THE FOLLOWING STATE OBSERVED LEGAL HOLIDAYS:

New Year's Day
Good Friday, Easter*
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day**
Christmas Day

The following restrictions also apply:

On the day before and the day after any of the above Legal Holidays.

On the Friday, Saturday and Sunday immediately preceding any of the above Holidays celebrated on a Monday.

On the Saturday, Sunday and Monday immediately following any of the above Holidays celebrated on a Friday.

* From 6:00 a.m. the Thursday before the Holiday to 8:00 p.m. the Monday after the Holiday.

** From 6:00 a.m. the Wednesday before the Holiday to 8:00 p.m. the Monday after the Holiday.

EXPRESSWAYS, RAMPS & TURNING ROADWAYS

The Contractor will not be allowed to perform any work that will interfere with existing traffic operations on:

Monday through Friday between 5:00 a.m. and 8:00 p.m.
Saturday and Sunday between 10:00 a.m. and 9:00 p.m.

The Contractor will not be allowed to perform any work that will interfere with one lane of through traffic operations on ramps and turning roadways or reduce expressway lanes by more than one lane on:

Monday through Friday between 8:00 p.m. and 5:00 a.m. the following morning
Saturday and Sunday between 9:00 p.m. and 10:00 a.m. the following morning

ALL OTHER ROADWAYS

The Contractor will not be allowed to perform any work that will interfere with existing traffic operations on:

Monday through Friday between 6:00 a.m. and 9:00 a.m. & between 3:00 p.m. and 8:00 p.m.
Saturday and Sunday between 10:00 a.m. and 9:00 p.m.

Access and egress to all adjacent properties shall be maintained at all times. Any dedicated sidewalk shall be maintained and protected to allow for the safe passage of pedestrians.

All construction work on local roads affecting existing traffic operations shall be coordinated with the Engineer and the respective cities/towns of Hartford, West Hartford, Newington and New Britain.

RESTRICTIONS ON INTERFERENCE WITH TRAFFIC

It is anticipated that work on adjacent projects may be ongoing simultaneously with this project. The Contractor shall be aware of those projects so that coordination is maintained for proper traffic flow at all times on all project roadways and this coordination is acceptable to the Engineer.

The Contractor will not be allowed to perform any work that will interfere with existing traffic operations on an expressway when any other Contractor is restricting existing traffic operations on that expressway within one mile of a lane closure on this project unless the Contractors have coordinated the closure and this coordination is acceptable to the Engineer.

AMTRAK RAILROAD OPERATIONS:

The Contractor shall coordinate his activities with Amtrak, and shall receive permission for all operations that are in proximity of the railroad tracks. Work within 15 feet of the tracks shall be avoided, and the contractor is prohibited from performing any work that could interfere with Amtrak Railroad operations or the protection of railroad crossings.

3.12. Compensation/Milestone Completion Schedule

For implementation services rendered as part of all work associated with the implementation of the ITS and Communications System for CT **fastrak**, compensation shall be made based on a negotiated total lump sum implementation cost. The total lump sum implementation cost shall consist of the sum total of the unit prices and lump sum costs as indicated by the Contractor in the negotiated contract **Price Proposal Template (Exhibit C)** for each of the equipment items included in these specifications, as well as include all documentation, design, coordination, procurement, delivery, installation, integration, configuration, calibration, testing, training, direct salary, overhead, profit, direct expenses, and all other

costs necessary for the Contractor to successfully implement the system in accordance with these specifications and the Terms and Conditions of the Contract.

The release of payment for this Work shall be based on a milestone completion schedule. The payment schedule shall be based on milestones as follows:

Table 2: Milestone Completion Schedule

Milestone	% Payment	Cumulative %
Approval of Final Design Documentation	10	10
Approval of FAT Documentation	10	20
Approval of PDT Documentation	10	30
Approval of On-board Equipment Pilot Test Documentation	10	40
Approval of SDT Documentation	10	50
Approval of Installation Test Documentation	10	60
Approval of Integration Test and As-Built Documentation	20	80
Approval of O& M Documentation	5	85
Completion of Training	5	90
Issuance of Final Acceptance	10	100

In addition to the lump sum implementation cost, payment for several additional implementation items will be paid in accordance with the payment schedule described in their individual specifications. These implementation items include:

- Specification 102 – Construction Field Office, Large
- Specification 104 – Trafficperson (Municipal Police Officer)
- Specification 105 – Trafficperson (Uniformed Flagger)
- Specification 106 – Construction Communication Equipment
- Specification 107 – Environmental Health and Safety
- Specification 108 – Contractor Quality Control Program
- Specification 109 – Document Control Specialist
- Specification 206 – Software Integration

The Contractor and the Department shall negotiate a separate lump sum cost for the initial two (2) year period of Technical Support and Warranty Services (Specification 401). The Contractor and the Department shall also negotiate a separate lump sum cost for each of the two optional one (1) year extensions of Technical Support and Warranty Services (Specifications 402 and 403).

The release of payment for all work associated with Technical Support and Warranty Services of the CT **fastrak** ITS and Communications Systems shall be based on the negotiated lump sum cost, divided into equal amounts and dispersed quarterly over the technical support period. Quarterly payments shall take into account any credits or penalties applied by the Department. Refer to equipment specifications, and Specification 400 – Technical Support and Warranty Services for more information.

Payment and schedule for other options procured as part of this work shall also be separately negotiated between the Contractor and the Department. These options may be incorporated into the lump sum total implementation cost by mutual agreement.

See Exhibit C, Price Proposal Template for use when responding to this RFP.

3.13. Existing Incident Management System (IMS)

The Contractor is herein made aware of existing Incident Management System (IMS) conduit and appurtenances located in the vicinity of the project area.

The Contractor will be responsible for locating, verifying the location of and protecting all IMS below and above the ground. Prior to the start of construction, the Contractor shall contact "Call Before You Dig" and all utility within the towns along the project corridor. The Contractor shall also contact Mr. James Gannon of CTDOT Highway Operations at 203-673-7373 to mark out IMS conduit and appurtenances.

In areas adjacent to existing incident management system equipment, the Contractor is required to hand excavate. Any damage caused to the IMS conduit/equipment will be the responsibility of the Contractor, and will be replaced by the Contractor at the Contractor's expense, as directed by the Engineer. Mark out of the IMS will not relieve the Contractor of responsibility for repair of damage caused by the Contractor or the Contractor's sub-contractors.

The Contractor shall contact Mr. John Korte of CTDOT Highway Operations at 860-594-3459 at least one (1) week before the installation of the "Busway ITS" fiber optic cable in the existing Highway Operations Incident Management System conduit and pullboxes installed along I-84 (Spring St. to Market St.) and along I-91 (Market St. to Jennings Rd.). The Contractor shall not install any fiber optic cable in the existing Highway Operations Incident Management System conduit without approval and oversight from Mr. John Korte of CTDOT Highway Operations.

3.14. IMS Installation Requirements

Approval of Fiber-Optic Cable Installation, Splicing and Testing:

In addition to the Contractor Requirements identified in Section 5.1 of this RFP, each Contractor or Subcontractor performing the work involved with installing, splicing and testing of cable and electronic communication systems in relation to existing IMS infrastructure, shall provide references and resumes of staff that shall meet the following requirements:

The proposed Optical Fiber Cable installer shall have satisfactory completion of at least three (3) fiber-optic based communication projects in the last three years **on limited access highways**. Experience shall be in related fiber optic systems for installers involving single-mode cables in excess of 10 kilometers.

The Contractor shall provide a list of each fiber-optic based communications project and/or intelligent transportation system project which the Contractor has performed, including a description of each project, the location of each project, inclusive dates of when the work was performed on each project, and a contact reference for each project listed. As a minimum, the contact reference shall include an individual's name, training certificates (including updated licenses), title, and current telephone number.

This document shall be submitted to CTDOT for review and approval before any fiber optic cable is pulled through the existing conduit on I-84 and I-91. See plans for locations.

The document for the Fiber-Optic Cable Installation Qualifications shall be submitted for approval within ten (10) days to the start of the work on I-84 and I-91 to:

Mr. John F. Korte
Connecticut Department of Transportation
Bureau of Engineering and Highway Operations
2800 Berlin Turnpike P.O. Box 317456
Newington, Connecticut 06131-7546

These requirements shall apply to the following contract item installations:

- Specification 506 - Optical Fiber Cable (48 Strand)

The Contractor shall not start work on the Incident Management System until the Contractor receives approval from the Office of Highway Operations.

The Incident Management System shall be maintained in normal working operation at all times.

In the event that the Contractor needs to remove an Incident Management System device from service, the Contractor shall notify Mr. John F. Korte at the Newington Operations Center (860) 594-3459 at least five (5) working days prior to any scheduled work operation. An Incident Management System device shall consist of fiber optic cable including any associated fiber optic communications plant equipment.

All Contractor personnel involved in the placing, splice preparation and splicing of fiber optic cable shall meet or exceed the above referenced installation qualifications and shall be approved by the Office of Highway Operations. Under no circumstance will unqualified, unapproved Contractor personnel be allowed to work on the Incident Management System.

3.15. ~~NOTICE TO CONTRACTOR – ENVIRONMENTAL INVESTIGATIONS~~

~~Environmental site investigations have been conducted that involved the sampling and laboratory analysis of soil and groundwater collected from various locations and depths within the Project limits. Based on the findings of the environmental investigations, forty-nine (49) soil Areas of Environmental Concern (AOECs) and six groundwater AOECs exist within the Project limits. The Contractor is hereby notified that Controlled Material (soil and groundwater) within the AOECs will require special management and/or disposal procedures.~~

~~Results of the environmental investigations indicate the presence of extractable total petroleum hydrocarbons (ETPH), polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), chlorinated pesticides, lead, arsenic, and mercury at concentrations exceeding the applicable State of Connecticut Department of Environmental Protection (DEP) Remediation Standard Regulation (RSR) numeric criteria in soil within the Project limits.~~

~~The Contractor is advised that a separate Waste Stockpile Area (WSA) is not required to be constructed as part of this Project. Two central WSAs will be constructed and operated by others. The central WSAs will receive Controlled Materials as well as excess and unsuitable materials from "Low Level" Areas of Environmental Concern (LLAOEC) from this Project and other projects in the vicinity. The Contractor is responsible for coordinating all~~

WSA-related activities for which he is responsible under this Project with the WSA Operator including, but not limited to, scheduling the delivering and/or removal of materials to/from the WSAs.

Controlled Material excavated from a soil AOEC may be reused in the AOEC from which it was excavated or in another AOEC with similar contaminants, as determined by the Engineer. Controlled Material excavated from an AOEC that is to be reused may be temporarily stockpiled adjacent to the excavation for immediate reuse. Controlled Material excavated from an AOEC that is to be reused at a later date within its originating AOEC or another AOEC with similar contaminants, as determined by the Engineer, must be transported to either WSA #1 located at 141 Robert Loughery Way, New Britain or WSA #2 located underneath I-84 on New Park Avenue, Hartford and properly stockpiled within a designated storage bin at the direction of the WSA Operator. Soil from individual AOECs to be reused must be placed in separate stockpiles unless otherwise directed by the WSA Operator. Controlled Material that is to be reused within its originating AOEC or another AOEC with similar contaminants, as determined by the Engineer, must be reused in accordance with certain restrictions, as described below.

Excess Controlled Material from a soil AOEC that cannot be reused within its originating AOEC or another AOEC with similar contaminants, as determined by the Engineer, must be transported to one of the central WSAs and placed within a designated storage bin for waste characterization by the Engineer.

In addition, forty-six (46) soil LLAOECs exist within the Project limits, where regulated compounds were detected at concentrations below the RSR numeric criteria. The presence of regulated compounds in soil within the LLAOECs will not require material handling measures beyond those required for normal construction operations. Soil excavated within a LLAOEC may be reused at any location within the proposed Project limits with certain restrictions, as described below. Excess or unsuitable soil excavated from a LLAOEC that cannot be reused within the Project limits must be transported to one of the central WSAs and placed within a designated storage bin for waste characterization by the Engineer. Again, the Contractor is required to coordinate all such deliveries to the WSAs with the WSA Operator.

Soils excavated from within the AOECs and LLAOECs are to be reused on-site prior to the use of other soil and/or fill such that the quantity of soil requiring off-site disposal that is generated from the AOECs and LLAOECs is minimized.

To the extent possible, suitable Controlled Material excavated within the soil **AOECs** shall be utilized as fill/backfill within its originating AOEC or another AOEC with similar contaminants, as determined by the Engineer. To the extent possible, suitable material excavated within the **LLAOECs** shall be utilized as fill/backfill at any location within the Project limits.

Controlled Material reused within an AOEC, or LLAOEC soil reused within the Project limits, shall be reused in accordance with the following conditions: (1) such soil is deemed to be structurally suitable for use as fill by the Engineer, (2) such soil is not placed below the water table, and (3) such soil is not placed in an area subject to erosion.

The DEP groundwater classification for the entire project corridor is "GB". Groundwater was encountered during the environmental investigations in several locations within the Project limits. Results of environmental investigations indicate the presence of ETPH, PAHs, VOCs, lead, and arsenic at concentrations exceeding the maximum pollutant concentrations listed in the DEP General Permit for the Discharge of Groundwater Remediation Wastewater Directly to a Surface Water. Contractor Take Note: Groundwater encountered within AOECs 9, 14, 54, and 55 can be discharged to the municipal sanitary sewer following physical treatment for solids removal only. Groundwater encountered within AOEC 20 and AOEC 26 will require both pretreatment of chemical contaminants and pretreatment for

~~solids removal prior to discharge to the municipal sanitary sewer. All pretreatment shall be provided by the Contractor in accordance with direction by the Engineer.~~

~~If groundwater is encountered during construction activities in other areas within the Project limits, the Engineer will visually inspect the groundwater in the field for evidence of contamination. Note: The Engineer shall determine if Handling Contaminated Groundwater is necessary in other areas within the Project limits.~~

~~The Contractor will be required to implement appropriate health and safety measures for all construction activities to be performed within the AOECs. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination, and personnel training. **WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE TO SITE SPECIFIC HAZARDS IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.**~~

~~The Sections which shall be reviewed by the Contractor include, but are not limited to, the following:~~

- ~~• Specification 107 – Environmental Health and Safety~~

~~The Contractor is alerted to the fact that a Department environmental consultant will be on site for excavation and dewatering activities within the AOECs and LLAOECs to collect soil and groundwater samples (if necessary) and to observe site conditions for the State.~~

~~Information pertaining to the results of the environmental investigations discussed can be found in the documents listed via link below. These documents will be available for review at the Office of Contracts, 2800 Berlin Turnpike, Newington, Connecticut.~~

~~<http://www.ct.gov/dot/cwp/view.asp?a=2288&q=462836&PM=1>~~

3.15. NOTICE TO CONTRACTOR – ENVIRONMENTAL INVESTIGATIONS

Soil excavation activities are not anticipated as part of this Contract; however, the Contractor is hereby advised that Department conducted environmental site investigations of the CT *fastrak* corridor that involved the sampling and laboratory analysis of soil and groundwater collected from various locations and depths within the Project limits. Results of the environmental investigations indicate the presence of extractable total petroleum hydrocarbons (ETPH), polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), chlorinated pesticides, lead, arsenic, and mercury at concentrations exceeding the applicable State of Connecticut Department of Energy and Environmental Protection (DEEP) Remediation Standard Regulation (RSR) numeric criteria in soil within the Project limits.

In the event that it becomes necessary to perform any excavation within the CT *fastrak* corridor, the Contractor shall notify the Engineer not less than five (5) days prior to the commencement of said excavation so as to allow for evaluation of the potential for encountering controlled materials (soil and groundwater) that will require special management and/or disposal procedures. **The Contractor shall not be able to initiate any excavation without written authorization from the Engineer.**

Should the excavation be determined to be located in an area containing controlled materials, the Contractor will be required to implement appropriate health and safety measures for all activities. These measures shall include, but are not limited to, air monitoring, engineering controls, personal protective equipment and decontamination, equipment decontamination, and personnel training. **WORKER HEALTH AND SAFETY PROTOCOLS WHICH ADDRESS POTENTIAL AND/OR ACTUAL RISK OF EXPOSURE**

TO SITE SPECIFIC HAZARDS ARE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.

The Contractor is alerted to the fact that a Department environmental consultant will be on site for excavation activities to observe site conditions for the State. **Excavated material shall not be permitted to leave the site without the written authorization of the Engineer and/or environmental consultant.**

Information pertaining to the results of the environmental investigations cited above can be found in the documents listed via link below. These documents will be available for review at the Department of Transportation's Office of Contracts, 2800 Berlin Turnpike, Newington, Connecticut.

<http://www.ct.gov/dot/cwp/view.asp?a=2288&Q=462836&PM=1>

3.16. Department Responsibilities

The Department will be responsible for the following activities:

- Assign a project manager (referred to as the Engineer) who will have the ability to make decisions (and/or designate representatives who will have the authority to make decisions) on behalf of the Department.
- Provide basic infrastructure (power, space, access) required at the BOC facility for installation of the system.
- Participate in and approve the results of all tests.
- Provide timely review, comment and approvals of all requisite documentation as specified in the contract.
- Participate in all scheduled project activities, attend scheduled meetings and promptly respond to new meeting requests, requests for information, technical support or other necessary communication activities.
- Provide information on CT **fastrak** station design character and aesthetic requirements.
- Select a cellular data provider and procure unlimited cellular data accounts as needed, and all required cellular modem cards.
- Act as the owner, as the Contractor obtains all necessary permits, and permissions for any activities requiring outside authorization.
- Facilitate site visits.
- Assist in coordinating logistical arrangements for receipt and acceptance of project related equipment into project facilities.
- Assist in coordinating logistical arrangements for access to vehicles for purposes of equipment installation and testing.
- Assist in the timely acquisition of technical data that is to be provided by others.

- Assist in obtaining any new, changed or updated operational information necessary to the Contractor to configure and initialize the system.
- Assist in the scheduling and co-ordination of staff participating in training sessions as per the agreed training schedule.

4. Proposal Requirements

4.1. Contract Period

The State intends that this contract be in effect for a period of four (4) years commencing on the contract award date with the option to extend for three (3) additional two (2) year terms or parts thereof.

4.2. Motor Carrier Safety Review.

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of "D" or better, on the date of evaluation. In addition, the proposer's driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of "Satisfactory," as defined in 49 CFR section 385.3, as amended.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV, at <http://www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=#49068>. All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at <http://www.ai.volpe.dot.gov/>.

4.3. Pre-Proposal Conference

An optional Pre-Proposal Conference will be held at the Connecticut Department of Transportation Headquarters at 2800 Berlin Turnpike, Newington, CT on October 12, 2012 in Conference Rooms A & B at 9:30 am. Attendance at this conference is not mandatory, however, it is strongly advised. Those interested in attending may contact Aimee Cunningham at aimee.cunningham@ct.gov to indicate attendance and number of company representatives.

A valid photo ID will be required to gain admittance.

4.4. Quantities and/or Usages

These are estimated quantities and/or usages only and in no way represent a commitment and/or intent to purchase. Actual quantities may vary and will be identified on individual purchase orders issued by the requesting state entity.

4.5. Brand Name Specifications and/or References

The use of the name of a manufacturer or of any particular make, model or brand in describing an item does not restrict proposers to that manufacturer or specific article unless limited by the term "no substitute". However, the article being offered must be of such character and quality so that it will serve the purpose for which it is to be used equally as well as that specified, and the proposer shall warrant to the State that it is fit for that purpose. Proposals on comparable items must clearly state the exact article being offered including any and all applicable options and the proposer shall furnish such other information concerning the article being offered as will be helpful in evaluating its acceptability for the purpose intended. If the proposer does not indicate that the article offered is other than as specified, it will be understood that the proposer is offering the article exactly as specified. Proposers must submit complete documentation on the specifications and quality levels of the proposed products. Proposals submitted that do not contain this documentation are subject to rejection.

4.6. Contract Award

The State reserves the right to award this Contract in a manner deemed to be in the best interest of the State and may include, but not be limited to:

- A. by item, group of items, or in its entirety
- B. ~~geographic location to adequately service the entire State of Connecticut in the best possible manner~~
- C. Multiple Vendor Award

4.7. Bonds :

Evidence of Surety - Include evidence from a surety or insurance company stating that the Bidder is capable of obtaining the required insurance and bonds referenced in this RFP. The evidence of surety shall clearly state the financial rating categorization and reference the contract value, in a manner similar to the notation provided below: "As surety for [the above named Contractor], [XYZ Company] with A.M. Best Financial Strength Rating [rating] and Financial Size Category [Size Category] will furnish a \$2,500,000 Performance Bond, a \$2,500,000 Payment Bond and a \$2,500,000 Warrantee Bond in the stated amounts, and said bonds will cover the Project and any warranty periods on behalf of the Contractor, in the event that such firm be the successful bidder and enter into a contract for this project." The minimum A.M. Best rating shall be A- or better.

A. Bid Guarantee

A Bid Bond will be required in the amount of 5% of the total contract price proposal, excluding options. Such bond must accompany the Proposer's RFP submission. Failure to submit a Bid Bond on a form acceptable to the State may result in the rejection of the Proposer's RFP. Other offers of surety will be reviewed on a case by case basis.

1. A Bid Bond must be issued by a fully qualified surety company acceptable to the State and listed as a company currently authorized under 31 CFR, Part 223 as possessing a Certificate of Authority as described thereunder.

2. Rights Reserved

In submitting this Proposal, it is understood and agreed by the Proposer that the right is reserved by The State to reject any and all Proposals, or part of any Proposal, and it is agreed that the Proposal may not be withdrawn for a period of [one hundred eighty (180)] days subsequent to the opening of Proposals, without the written consent of the State.

It is also understood and agreed that if the undersigned Proposer should withdraw any part or all of his Proposal within [one hundred eighty (180)] days after the RFP due date without the written consent of the State, shall refuse or be unable to enter into this Contract, as provided above, or refuse or be unable to furnish adequate and acceptable Performance and Payment Bonds, or refuse or be unable to furnish adequate and acceptable insurance, he shall forfeit his bid security to the extent of the State damages occasioned by such withdrawal, or refusal, or inability to enter into an agreement, or provide adequate security therefor.

It is further understood and agreed that to the extent the defaulting Proposer's Bid Bond, Certified Check, Cashier's Check, Treasurer's Check, and/or Official Bank Check (excluding any income generated thereby which has been retained by the State) shall prove inadequate to fully recompense the State for the damages occasioned by default, then the Proposer agrees to indemnify the State and pay over to the State the difference between the bid security and the State's total damages, so as to make the State whole.

B. Performance Bond

A Performance Bond will be required in the amount of Two Million Five Hundred Thousand Dollars (\$2,500,000.00). Such bond must be received within twenty (20) days of request. Failure to submit a Performance Bond on a form acceptable to the State shall result in the State either re-awarding the contract to the next highest scoring Proposer or re-bidding the contract. Other offers of surety will be reviewed on a case by case basis. It is the responsibility of the Contractor to ensure that its bond is updated as required.

C. Payment Bond

A Payment Bond will be required in the amount of Two Million Five Hundred Thousand Dollars (\$2,500,000.00). Such bond must be received within twenty days of request. Failure to submit a Payment Bond on a form acceptable to State shall result in the State either re-awarding the contract to the next highest scoring Proposer or re-bidding the contract. Other offers of surety will be reviewed on a case by case basis. It is the responsibility of the Contractor to ensure that its bond is updated as required.

D. Warranty Bond:

The Contractor shall, prior to the issuance by the Department of written Final Acceptance, furnish a separate Warranty Bond in a form acceptable to the State in an amount equal to five percent (5%) of the total negotiated contract amount for the initial minimum Technical Support and Warranty Period.

The bond shall secure the Contractor's obligation to provide required technical support and warranty services and replace or repair defective materials and faulty workmanship for a minimum period of two (2) years after issuance of Final Acceptance.

Such bonds shall be:

1. Corporation: The Bond must be signed by an official of the Corporation above his official title and the corporate seal must be affixed over his signature.
2. Firm or Partnership: The Bond must be signed by all the partners and indicate they are "Doing Business As (name of firm)".
3. Individual: The Bond must be signed by the individual owning the business and indicated "Owner".
4. The Surety Company executing the Bond must be licensed to do business in the State of Connecticut, or Bond must be countersigned by a company so licensed.
5. The Bond must be signed by an official of the Surety Company and the corporate seal must be affixed over his signature.
6. Signature of two witnesses for both principal and the Surety must appear on the Bond.

4.8. Stability of Proposed Prices

Any price offerings from proposers must be valid for a period of 180 days from the due date of the proposals.

4.9. Amendment or Cancellation of the RFP

DAS reserves the right to cancel, amend, modify or otherwise change this RFP at any time if it deems it to be in the best interest of the State to do so.

4.10. Proposal Modifications

No additions or changes to any proposal will be allowed after the proposal due date, unless such modification is specifically requested by DAS. DAS, at its option, may seek proposer retraction and/or clarification of any discrepancy or contradiction found during its review of proposals.

4.11. Proposer Presentation of Supporting Evidence

Proposers must be prepared to provide any evidence of experience, performance, ability, and/or financial surety that DAS deems to be necessary or appropriate to fully establish the performance capabilities represented in their proposals.

4.12. Proposer Demonstration of Proposed Services and or Products

At the discretion of DAS, proposers must be able to confirm their ability to provide all proposed services. Any required confirmation must be provided at a site approved by DAS and without cost to the State.

4.13. Erroneous Awards

DAS reserves the right to correct inaccurate awards. This may include, in extreme circumstances, revoking the awarding of a contract already made to a proposer and subsequently awarding the contract to another proposer.

Such action on the part of DAS shall not constitute a breach of contract on the part of DAS since the contract with the initial proposer is deemed to be void and of no effect as if no contract ever existed between DAS and such proposer.

4.14. Proposal Expenses

Proposers are responsible for all costs and expenses incurred in the preparation of proposals and for any subsequent work on the proposal that is required by DAS.

4.15. Ownership of Proposals

All proposals shall become the sole property of the State and will not be returned.

4.16. Ownership of Subsequent Products

Any product, whether acceptable or unacceptable, developed under a contract awarded as a result of this RFP shall be the sole property of the State unless otherwise stated in the contract.

4.17. Internet Disclaimer

Documents and other information obtained through the Internet, World Wide Web sites or other sources are not to be construed as official information for the purposes of conducting other business with the State.

Persons and/or entities that reproduce and/or make such information available by any means are not authorized by the State to do so and may be liable for claims resulting from the dissemination of unofficial, incomplete and/or inaccurate information.

4.18. Cost/Price Analysis

A cost/price analysis and evaluation and/or audit may be performed of the cost proposal in order to determine if the price is fair and reasonable.

4.19. DBE Certification

Pursuant to Title 49, Code of Federal Regulations, part 23.67, a Proposer, as a condition of being authorized to bid this procurement, must certify by completing "DBE APPROVAL CERTIFICATION", that it has on file with the FTA an approved or not disapproved annual DBE subcontracting participation goal. See Exhibit E, Federal Requirements.

The approved DBE subcontracting participation goal for this project is 4% of the total contract cost.

4.20. Interest of Member of, or Delegates to, Congress

No member of, or delegate to, the Congress of the United States will be admitted to any share or part of this Contract or to any benefit arising there from. (41U.S.C.§ 22.)

4.21. Prohibited Interest

No member officer or employee of CTDOT or of a local public body during his tenure or one (1) year thereafter will have any interest, direct or indirect, in this Contract or the proceeds thereof.

4.22. Compliance with CT Gen. Statutes Sections 33-922, 33-636 and 33-953

Prior to the award of any contract, corporations which are incorporated in states other than Connecticut (foreign corporations) must have on file with the Connecticut Secretary of State's Office, an approved Certificate of Authority and corporations incorporated in Connecticut (domestic corporations) must have on file an approved Certificate of Incorporation. All required annual reports for both types of corporations, including the organizational report for domestic corporations must also be on file with the Connecticut Secretary of State's Office. See Conn. General Statutes Sections 33-922, 33-636 and 33-953. Any questions regarding these filing requirements may be directed to the Connecticut Secretary of State's Office at (860) 509-6002. You may also review information on the Secretary of State's Office website at <http://www.sots.ct.gov>.

4.23. Subcontractors

The State must approve any and all subcontractors utilized by the successful proposer prior to any such subcontractor commencing any work. Proposers acknowledge by the act of submitting a proposal that any work provided under the contract is work conducted on behalf of the State and that the Commissioner of DAS or his/her designee may communicate directly with any subcontractor as the State deems to be necessary or appropriate. It is also understood that the successful proposer shall be responsible for all payment of fees charged by the subcontractor(s). A performance evaluation of any subcontractor shall be provided promptly by the successful proposer to the State upon request. The successful proposer must provide the majority of services described in the specifications.

5. SPECIAL PROVISIONS

5.1. Contractor Qualifications

The Contractor and any subcontractors or subconsultants performing the work described in these Contract Documents, howsoever involved in design, supply, installation, integration, testing and training related to the hardware and software components of ITS and Communications System, shall provide references and resumes of staff that shall meet the following requirements:

- All management, construction, installation, and inspection services shall be performed by contractors who have performed the same job function on at least three (3) previously completed ITS and Communications Systems project of similar nature, size and complexity in the last seven (7) years.
- The contractors' on-site personnel shall have expertise for satisfactory design, installation, testing, integration, and training for related ITS and Communications System. These personnel shall have at least two (2) years experience in ITS and Communications System technology and its integration specifically related to the requirements of these Contract Documents. The Contractor shall not use consultants or manufacturer's representatives to meet these requirements.
- All management, design, installation, and inspection services for any fiber optic or related communications equipment shall be performed by contractors' personnel who have successfully provided similar equipment and services for at least five (5) projects in the past ten (10) years. The Contractor shall also be Registered Communications Distribution Designer (RCDD) certified.
- The CAD/AVL Central Software shall have been successfully deployed for a similar system for at least three (3) public transit agencies in the past ten (10) years, where the system monitors at least seven hundred (700) vehicles in maximum service.
- All management, installation, and inspection services related to the CAD/AVL system shall be performed by contractors' personnel who have successfully provided a similar system for at least three (3) public transit agencies in the past five (5) years, where the system monitors at least fifty (50) vehicles in maximum service. Software integration staff must have experience with proposed software code modifications and experience developing automatic interfaces for the proposed software integration.
- All electrical work related to the ITS and Communications Systems shall be performed by E1 licensed electricians in the State of Connecticut. The Contractor shall submit qualifications for licensed electricians.

The Contractor shall identify the role and percentage of contract work assigned to each subcontractor. The Department reserves the right to approve or reject any or all subcontractors.

All personnel changes during the life of the contract shall be submitted to the Connecticut Department of Transportation for review and are subject to prior approval by the Department. Replacement staff must meet or exceed the original contractor qualifications requirements.

5.2. Form 816 / Standard Specifications for Roads, Bridges and Incidental Construction

The State of Connecticut, Department of Transportation, Standard Specifications for Roads, Bridges and Incidental Construction, Form 816, 2004, as revised by the Supplemental Specifications dated July 2011 (also collectively referred to as Form 816) is hereby made part of this contract, as modified by the specifications contained herein.

Form 816 is CTDOT's "Standard Specifications for Roads, Bridges and Incidental Construction". Work is to be in accordance with FORM 816 including all supplements and

other applicable standards. Copies of these Standard Specifications, FORM 816 may be purchased from:

State of Connecticut
Connecticut Department of Transportation
Manager of Contracts
P.O. Box 317546
2800 Berlin Turnpike
Newington, CT 06131-7546.

The price is twenty dollars (\$20.00) if the FORM 816 is mailed and sixteen dollars (\$16.00) if the FORM 816 is picked up. Checks are to be made out to: Treasurer State of Connecticut.

5.3. Wage Rates

PREVAILING WAGES:

This RFP is subject to both State Wage Rates as provided by the Connecticut Department of Labor (DOL) and Federal Wage Rates. Federal Wage rates are detailed in Exhibit F. State Wage rates will be included in an RFP Addendum as soon as they become available. Chapter 558 of the Connecticut General Statutes establishes Connecticut's Labor regulations which contractors must adhere to. The Federal provisions contained herein describe the Federal requirements. All provisions outlined in these regulations will prevail throughout the life of the contract and any extensions thereto, including submission of certified payrolls at the end of each workweek, as noted below. This provision will be strictly enforced by the State.

During the term of the contract, the State will verify that these wage scales are being used, as outlined through Connecticut General Statutes 31-53, effective October 1, 1993. This act mandates certified payrolls and a statement of compliance to be submitted on a weekly basis to ConnDOT. The wage certification form must be included with the bid submission. Vendors are cautioned that utilization of the term "working supervisor" does not exclude the vendor from paying this position less than the actual work being performed by this person as specified in the prevailing wage scales.

The Contractor shall comply with the provisions of CGS § 31-55a, which reads as follows: Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July 1st.

A. Minimum Wage Rates/Wage Regulations

The wages paid to any mechanic, laborer, or workman employed to do the work herein contracted, shall be at a rate equal to the rate of wages customary or prevailing for the same work in the same trade or occupation in which this contract is to be performed. Each employee engaged in work under this contract at the site of the project, in the trade or occupation listed shall not be paid less than the wage rate set in accordance with the DOL's schedule attached hereto.

In the event that it becomes necessary for the Contractor to employ a mechanic, laborer or workman in a trade or occupation for which no minimum wage is set forth, the Contractor must immediately notify the Commissioner of Labor or his designee, who will ascertain the

minimum applicable wage rate from the time of the initial employment of the person affected and during the continuance of such employment.

Every Contractor or Subcontractor performing work for the State is subject to the provisions noted herein and shall post the prevailing wages as determined by the Labor Commissioner in prominent and easily accessible places at the site of work.

Questions regarding state wage regulations should be directed to the DOL – Division of Wage and Workplace Standards; telephone number (860) 263-6790.

Information regarding Federal Wage Rates, including contact information, is available on the following website:

<http://www.dol.gov/compliance/laws/comp-dbra.htm>

Please see **Exhibit F** for more information.

5.4. Contract Time and Liquidated Damages

Six hundred sixteen (616) calendar days will be allowed for the completion of the work on this project and the liquidated damages charge to apply will be Sixteen Thousand Eight Hundred (\$16,800) per each day following the 616th calendar day, with no maximum payment.

In order to minimize the hazard, cost and inconvenience to the traveling public, pollution of the environment and the detriment to the business area it is necessary to limit the time of construction work which interferes with traffic and/or delays the critical commencement of service on CT **fastrak**.

The allowable contract time for this contract was developed assuming extended working hours, five (5), six (6) day and seven (7) day work weeks, except as indicated and restricted by the "Limitations of Operations", and working fifty-two (52) weeks per year, for the length of the contract. To meet the allowable contract time it is expected that the Contractor will be working extended shifts and using premium time simultaneously at multiple project locations, multiple station locations, etc. in order to complete the Contract by the specified completion date. The selected contractor shall demonstrate to the Department that they have the necessary labor force and equipment to meet the allowable contract time. The Contractor can expect that it will be required that temperature sensitive work will be performed during the winter months. Therefore, preparations must be made by the Contractor to protect this work from the cold and adverse conditions that the winter months may bring. There will be no additional compensation paid to the Contractor for this work but it shall be included in the general cost of the work.

The Contractor is hereby advised that this contract contains activities which have been deemed critical to the commencement and/or completion of other Busway construction contracts and the overall program completion. In order to ensure that the Busway is completed on schedule, the Department has established specific milestones for completion of these critical activities. Failure to complete this work within the specified timeframes will result in the assessment of Liquidated Damages as described below. Although the Contractor is responsible for developing its own phasing plan, the Contractor shall comply with the following construction milestones and access constraints:

- **Milestone 1 – Three Hundred Fourteen (314) Calendar Days from NTP**

Completion and Acceptance of System Demonstration Test

The contractor shall complete all elements of the System Demonstration Testing as required in Specification 204 to the satisfaction of the Department.

Liquidated Damages for Late Completion of Milestone 1:

\$3,600 per day for each day following the 314th calendar day with no maximum payment.

- **Additional Access Constraints - Availability of Stations:**

Availability of Stations Being Constructed by Others

The individual Busway Construction Contractors will complete all construction work required to prepare for the installation of ITS devices. This includes completion of all infrastructure, power, platforms or pads, and supports required for installation of the ITS and Communication System components.

- *Access Constraint 1: Construction Contract 1 – March 26, 2014 – New Britain Station*
- *Access Constraint 2: Construction Contract 2 – April 9, 2014 – East Street and East Main Street Stations*
- *Access Constraint 3: Construction Contract 3 – August 8, 2014 – Cedar Street, Newington Junction, Elmwood, New Park, Flatbush, Kane and Sigourney Stations*
- *Access Constraint 4: Construction Contract 4 – April 3, 2014 – Union Station*

- **Access Constraint 5 – July 4, 2014**

Availability of the Busway Operations Center

The contractor shall incorporate into its phasing plan the availability of the Busway Operations Center.

- **Access Constraint 6 – August 15, 2014**

Availability of a Pilot Test Bus for Testing of On-Board Equipment

The contractor shall incorporate into its phasing plan the availability of a Pilot Test Bus required for the on-board equipment pilot test as required in Specification 203 – On-board Equipment Pilot Test.

- **Access Constraint 7 – October 1, 2014**

Availability of Buses

The contractor shall incorporate into its phasing plan the availability of the buses for installation of on-board equipment.

- **Milestone 2 – Five Hundred Seventy-Two (572) Calendar Days from NTP**

Completion and Acceptance of Installation Testing

The contractor shall complete all Installation Testing as required in Specification 205 to the satisfaction of the Department.

Liquidated Damages for Late Completion of Milestone 2:

\$3,400 per day for each day following the 572nd calendar day with no maximum payment.

Liquidated Damages Terms and Conditions

These liquidated damage provisions shall apply to all circumstances in which the Engineer does not verify in writing that the pertinent Contract work has been completed by the Milestone Completion Dates and maximum work durations listed above. If the Contractor does not complete the pertinent work on or before the applicable dates, the Department will deduct from monies otherwise owed to the Contractor the pertinent "Liquidated Damages Daily Amount" listed above for each calendar day that it takes the Contractor to complete said work beyond the Milestone/Maximum Duration Date.

5.5. Purchase Orders and Payments

Purchase Orders

Questions concerning purchase orders are to be directed to CTDOT's Processing Unit at 860-594-2070.

Invoices and Payments

CTDOT's Accounts Payable Unit through the Comptroller's Office will issue Payments. Payment and invoicing inquiries should be directed to CTDOT's Accounts Payable Unit at 860-594-2305.

All invoices must include:

1. Contractor F.E.I.N.
2. Complete Contractor name and billing address.
3. Project number, if applicable.
4. Invoice number and date.
5. Purchase order number.
6. Itemized description of services and/or material supplied.
7. Adjustments, if applicable.
8. Quantity, unit, unit price, and extended amount.
9. Ticket numbers corresponding to each invoice must be listed or attached to the company invoice as a separate sheet, if applicable.
10. Work periods and traffic control prices must be itemized, if applicable.

For prompt payment processing, please mail invoices to the following address:

State of Connecticut
Department of Transportation
Bureau of Finance and Administration
Attn: Accounts Payable SW1A
P.O. Box 317546
Newington, CT 06131-7546

Payments may be delayed if the invoice form is not properly completed in accordance with the instructions noted above.

5.6. Verification of Plan Dimension and Field Measurements

The Contractor is responsible for verifying all dimensions before any work is begun. Dimensions of the existing structures shown on the plans are for general reference only; they are not guaranteed.

The Contractor shall take all field measurements necessary to assure proper fit of the finished work and shall assume full responsibility for their accuracy. When shop drawings and/or working drawings based on field measurements are submitted for

approval and/or review, the field measurements shall also be submitted for reference by the reviewer.

In the field, the Contractor shall examine and verify all existing and given conditions and dimensions with those shown on the plans. If field conditions and dimensions differ from those shown on the plans, the Contractor shall use the field conditions and dimensions and make the appropriate changes to those shown on the plans as approved by the Engineer. All field conditions and dimensions shall be so noted on the drawings submitted for approval.

There shall be no claim made against the Department by the Contractor for work pertaining to modifications required by any difference between actual field conditions and those shown by the details and dimensions on the contract plans. The Contractor will be paid at the unit price bid for the actual quantities of materials used or for the work performed, as indicated by the various items in the contract.

5.7. Storage and Staging Areas

The Contractor's attention is directed to the fact that only limited stockpiling and storage within the project are available for his use. It may be required that the Contractor, according to his means and methods, make arrangements to have available for his use sufficient storage and staging areas outside of the limits of the project.

There shall be no staging and/or storing of material on-site without review and approval by the Department to ensure no environmental impacts.

5.8. Cost/Price Analysis

A cost/price analysis and evaluation and/or audit may be performed of the cost proposal in order to determine if the price proposed is fair and reasonable.

6. Selection Criteria

A selection committee will review and score all proposals. This is a competitively negotiated, best-value procurement. Award will be made to the Proposer who is deemed responsible, possesses the management, financial, and technical capabilities necessary to fulfill the requirements of the contract, whose proposal conforms to the submittal requirements stated herein, and who is judged by an integrated assessment of the general considerations and specific criteria (defined as the Selection Criteria) to be most advantageous to the State, with price and other factors considered.

Prior to evaluating any proposal, the State may take into consideration several general criteria to determine the completeness and responsiveness of the submission. These general considerations include:

- The Proposer has submitted a complete proposal, with all required forms and information as requested by the deadline established by the State.
- The Proposer has agreed to abide by the terms and conditions of the State's typical contract agreement, or has clearly identified proposed exceptions to these terms and conditions in its submittal.
- The Proposer demonstrates sufficient financial stability to undertake a project of this size and scope.
- The Proposer meets any and all Disadvantaged Business Enterprise (DBE) and Affirmative Action requirements specified by the State.
- The Proposer agrees to abide by all Federal, state, and local rules, requirements, and regulations.

The following information, in addition to the requirements identified throughout this RFP Document, will be considered as part of the Selection process **and are listed in order of relative importance.**

1. **Technical Compliance/Quality:** The Proposer has proposed a comprehensive ITS and Communications system solution that, at a minimum, is consistent with the State's functional requirements and operational goals and objectives. The Proposer's proposed system architecture and configuration is reasonable for the intended application.
 - a. *Transit Software & On-Board Equipment Compliance* - The Proposer has clearly identified its base software offerings for CAD/AVL Central Software, AVA Software, APC Software, Traveler Information Software, ~~Fare Management Central Software~~, Bulk Data Gateway Software, Network Management Software, and Cellular Data Communications Gateway Software, and described it in sufficient detail to allow the State to evaluate its appearance and ease of use. Software integration (especially with regard to integration with the existing Scheduling Software) and any add-on modules have also been clearly described. The Proposer has identified any reliance on third party applications or vendors. The Proposer has provided sufficient information on its typical software licensing agreement to allow the State to evaluate any limitations, restrictions, and/or exceptions. The Proposer has also provided sufficiently detailed information on its proposed on-board equipment, including: Mobile Data Computers (MDCs), with built-in Mobile Data Terminals (MDTs), Vehicle Logic Units (VLUs) and GPS receivers; APCs; AVA Controllers; On-board VMSs; MCGRs; to allow the State to properly assess the equipments' compliance with technical requirements and equipment quality. The Proposer has also provided sufficiently detailed information on its non-revenue vehicle equipment. Technical compliance matrices have been provided to assist the Proposer in demonstrating how its proposed solution meets system requirements.
 - ~~b. *AFC Equipment Compliance* - The Proposer has clearly identified its proposed equipment offerings for Automatic Fare Collection (AFC) including detailed information on TVMs, Ticket Validators, and Mobile Enforcement Devices. The~~

Proposer has included sufficient information to describe how passengers would interact with the AFC equipment, including detailed screenshots of the TVM user interface. The Proposer has also identified operationally how the AFC equipment would be administered and maintained, including stock requirements. The Proposer has clearly identified how the AFC equipment provides for future flexibility, including compatibility with existing magnetic stripe card technology, and provisions for future smart card and open fare payment system technologies. Technical compliance matrices have been provided to assist the Proposer in demonstrating how its proposed solution meets system requirements.

- c. *Other ITS Equipment and Software Compliance* - The Proposer has clearly identified its proposed equipment and software offerings for Variable Message Signs, CCTV cameras, CCTV Camera Management Software, Traveler Information System Controllers, Emergency Callboxes, Emergency Callbox Management Software, PA Systems, and Uninterruptable Power Supplies. The Proposer has included sufficient information to allow the State to assess the proposed equipments' compliance with the technical specifications. Screenshots and detailed descriptions of the CCTV Camera Management Software have been provided. The Proposer has described operationally how the functionality of the proposed CCTV Camera Management Software may be used in both typical and emergency situations.
- d. *Communications System Compliance* - The Proposer has proposed a comprehensive communications system solution in sufficient detail to allow the State to assess its reasonableness and completeness. The Proposer has provided detailed information on proposed communications system equipment, including all fiber optic cables, Cat6 Copper Patch cables, media converters, patch panels, splice enclosures, Ethernet switches, and modular chassis switch to allow the State to verify compliance with system requirements. The Proposer has proposed a detailed fiber optic network architecture indicating how video and data communications will be handled on a station-by-station basis.
- e. *Work Plan and Schedule* - The Proposer has submitted a detailed work plan and schedule that describes exactly how the project work will be completed prior to required project completion dates. The proposed work plan should be aggressive, but achievable, for proper system implementation. The Proposer has clearly and comprehensively identified project tasking and sequential dependencies; the Proposer has allocated sufficient level of resources to accomplish the work in the time proposed; the Proposer has factored in sufficient time for State reviews and approvals; and the Proposer has allocated sufficient time and resources for system testing and training.
- f. *BOC Equipment Compliance* - The Proposer has clearly identified its proposed equipment offerings for servers, racks, firewalls, network video recorders, Uninterruptable Power Supplies, Video Display Processors, Video Monitors, Workstations, and Workstation Monitors. The Proposer has provided sufficient detailed information to allow the State to assess how well the equipment meets system requirements.
- g. *QA/QC Plan* – The Proposer has submitted a Quality Assurance/Quality Control Plan with test procedures and control measures that are consistent with the State's objectives and the project specifications. The QA/QC Plan describes project management approach, including a description of problem areas considered most critical by the Proposer and recommended strategies for minimizing project risks.

2. **Cost/Prices:** Price proposals will only be evaluated for those Proposers whose technical submittal has been deemed to be complete and acceptable by the State. Price Proposals will be evaluated following completion of technical evaluations to avoid having prices unduly influence the evaluation process. All price information should be included in the Proposer's Price Proposal. No price information should be included as part of its technical submission. Price proposals will be evaluated for reasonableness,

realism, and completeness. An editable price proposal template will be provided to the Proposers to assist in this submittal.

- a. *Software Prices* – The Proposer has provided detailed price information for all of its software offerings, including ongoing annual licensing costs for the initial technical support period and beyond. The Proposer has included pricing for all required third party software applications. The Proposer has clearly differentiated between its software base offering and its optional add-on modules and the price of each.
- b. *ITS Equipment Prices* - The Proposer has provided detailed price information for all ITS Equipment offerings, including on-board ITS equipment, BOC ITS equipment, and ITS equipment installed along the CT **fastrak** guideway. The Proposer has included, for each item, detailed information for materials costs, labor costs, and equipment costs. Spare parts information for each item has also been included.
- c. *Communications System Prices* - The Proposer has provided detailed price information for all Communications System offerings, including all fiber optic cabling, Ethernet cabling, Ethernet switches, media converters, splice enclosures, patch panels, and modular chassis switches installed at the BOC and along the CT **fastrak** guideway. The Proposer has included, for each item, detailed information for materials costs, labor costs, and equipment costs. Spare parts information for each item has also been included.
- d. *Labor Rates* - The Proposer has provided labor rates for detailed personnel categories, as well as an annual escalation rate cap for these labor rates. The proposed labor rates are reasonable and consistent with Connecticut labor practices.
- e. *Technical Support Costs* - The Proposer has provided ongoing annual technical support costs for the mandatory technical support period following Final Acceptance of the system by the State.
- f. *Options Prices* - The Proposer has provided pricing information for all options requested as part of this RFP. Options pricing is reasonable and realistic.

3. Qualifications/Experience: The Proposer has demonstrated that it has past experience carrying out work of similar size and scope and is qualified to undertake this effort.

- a. *Transit ITS Experience* - The Proposer has demonstrated that it has completed similar transit ITS work for public agencies, including transit authorities with large vehicle fleets. Work is similar if the functions, responsibilities, and control exercised by the Proposer were essentially the same as required under this RFP. Past transit work must include implementation of CAD/AVL systems, traveler information systems, proof-of-payment AFC systems, and safety and security systems. The Proposer adequately describes how past transit ITS work is similar in terms of scope, size, and overall project cost. Past work was satisfactorily completed on time and within budget.
- b. *Fiber Communications Experience* - The Proposer has demonstrated that it has completed similar fiber-optic communications work for public agencies. Work is similar if the functions, responsibilities, and control exercised by the Proposer were essentially the same as required under this RFP. Past fiber communications work must include implementation of fiber optic networks over 10 miles long. The Proposer adequately describes how past fiber communications work is similar in terms of scope, size, and overall project cost. Past work was satisfactorily completed on time and within budget.

4. Personnel: The State will consider the experience and expertise of the key project staff proposed by the Proposer to accomplish project work. The Proposer demonstrates that key personnel have successfully completed similar projects and possess the education, experience, qualifications, certifications, and skills required to carry out all of the services described herein.

- a. *Management Staff* – The Proposer has provided sufficient information to demonstrate that the management staff has past experience managing projects of this size and scope and has successfully completed similar projects under similar time constraints.
 - b. *Technical Staff* - The Proposer has provided sufficient information to demonstrate that the proposed technical staff has past experience in implementing transit ITS applications (both in the field and on-board transit vehicles), as well as fiber optic communications networks.
 - c. *Certified Personnel* - - The Proposer has provided sufficient information to demonstrate that the proposed staff has the requisite certifications to perform this work, especially with regards to fiber optic installation, electricians, structural engineers, etc.

5. **Business History:** The State will consider the business history of the Proposer as part of its evaluation process. The Proposer has provided sufficient financial information to demonstrate that the Proposer is financially stable and capable of undertaking this work. The Proposer does not have a history of claims made against it. The Proposer does not have a history with the State of failing to deliver projects on time and within budget.
 - a. *Prime Contractor* – The Prime Contractor has demonstrated a stable business history and has a proven track record of successful project delivery.
 - b. *Sub-Contractors* - The Sub Contractors, if any, have demonstrated stable business histories and have a proven track record of successful project delivery.

6. **References:** The State will consider references as part of its evaluation process. References should be provided for both public sector and private sector work. The Proposer has provided sufficient references to meet the Contractor Qualifications identified in this RFP. References must include the name, title, phone number, and email address of the contact person directly responsible for overseeing or managing the work on behalf of the organization for which the work was performed. References must also clearly identify the type of work performed, the contractor and/or sub-contractors who performed the work, the size and cost of the work, and specific personnel who worked on the project.
 - a. *Services Provided for Public Agencies* – References provided for all recent public agency projects provide a positive assessment of the Proposer's performance. The Proposer's past performance on similar contracts was satisfactory or better. In order to be considered satisfactory, the Proposer must have completed work on time and within budget.
 - b. *Services Provided for Private Sector*– References provided for all recent private sector projects provide a positive assessment of the Proposer's performance. The Proposer's past performance on similar contracts was satisfactory or better. In order to be considered satisfactory, the Proposer must have completed work on time and within budget.

7. **Added Value/Innovation:** The State will also consider the innovations and value-added features proposed by each Proposer. Proposers that demonstrate enhanced system functionality, particularly in terms of ease-of-use and ease-of-maintenance, or provide added value at no additional cost to the State, or identify potential cost savings to the State, will receive positive consideration.

8. **Interviews/Demonstrations (if any):** If the State determines to hold interviews and system demonstrations with shortlisted Proposers, the State will consider the findings of these interviews/demonstrations. Proposers shall be evaluated on how well they address the State's questions and concerns, the level of professionalism and project

insight demonstrated during both the interview and the demonstration, and the appearance and functionality of their software demonstrations.

7. Instructions to Proposers

7.1. Proposal Schedule

Release of RFP:	Date: September 28, 2012
Pre-Proposal Conference:	Date: October 12, 2012 at 9:30 am
Receipt of Questions: by noon	Date: November 8 November 13, 2012,
Answers to Questions posted as Addendum:	Date: November 20, 2012
Proposal Due Date:	Date: December 13, 2012, by 2:00 pm

During the period from your organization's receipt of this Request for Proposals, and until a contract is awarded, your organization shall not contact any employee of the State of Connecticut for additional information, except in writing, directed to: the Department of Administrative Services, Attn.: Aimee Cunningham, Procurement Services, 165 Capitol Avenue, 5th Floor South, Hartford, CT 06106 or email aimee.cunningham@ct.gov

7.2. Pre-Proposal Conference

A Pre-Proposal Conference will be held at the Connecticut Department of Transportation Headquarters at 2800 Berlin Turnpike, Newington, CT on October 12, 2012 at Conference Rooms A & B at 9:30 AM. Attendance at this conference is not mandatory, but is strongly advised. Those interested in attending may contact Aimee Cunningham at aimee.cunningham@ct.gov to indicate attendance and number of company representatives.

A valid photo ID will be required to gain admittance.

7.3. Questions

Questions for the purpose of clarifying the RFP must be submitted in writing and must be received in Procurement Services no later than noon on **November 8, 2012**, in the State of Connecticut.

Questions must be delivered to:
Department of Administrative Services
Attn.: Aimee Cunningham
(RFP 12PSX0323)
165 Capitol Avenue, 5th Floor South
Hartford, CT 06106

or emailed to email address: aimee.cunningham@ct.gov

7.4. Solicitation Submission

Solicitations shall be submitted online by the Proposal due date and time only. Proposers must upload their solicitation submission to their BizNet Account. Any material that is not submitted online with your company's solicitation submission shall not be accepted under any circumstances. No documentation shall be submitted by hard copy, fax or email.

The State reserves the right to cancel this solicitation at any time prior to execution of the Contract by all parties and without any liability against the State.

7.5. System Demonstrations and Interviews

Based on the evaluation of the proposals, the State reserves the right to request Proposers to provide a demonstration of their system software solution and be interviewed. Proposer interviews and system demonstrations will be held at the Connecticut Department of Transportation Headquarters. If selected for an interview, Proposers will be notified with the date, time, and location of the interviews at least one (1) week prior. The State will also provide a consistent set of questions to respond to during the interviews and a list of software functionality to be demonstrated. Each selected Proposer will be allocated the same amount of time to demonstrate their proposed system solution. Upon receipt of interview information, Proposers should contact Aimee Cunningham at aimee.cunningham@ct.gov to indicate attendance and size of team attending the interview.

8. Submittal Requirements

8.1. Proposal Format

Proposers shall submit separately, **via upload to their BizNet Account**, the following items:

- Transmittal Letter
- Technical Proposal
- Price Proposal

Please ensure that all price information is included solely in the Price Proposal submission. No pricing information should be included in the Technical Proposal.

8.2. Transmittal Letter Format

The Proposer's submission shall include a transmittal letter showing the Proposer's name, post office address, telephone number, fax number, and name, title, telephone number, email address, and signature of the person submitting the proposal. This person identified in the cover letter will be considered by the State as the contact person for the Proposer. The transmittal letter should also clearly identify the prime contractor and any and all sub-contractors and sub-consultants, as well as proposed teaming arrangements.

8.3. Technical Proposal Format

Proposers shall submit **Technical Proposals** organized as presented in the outline below. Accuracy and completeness are essential. Technical Proposals must address all of the requirements of this RFP and provide a complete and concise description of how the Proposer will perform the required project work. Technical Proposals shall be typewritten in English in minimum 12 point font with all pages clearly numbered. Proposers should provide all requested information in as concise a manner as possible. Any marketing/brochure type information should be provided separately from your Technical Proposal response answers.

Proposal Outline

Part 1 - Proposer's Background

Proposers shall provide background information on the Proposer's principal business(es), areas of practice, company size and structure, firm ownership, etc. Proposers shall also identify any subcontractors, vendors, or third party participants as part of their proposed project team and provide similar background information for them. Proposers shall also provide financial information as an appendix to the Technical Proposal.

Part 2 – Qualifications/Experience

Proposers shall describe project qualifications and experience relevant to the functional requirements described in this RFP and accompanying technical specifications. Relevant qualifications and experience should include the project client, project scope, project budget, and timeframe over which services were provided to specific clients. Sufficient information on project tasking should be included so that the State may compare the Proposers' experience in relation to the Scope of Services identified in this document. In particular, Proposers should highlight project experience working with the State and/or other public agencies.

Part 3 – References

Proposers shall provide the minimum number of references for similar projects required to demonstrate compliance with the Contractor Requirements identified in Section 5.1 of this

RFP document. Proposers shall indicate the client name, contact person, contact person's title, client address, telephone number, email address, and the role of the contact person in the referenced work. Detailed information on the work referenced shall also be provided.

Part 4 – Proposed Solution

Proposers shall provide a detailed description of their proposed system solution. Items to be addressed shall include:

- A brief overview of the proposed ITS and Communications solution summarizing proposed system operation and processes.
- A description of all proposed system software. Software integration shall be described in detail. Screenshots and descriptions shall be sufficient to provide the State with the “look and feel” of the proposed software. Proposers shall identify any additional third party software licenses that shall be needed. Proposers shall clearly describe system modules, features, and functionality. Additionally, Proposers shall clearly differentiate between their base offering and any additional add-on modules. Proposers shall also clearly identify and explain any restrictions, limitations, or exceptions to its ability to provide software licenses. Do not include any pricing information as part of the Technical Proposal. A sample copy of the Proposers’ typical software licensing agreement(s), with all pricing information removed, should be included as an appendix to the Technical Proposal.
- Specification of all required ITS Equipment. Specific makes and models of each equipment item shall be provided. Detailed product datasheets shall be provided as an appendix to the Technical Proposal. Where the product datasheet is insufficient to demonstrate compliance with technical specifications, the Proposer shall provide additional description and information.
- A description of the proposed system architecture and configuration. The Proposer shall include diagrams of how the field ITS equipment shall be connected, and how the fiber optic communications network shall be configured. The Proposer shall describe how on-board ITS equipment shall be installed for each of the proposed vehicle types.
- Discussion of how the proposed system meets the functional requirements as specified herein. In addition to providing a general discussion of system compliance, Proposers shall complete the functional requirements compliance matrix and include it as an appendix to the Technical Proposal. As part of this best-value procurement, Proposers shall be evaluated based on a combination of criteria, including system functionality and cost. Proposers should also take special consideration to complete the functional requirements compliance matrix as completely as possible, providing coherent and comprehensive notes where applicable. Proposers should indicate whenever possible, not just whether they comply, but how they comply. Vague, incomplete, or blanket statements of system compliance will be reflected in the evaluation of the proposal. Proposers should also clearly identify areas of either conditional compliance or non-compliance. Failure by the Proposer to identify areas of non-compliance or exceptions to any of the specification requirements shall be interpreted by the Department as a statement affirming compliance with said specifications compliance.
- A description of proposed maintenance and technical support capabilities and activities. Proposers should include information regarding: on-site and remote support capabilities and response times, proposed approach for handling software updates and patches, preventive maintenance procedures, response times for equipment maintenance, and ongoing training activities.

Part 5 – Project Approach

Proposers shall describe their proposed project approach. Items to be addressed shall include:

- A description of their proposed Project Management processes. Proposers shall describe their typical procedures to ensure timely and accurate communication of information, as well as control measures to be implemented to ensure project completion on time and under budget. Proposers shall also identify any expected requirements for, or dependencies on, third parties or State personnel or resources.
- A description of proposed Quality Control/Quality Assurance Plan.
- A description of proposed system design templates and testing. Proposers shall describe their recommended approach for receiving the State approval of design templates and ensuring that the system is configured and implemented in accordance with the State operational needs. Proposers should provide sample test reports.
- A description of proposed system training. Proposers shall provide sample training materials and demonstrate their familiarity with training best practices.
- A description of proposed system documentation. Proposers shall describe their documentation process and provide samples of user documentation.
- Proposers shall provide a concise presentation of their understanding of the major issues facing the State in implementing the Scope of Services defined in this RFP. Proposers shall highlight particular difficulties that may be faced in implementing the work and management or operational decisions that will need to be made during the contract. In particular, the Proposer should identify areas of potential risk and its proposed strategies for mitigating risk to the project.

Part 6 – Work Plan and Schedule

Proposers shall provide a work plan and preliminary schedule for accomplishing the work proposed. Proposers should include a clear, concise narrative incorporating Gantt charts or equivalent tables that documents work plan responsibilities, the duration of each task, proposed implementation milestones, and sufficient time for the State reviews, approvals, and testing. Proposers should develop a relative timetable based on a Notice to Proceed (NTP). Proposers shall be held to their proposed schedule in any contract that is subsequently executed.

Part 7 – Key Project Staff

Proposers shall provide information on the key project staff proposed for this work. Proposers shall include an organizational chart clearly showing project roles and responsibilities. Proposers shall identify the key contact person for this project, and include his/her name, title, telephone number, and email address. Biographies and qualifications for each staff member; including experience, education, certifications, and relevant credentialing; shall be presented. Proposed staff must be able to pass background checks in order to meet the State security clearance requirements. Resumes of key staff can be included as an appendix to the Technical Proposal.

Part 8 – Innovation and Value-Added

Proposers shall use this section to highlight innovation or value-added features that may distinguish their solution from their competitors'. In particular, the Proposer should include information on special functionality that can be provided at no additional cost, or opportunities for additional cost savings to the State.

Appendix A: Sample Software Licensing Agreement

Proposers shall include a sample of their proposed software licensing agreement. No pricing information should be included as part of this appendix.

Appendix B: Technical Compliance Matrices

Proposers shall include their completed technical compliance matrix. Again, it is emphasized that the compliance matrix should demonstrate how the system is compliant,

not just state compliance. Failure to demonstrate compliance will be reflected in the evaluation of the proposal.

Appendix C: Product Datasheets

Proposers shall include sample product datasheets for their proposed software and ITS equipment offerings.

Appendix D: Key Staff Resumes

Proposers shall include brief resumes for key proposed staff, including relevant certifications.

Appendix E: Firm Financial Information

Proposers shall separately include financial information for the prime contractor, including audited annual income statements for the last two years available (this information will only be reviewed by the voting evaluation committee members.)

8.4. Price Proposal Format

Proposers shall submit **Price Proposals** separate from their Technical Proposals. No pricing information should be included as part of the technical proposal. Proposers shall utilize the editable price proposal template provided to them. Proposers shall provide complete cost information for all requested items, including all specified options. Proposers shall add detailed notes describing all price assumptions for materials, labor, and specialized equipment rentals. Incomplete or unclear price information will be reflected in the evaluation of the proposal. Additional pricing information, such as pricing for unsolicited value-added options and information on unit economies of scale, can be included as an appendix to the price proposal submission.

9. CONTRACT

This RFP is not a contract and, alone, shall not be interpreted as such. Rather, this RFP only serves as the instrument through which proposals are solicited. The state will pursue negotiations with the highest scoring proposal. If, for some reason, DAS and the initial proposer fail to reach consensus on the issues relative to a contract, then DAS may commence contract negotiations with other proposers. DAS may decide at any time to start the RFP process again.

Thereafter, Proposers will be required to sign a formal contract as identified in "Contract". The contract may include a liquidated damages clause at the discretion of the State.