This Statement of Work, along with the other material provided in this IFB, will provide Bidders with the information needed to understand the background, Commonwealth requirements, and the operational, business and technical objectives for this project.

**Background**

This section provides a high level overview of the Pennsylvania Department of Transportation (PennDOT) and a brief description of the roles and responsibilities of the organizations within PennDOT receiving the described services as a result of this IFB.

PennDOT provides services for Pennsylvania’s multi-modal transportation network including:

- 39,843 miles of PennDOT-owned highways;
- 25,000 PennDOT-owned bridges;
- 1,758 miles of interstate highways and 749 miles of freeways and expressways which carry over 93 million daily vehicle miles of travel;
- 38 urban and rural fixed-route transit systems which carry over 400 million passengers each year;
- 65 operating railroads with more than 6,000 track miles; and
- 15 commercial aviation facilities with over 24 million travelers each year.

PennDOT Central Office is headquartered at 400 North Street in Harrisburg, Pennsylvania. To better manage Pennsylvania’s extensive transportation network, PennDOT also operates 11 regional Engineering Districts (“District” or “D [Engineering District Number]”).

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<th>OFFICE</th>
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**PennDOT ITS Operations**

PennDOT has been at the forefront of Intelligent Transportation Systems (ITS) deployments since 1990. During this time, there have been several installations of Advanced Traffic Management System (ATMS) software packages and vendor provided software for the command and control of ITS field devices. ITS field devices primarily consist of Dynamic Message Signs (DMS), Highway Advisory Radio (HAR), Closed Circuit TV cameras (CCTV) and traffic detectors. Multiple stand-alone systems also fall into the realm of ITS, such as Road...
Weather Information Systems (RWIS), bridge de-icing, advanced warning systems, and travel time systems.

PennDOT currently operates and maintains over 350 DMS, over 80 HARs, and over 650 CCTV statewide, over 550 traffic detectors in D 6-0 and D 11-0, travel time systems in D 6-0 and D 11-0, and various other subsystems statewide. Approximately 500 new devices are intended to be installed statewide over the next two years.

**PennDOT Central Office**

Descriptions of the Central Office areas to be closely involved in the implementation of this project and their anticipated roles in this project are included below:

**Bureau of Maintenance and Operations (BOMO)**

Within Central Office, the BOMO is responsible for statewide coordination and management of crash reporting, highway safety, traffic engineering, and ITS operations. Within the BOMO, the Traffic Operations Section is responsible for the traveler information program including the 511PA program, the ITS equipment inventory, Commonwealth funding for ITS maintenance, ITS software applications, and the coordination and procedures among the Traffic Management Centers (TMCs) located in the Districts.

For this project, the Traffic Operations Section will provide the business leadership to ensure that the 511PA service meets the needs of the traffic management community and users throughout Pennsylvania.

**Bureau of Public Transportation (BPT)**

Within Central Office, the BPT provides leadership, funding & technical assistance to transportation providers statewide to promote efficient, effective mobility options. The BPT is responsible for oversight of funding and agency coordination to ensure customer needs are being met.

For this project, the BPT will provide oversight to ensure that the 511PA service meets the needs of the transit community and users throughout Pennsylvania.

**Bureau of Business Solutions and Services (BBSS)**

Within Central Office, the BBSS provides business application development and support services for existing and planned applications. In addition, the BBSS provides extended services in the areas of Data Administration, Quality Assurance Strategy/Processes, End-to-End Tracking, Enterprise Architecture and Systems Integration. The BBSS provides specialized services that support all application development teams, including Data Administration, Business Reporting Solutions, Quality Assurance, Enterprise Architecture, Framework Support, and Imaging and Workflow.

For this project, the BBSS will provide technical oversight of and application maintenance support for any of the custom components that are not the responsibility of the vendor.
Bureau of Infrastructure and Operations (BIO)

The mission of the BIO is to provide support for all components of an information technology network that are needed to support the business requirements of PennDOT. The BIO ensures compliance with Commonwealth policies and ensures interagency requirements are fulfilled.

The main responsibilities of the BIO are to:

1) Provide overall direction, support, and management of PennDOT’s Server Farm and the client/server infrastructure located throughout PennDOT including server hardware and software; networking devices such as routers and switches; and Personal Computers.

2) Manage the enterprise server (Mainframe) operations provided through the Office of Administration’s purchase order with the Data Powerhouse, and the high production data print center.

3) Coordinate customer service activities including help desk calls, problem management, service requests, change management, and asset management.

For this project, the BIO will provide technical oversight of the underlying systems supporting the 511PA program.

Project Management Office (PMO)

Within Central Office, the Project Management Office (PMO) supports PennDOT’s efforts to successfully complete the numerous projects in its IT portfolio. The PMO also promotes consistency, uniformity and continual improvement in project management within PennDOT, supports communication to stakeholders, and assists with issue/change/risk management and capacity planning for PennDOT resources.

For this project, PennDOT has assigned a PMO Project Manager to provide oversight, monitoring, and verification of all project activities.

Central Press Office

Within Central Office, the Central Press Office directs communications about the 511PA system through department channels and with media partners. Marketing initiatives, from conceptualization to execution, are reviewed and approved in coordination with the 511 project team.

PennDOT Engineering Districts

Central Office provides leadership and guidance for statewide coordination of PennDOT’s Districts, but it is ultimately each District’s responsibility to manage and operate the transportation system infrastructure within its boundaries. In general and in the context of this project, the Districts are responsible for:

- Incident and Event Management – PennDOT Districts manage both unplanned and planned events in an effort to minimize adverse impacts on the transportation network and to improve traveler safety. This is accomplished by utilizing various surveillance
devices and coordinating with regional traffic and emergency management agencies during incidents/events.

PennDOT has developed a web-based Geographical Information System (GIS) application to improve road condition (e.g., lane restrictions, full closures and roadway surface conditions) information dissemination to the public and other stakeholders. PennDOT refers to this system as the Road Condition Reporting System (RCRS) which is a standard statewide tool used by all PennDOT Engineering Districts to ensure consistency and accuracy when reporting road condition information on PennDOT maintained roadways. Event information from RCRS provides the foundational content for 511PA.

- **Traffic Information Dissemination** – PennDOT Districts provide information to travelers using roadway equipment such as dynamic message signs (DMS) and highway advisory radio (HAR). A wide range of information is disseminated, including but not limited to, traffic and road conditions, closure and detour information, incident information, emergency alerts, driver advisories, and travel times (D 6-0 and D 11-0).

PennDOT Districts also share traffic information with other regional transportation stakeholder agencies. PennDOT is currently sharing traffic information with 911 Communication Centers, attractions and event promoters, County Emergency Management Agencies (EMA), Information Service Providers, municipalities, the Pennsylvania State Police (PSP), the Pennsylvania Turnpike Commission (PTC), regional media outlets, regional transit agencies, universities and adjacent states.

- **AMBER Alerts** – PennDOT coordinates with PSP and other responsible agencies during AMBER Alerts.

- **Traveler Information** – Provides traveler information through its statewide network of DMS and HAR systems, as well as the statewide 511PA service. DMS and HAR provide targeted information to motorists while en-route to their destination. 511PA provides telephone and internet-based information including but not limited to, traffic conditions, live traffic camera images, highway construction updates, winter road conditions, weather alerts, and transit/multi-modal services. 511PA gives travelers reliable information to help them make smart decisions, plan their trips accordingly and minimize travel delays. Typically, the involvement of PennDOT Districts with 511PA is limited to entry of website ticker alerts/IVR Floodgate messages.

- **Roadway Maintenance and Construction** – PennDOT is responsible for scheduled and unscheduled maintenance and construction services on PennDOT maintained roadways. Maintenance services include but aren’t limited to, hazard removal (e.g., roadway debris and road-killed animals), routine maintenance activities, and repair and maintenance of both ITS and non-ITS equipment.

- **Winter Maintenance** – PennDOT Districts are responsible for winter road maintenance, including but not limited to, snow plow operations, roadway treatments (e.g., salt spraying and other anti-icing material applications), and additional snow and ice control activities. RWIS and other sources are used to monitor environmental conditions.
• Work Zone Management – PennDOT Districts manage work zones, controlling traffic in areas of the roadway where maintenance, construction, and utility work are underway. Work zone information is also coordinated with other agencies including the PSP, PTC, local municipalities, and other traffic and emergency management agencies.

To perform these functions, PennDOT Districts work together with other transportation and emergency management agencies. Communications between agencies are typically conducted by telephone and e-mail. In general, agencies that coordinate with PennDOT Districts include, but are not limited to:

• 911 Communication Centers;
• Adjacent State Transportation Agencies;
• County EMA Centers;
• Information Service Providers;
• Local Police, Fire, and Emergency Management Services;
• Municipal Traffic Management Offices;
• Pennsylvania State Police;
• Pennsylvania Turnpike Commission;
• Regional Media Outlets;
• Regional Transit Agencies; and
• Towing Industry Responders.

Traffic Management Centers (TMCs)

The Traffic Management Center (TMC) is the centerpiece of ITS operations in the Districts. It serves as the hub of the transportation management system where information about PennDOT roadways is collected and combined with other operational and control data in order to manage the transportation network. Currently, each PennDOT District contains a TMC, except for Districts 3-0 and 12-0. PennDOT TMCs range in size and sophistication from a single workstation in a District office to an entire room or facility dedicated to operations. Urban, suburban, and rural environments each face different transportation problems. As a result, the Districts have developed customized TMCs to meet their individual needs.

PennDOT maintains three (3) 24/7 Regional Traffic Management Centers (RTMCs). The RTMCs reside in Districts 6-0 (Eastern RTMC), 8-0 (Central RTMC), and 11-0 (Western RTMC). The RTMCs provide operational coverage for member TMCs, including ITS device operations and RCRS entry and management.

The map of Pennsylvania below pinpoints the three (3) 24/7 RTMCs currently in use by PennDOT.
1. Objectives.

511 Pennsylvania (511PA) is the name of PennDOT’s ongoing project to deliver a statewide Traveler Information Service to motorists in Pennsylvania. Beginning in 2008, PennDOT worked with a competitively procured vendor to develop, deploy, host, operate and maintain the statewide traveler information service entitled “511PA”. 511PA was officially launched for public use on September 4, 2009. The components of this service include both public and mobile websites, an interactive voice response (IVR) telephone system, and subscription-based travel alerts service. The current contract for this service expires on November 5, 2013, but has been extended for a period of three months through midnight on February 6, 2014.

511PA is a free service which provides users with information on travel delays, weather forecasts and alerts, transit options, and other services. The vendor-hosted system is available 24-hours-per-day, seven (7) days a week and is accessible by dialing 511 from any telephone or by visiting 511PA.com. Users can also register through the 511PA website to receive personalized traveler alerts, provided through email and text messaging.

The information provided through 511PA is compiled in real time from various public sources including PennDOT’s RCRS, the National Weather Service, and the PTC.

511PA also provides PennDOT with the ability to manually post customized alert messages on the website (ticker alerts) and/or IVR (floodgates). This capability has proven to be a very useful tool to support emergency transportation operations (ETO) and other circumstances when specific detailed information is deemed necessary.
Currently, the 511PA roadway network includes all interstates, including the Pennsylvania Turnpike, as well as other major roadways throughout Pennsylvania. Travel information for the majority of this network includes incident reports such as crashes, construction activities and winter road conditions. Information collected through routine traffic operations and compiled in RCRS is the foundation of 511PA. It is the responsibility of each District to ensure situational awareness is maintained at all times and incident information is entered into RCRS accurately and in a timely manner.

2. **Nature and Scope of the Project.**

The primary objective of this IFB is to select an Offeror to provide services including, but not limited to, design, develop, implement, and provide a fully hosted 511PA traveler information service. The telephone service, website, and traveler alert service must be fully functional and operational no later than 11:59 p.m., February 5, 2014. The mobile application must be accepted and approved by PennDOT and fully functional and operational no later than 12:00 AM, May 1st, 2014.

The successful Bidder will design, develop, implement, test, and operate a fully hosted statewide 511PA traveler information service, consisting of a telephone service, a website, a personalized traveler alert service, and a hands-free, eyes-free mobile application, as outlined in this statement of work.

The list below identifies, at a high level, the tasks and deliverables for this project:

A. 511PA Work Plan
   A.1 511PA Work Plan

B. 511PA Service Implementation
   B.1 511PA Telephone Service Implementation
   B.2 511PA Website Implementation
   B.3 511PA Traveler Alert Service Implementation
   B.4 511PA Mobile Application Implementation

C. 511PA Service Monthly Operations and Support
   C.1 Telephone Service Monthly Operations and Support
   C.2 Website Monthly Operations and Support
   C.3 Traveler Alert Service Monthly Operations and Support
   C.4 Mobile Application Monthly Operations and Support
   C.5 Speed Data service

D. 511 Service Enhancements
   D.1 511 Service Enhancements

Details for each task and deliverable are outlined in **Section 4 - Tasks** of this Statement of Work.
For additional information about the nature and scope of the project, Bidders are also referred to additional documentation contained in the appendices of this IFB, which are incorporated herein by reference as a material part of this IFB:

- **Appendix A – 511PA Data Source Guide** – The purpose of the Data Source Guide is to provide a detailed overview of all data sources that has been used to form the content of the current 511PA service.

- **Appendix B – 511PA Roadway Network** – This map and table depicts the roadway network on which the 511PA system currently reports.

- **Appendix C – 511PA Service Level Agreement** – This document formally defines the levels of service expected from the successful Bidder and the remedies for non-performance.

- **Appendix D – 511PA Telephone Carrier Agreement Tracking Log** – This is a list of all wireless and landline telephone carriers that PennDOT has worked with for a 511 call translation agreement.

- **Appendix E – 511PA Usage Statistics** – This table presents usage statistics for the website, IVR, and alert service over a 12 month period.

- **Appendix F – System Requirements Specification** – This document defines the system requirements of the 511PA service as defined by PennDOT.

- **Appendix G – Deliverable Review and Approval Process** – This document outlines the procedure for submitting project deliverables for review and approval.

3. **Requirements.**

   **A. Implementation Timing**

   The successful Bidder shall ensure that all PennDOT requirements in **Appendix F, System Requirements Specification** which relate to the 511PA Telephony Service Implementation, the 511PA Website Implementation, and the 511PA Traveler Alert Service Implementation are fully functional and operational no later than 11:59 p.m., February 5, 2014. Those requirements relating to the 511PA Mobile Application shall be fully functional and operational no later than May 1, 2014.

   **B. Quality and Service**

   The successful Bidder shall demonstrate a high level of quality control standards and service. PennDOT reserves the right to request that the successful Bidder replace or remove staff who do not perform to the successful Bidder’s quality standards and guarantees of service.

   PennDOT expects high quality service and products (i.e., products that are professionally edited and responsive to both the intent and the specific requirements of the solicitation). It is
expected that the successful Bidder will provide products that will be error free and meet any and all commitments made by the successful Bidder.

C. Project Staffing

PennDOT expects to have frequent interactions, through verbal or written communication, with key project personnel throughout the project. The successful Bidder shall attend meetings, as described in this Statement of Work, Section 5, Reports and Project Control.

D. Background Checks

The successful Bidder must, at its expense, arrange for a background check for each of its employees, as well as the employees of any subcontractors, who will have access to Commonwealth Information Technology (IT) facilities, either through on-site access or through remote access. Background checks are to be conducted via the Request for Criminal Record Check form and procedure found at https://epatch.state.pa.us/Home.jsp. The background check must be conducted prior to initial access and on an annual basis thereafter. Before the Commonwealth will permit access to the successful Bidder, the successful Bidder must provide written confirmation that the background checks have been conducted. If, at any time, it is discovered that the successful Bidder’s employee has a criminal record that includes a felony or misdemeanor involving terrorist behavior, violence, use of a lethal weapon, or breach of trust/fiduciary responsibility or which raises concern about building, system or personal security or is otherwise job-related, the successful Bidder shall not assign that employee to any Commonwealth facilities, shall remove any access privileges already given to the employee and shall not permit that employee remote access unless the agency consents to the access, in writing, prior to access. The agency may withhold its consent in its complete discretion. Failure of the successful Bidder to comply with the terms of this paragraph may result in default of the successful Bidder under its purchase order.

E. Federal Highway Administration (FHWA) Guidelines

The 511 software services shall be consistent with the FHWA guidelines including, but not limited to:

- National Transportation Communications for ITS (NTCIP) family of protocols found at: http://www.ntcip.org. Additional guidance may be found in the NTCIP Guide (9001 Version 04) document.

F. PennDOT Policies, Procedures, and Standards

Prior to and during the execution of any design or development tasks involving PennDOT’s existing system environments (for example, RCRS, ATMS, GIS, MDSS, RWIS, AVL) the successful Bidder’s design/development team must comply with PennDOT’s policies, procedures, and standards for the support of the service environment. This includes, but is not limited to, the successful Bidder’s participation in a requirements phase, design phase, development phase, testing phase, and implementation phase.

G. Industry Best Practices
The successful Bidder shall utilize System Development Life Cycle (SDLC) methodology as representing industry best practices.

H. Documentation Format

The successful Bidder shall provide to PennDOT electronic versions of all documentation, and employ change control processes and version control to ensure that it is kept current for the duration of the purchase order resulting from this IFB. Where appropriate, a table of contents, an index, and keywords shall be available for information searching. PennDOT, at its discretion, may request or accept printed documentation on a case by case basis. A repository of electronic documentation shall be maintained on the PennDOT Project Collaboration Site (PCS). Specifics for the PCS will be provided to the successful Bidder upon award.

All diagrams provided to PennDOT by the successful Bidder shall be in an easy to update, PennDOT approved format (e.g., Microsoft Visio).

I. Service Level Agreements

PennDOT has developed a Service Level Agreement (SLA) process that will be utilized throughout the life of this purchase order to ensure that the successful Bidder is providing the best possible service. Appendix C – Service Level Agreements (SLAs) outlines the level of service expected by PennDOT, which will be strictly enforced by PennDOT throughout the life of the purchase order.

The successful Bidder shall prepare and provide to PennDOT monthly performance reports by the 15th of the month for the prior month’s service. PennDOT will use the monthly performance reports to evaluate the successful Bidder on a variety of performance criteria, including, but not limited to, the terms of the SLA.

The successful Bidder will have the opportunity to provide PennDOT with suggestions on how to improve processes relating to services provided through the purchase order. If any service deficiencies are identified across the entire purchase order, the successful Bidder and PennDOT representatives will determine a plan of action to ensure that the level of service improves.

J. Interruptions to Normal Operations

Any work that affects 511PA operations or the availability of 511PA to the public (i.e., live system testing, system transitions and software upgrades) must be planned in advance. The successful Bidder shall submit in writing to PennDOT’s Project Manager prior to execution, a work plan describing the work to take place, the start and end times of impacts to the 511PA operations and/or availability, and the overall result the successful Bidder expects to achieve. The successful Bidder must receive prior written approval from PennDOT’s Project Manager before proceeding with such work. PennDOT reserves the right to cancel any planned and approved work due to any unforeseen circumstances that may include, but are not limited to, severe weather and major unplanned traffic events.
K. Public Private Partnerships (P3) Sponsorship Participation

Moving forward, PennDOT intends to maximize and leverage sponsorship or advertisement opportunities. To that end, PennDOT personnel are reviewing multiple options and may select an entity or entities under Act 88 of 2012 (an Act authorizing Public Private Transportation Partnerships (P3)) to more fully explore and implement sponsorship or advertisement opportunities. By way of further background, Act 88 of 2012, inter alia, authorizes PennDOT and other qualifying transportation partners to enter into agreements with private sector entities pertaining to the delivery, maintenance and financing of transportation-related projects. For more information, Offerors may visit PennDOT’s P3 website at: http://www.dot.state.pa.us/Internet/P3info.nsf/P3Home?OpenFrameset

The selected Offeror shall work with and fully cooperate with PennDOT, PennDOT’s contractor(s) and/or such other third parties authorized by PennDOT to incorporate sponsorship or advertisement opportunities into Contract work. PennDOT, PennDOT’s contractor(s) and/or such other third parties authorized by PennDOT will conduct all work necessary to implement sponsorship or advertisement opportunities. The selected Offeror will not be expected to perform any additional work or incur costs related to the implementation of sponsorship or advertisement opportunities, unless otherwise expressly agreed to by and between the selected Offeror and PennDOT. Any additional work by the selected Offeror or additional costs for work falling within the scope of this procurement that may become necessary shall be implemented pursuant to V.42 CONTRACT-035.1b Changes (Oct 2006), of the Contract Terms and Conditions.

Such recognition shall include, but not be limited to:
- Sponsor ads/branding on the website and mobile application
- Sponsor messages via the IVR, mobile application, and traveler alert service
- Sponsor branding on live camera feeds

L. Purchase order Closeout

Prior to the natural expiration (closeout) or termination of the purchase order, the Successful Bidder shall cooperate with PennDOT and any third party designated by PennDOT in any activities related to the transition/turnover of responsibilities for the 511 service. Upon notification of closeout or termination, the Successful Bidder shall provide any PennDOT specific data from the service that would aid in transitioning the 511 service to PennDOT or a subsequent Offeror. (e.g. subscriber data)

4. Tasks.

This section describes the tasks and deliverables which shall be required to complete the 511PA service implementation as well as ongoing maintenance and support. All tasks must meet the requirements set forth in this IFB, including its Appendix F –System Requirements Specification.

Some tasks below are described as critical milestones or checkpoints. If a deliverable is identified as a critical milestone and/or impacts other tasks, the successful Bidder must wait for PennDOT approval before proceeding to the next task. For all other deliverables, the successful Bidder may continue work while PennDOT is reviewing the previous deliverables. PennDOT reserves the right to request that work on an upcoming task be temporarily stopped at any time.
This is to ensure that PennDOT has had an opportunity to review and approve information provided as the successful Bidder completes a task. The successful Bidder will be responsible for ensuring that PennDOT is notified in writing of any delays or potential impacts due to a delay during the completion of a task.

PennDOT developed Appendix G – the Deliverable Review and Approval Process, which is a standard review and approval process that will be utilized throughout this project. PennDOT’s standard review and approval time of information provided as a part of task completion is 15 working days. However, typical approval times are much shorter in duration and may be expedited for time-sensitive approvals.

**TASK A. 511PA Work Plan**

The successful Bidder shall deliver to PennDOT a plan which details the service that will be built and the plan and schedule for building it.

The 511PA Work Plan shall contain the following components at a minimum:

- **User Interface and Graphical Design**
  - Graphical components of the website, traveler alert service, mobile application and administrative site/pages
  - Call plan for the telephone service
  - Migration plan for traveler alert system
- **High level service architecture**
  - Interface components for PennDOT, PTC, and other data sources
  - Hosting environment and service redundancy
  - Data flows
- **Implementation plan**
  - Vendor and PennDOT responsibilities
  - Rollback procedures
  - Implementation schedule

This task is a milestone task. As such, no work on other tasks may commence until the 511PA Work Plan has been approved and accepted by PennDOT.

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<td>511PA Work Plan</td>
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The deliverable for this task is the 511PA Work Plan. Please refer to Appendix F, System Requirements Specification, for a complete list of PennDOT requirements for this deliverable.

**TASK B. 511PA Service Implementation**

**Subtask B.1 511PA Telephony Service Implementation**

Currently, the 511 telephony system allows the public to access highway, multimodal, and other pertinent travel information via landline or wireless telephone at any time by dialing 511. The 511 telephony system accepts calls, interacts with users, processes
queries and commands, and provides useful information back to the caller in a completely automated environment. Key components of the existing 511 telephony system include:

a. The 511 abbreviated dialing code;
b. Multiple toll-free numbers that are the destination for 511 calls;
c. Telecommunications trunks to carry the toll-free calls;
d. An Interactive Voice Response (IVR) system, including hardware, software, and speech elements, to answer 511 calls without the use of live agents; and
e. Internet and Virtual Private Network (VPN) connectivity for access to data sources.

The successful Bidder shall provide a 511 telephony service to meet PennDOT’s requirements set forth in Appendix F – System Requirements Specification, and outlined in this Statement of Work.

At a minimum, the 511 telephony service shall meet the following requirements:

a. The 511 telephony service shall utilize the existing PennDOT-owned, toll-free numbers to which the 511 dialing code are already being translated, as well as the vanity number which has already been established. Additionally, the 511 telephony service shall either maintain the current eight (8) distinct calling regions and statewide level menu, as established in the PennDOT’s original 511 system, which are routed to a total of nine (9) separate toll-free numbers, or combine them logically to smaller number of regions, but no fewer than three (3), using the existing toll-free numbers.
b. The 511 telephony service shall provide dynamically updated travel information as it becomes available from data sources as described in Appendix A, 511PA Data Source Guide.
c. The successful Bidder shall provide any text-to-speech software as required for the IVR prompts and responses.
d. The 511 telephony service shall support reporting of traffic exceptions, real-time speed data, winter road conditions, and detour information provided from the PA Turnpike Commission (PTC).
e. The 511 telephony service shall provide a time and date identifier to indicate when information was updated, configurable for each menu item, with the exception of construction events.
f. The 511 telephony service shall include all existing routes on the current 511 PA roadway network. The 511 telephony service shall utilize real-time Automatic Number Identification (ANI) for the purposes of reporting on demographic information and blocking repeat calls from phone numbers of callers identified as abusive by PennDOT.
g. The 511 telephony service shall direct callers who wish to leave feedback to the feedback form on the 511PA website.
h. The 511 telephony service shall offer callers the ability to transfer to the PA Turnpike Travel Information Services, transit and rail information for metropolitan regions, airports, other 511PA regions, and neighboring state 511 services. The 511 telephony service shall also support additional call transfer locations as designated by PennDOT.
i. The 511 telephony service shall have the capability for PennDOT staff to enter floodgate messages and incorporate them at any level within the menu structure.
Floodgate messages shall be utilized to alert callers of planned outages before and during the outage, shall have the option to disconnect callers after the floodgate message, and shall have the option to prevent or allow a floodgate from being interrupted by a caller.

The successful Bidder shall provide a 511 telephony service that is easy to use and addresses the accessibility needs of all citizens. At a minimum, the 511 telephony service shall meet the following ease-of-use and accessibility requirements:

a. The 511 telephony service shall address the needs of those citizens with hearing impairments.
b. The 511 telephony service shall offer a touchtone option for callers who do not wish to use voice commands.
c. The 511 telephony service shall provide English prompts and responses.
d. The 511 telephony service shall provide voice and touchtone shortcuts as well as support “barge-in,” which allows the caller to interrupt a list of menu options to select the desired option.

The successful Bidder shall comply with all state and federal accessibility requirements, including the IT Accessibility Policy set forth in the Commonwealth of Pennsylvania Information Technology Bulletins (ITB). The ITB for the IT Accessibility Policy can be found at the web address below:


The successful Bidder shall implement a high-availability telephony service. In order to maintain PennDOT’s goal of 99.999% (“five-nine”) availability, the 511 telephony service shall meet the following capacity and availability requirements:

a. The 511 telephony service and its components shall be made available and automatically monitored for availability 24-hours-per-day, 7-days-per-week, and 365-days-per-year.
b. The 511 telephony service shall have a minimum availability of 99.9%, when calculated on a monthly basis.
c. The 511 telephony service shall be sized to support a typical number of simultaneous callers under normal conditions, with bursting capabilities up to a minimum of 240 simultaneous callers to accommodate the larger demand for the service during major weather and other travel related events.
d. The 511 telephone service shall minimize processing command delays to ensure caller wait time for a response in three (3) seconds or less.

For a report of recent usage statistics of PennDOT’s current 511 telephony system, please refer to Appendix E, 511PA Usage Statistics.

Subtask B.2  511PA Website Implementation

PennDOT currently operates a 511 public website and tandem mobile website which allow the public to access highway, multimodal, and other pertinent travel information
via the Internet and mobile devices. Users can access PennDOT and Pennsylvania Turnpike Commission cameras, view real-time speed data, weather information, and traffic events from a graphical user interface. The websites are accessible from multiple URLs, including 511pa.com, 511pa.net, 511pa.org, 511pa.mobi, pa511.com, pa511.net, pa511.org, and pa511.mobi.

The successful Bidder shall provide a 511 website to meet PennDOT’s requirements set forth in Appendix F, System Requirements Specification, and outlined in this statement of work.

At a minimum, the 511 website service must meet the following general requirements:

a. The 511 website shall utilize the existing PennDOT-owned URLs which have already been established.

b. The 511 website shall continue to utilize a map-based user interface and allow listed events to be sorted by their characteristics. All user interface and graphic design shall be performed by the successful Bidder.

c. The 511 website shall provide a web form for site visitors to submit user feedback and automatically compile user feedback for PennDOT review. Submitted feedback shall also be automatically forwarded to the 511PA inbox at 511PA@pa.gov.

d. The successful Bidder shall provide PennDOT 511 operators with an integrated, dynamic website administrative user interface to perform, at a minimum, all current administrative functions.

The 511PA website shall integrate travel related information from multiple data sources. Refer to Appendix A, 511PA Data Sources, for a complete list of PennDOT provided data sources. At a minimum, the 511 website shall meet the following requirements:

a. The 511 website shall include events that occur on all PA state owned roads included within the PennDOT Road Condition Reporting System (RCRS).

b. The 511 website shall continue to display all currently presented Pennsylvania Turnpike Commission (PTC) information including but not limited to winter road conditions, alerts, and detour information. As it relates to winter road conditions, the four fixed PTC regions must be logically mapped to appropriate 511PA regions.

c. The 511 website shall maintain all travel links from the existing 511PA website, unless otherwise directed by PennDOT.

d. The 511 website shall present information on regional weather conditions applicable only to travel conditions including watches/warning/advisories from the National Weather Service that impact travel conditions. The 511 website shall maintain flexibility to adjust to an alternative data source, if and when applicable.

e. The 511 website shall allow reporting of winter road conditions on roadway segments as defined in RCRS, and winter road condition references shall be removed during non-winter road condition months as defined by PennDOT.

f. The 511 website shall display average link speed data graphically as a red/yellow/green color scale on the traffic map in accordance with the requirements defined in Appendix F, System Requirements Specification.

g. The 511 website shall allow the public to view 1300 existing and planned closed circuit traffic camera (CCTV) feeds and be scalable to add additional future
The camera feeds will be accessible from the PennDOT network demilitarized zone (DMZ) and PTC URLs. PennDOT intends to implement a statewide Video Sharing Solution (VSS) service which will support both static and motion video. The 511 website shall accommodate real-time streaming video from PennDOT cameras and snapshots from PTC cameras. Camera snapshots shall refresh as frequently as every five (5) seconds. Both CCTV camera snapshots and real-time streaming video shall be viewable for a minimum of one (1) minute prior to being timed-out.

**h.** The successful Bidder shall provide an export from the 511 service to post new and updated events to Twitter by region, as currently defined on the 511PA website. PennDOT will establish and maintain the Twitter accounts and provide the ID’s for each of the PennDOT regional Twitter accounts (pre-production and production platforms).

The successful Bidder shall provide a 511 website that is easy to use and addresses the accessibility needs of all citizens. At a minimum, the 511 website shall meet the following ease-of-use and accessibility requirements:

**a.** The 511 website shall provide English content.

**b.** The 511 website shall be compatible with the current and recent versions of the following web browsers on both Windows & Mac platforms where applicable:

1) Google Chrome
2) Mozilla Firefox
3) Opera
4) Safari
5) Microsoft Internet Explorer 8+ web browser or the current Commonwealth standard

**c.** The successful Bidder shall design a 511 website that resizes itself based on users’ devices for optimal viewing. This practice is known as “responsive design” or “responsive web design.”

The successful Bidder shall comply with the IT Accessibility Policy that can be found at the web address below:


The successful Bidder shall host and maintain a high-availability website. In order to maintain PennDOT’s goal of 99.999% (“five-nine”) availability, the 511 website shall meet the following availability requirements:

**a.** The 511 website and its components shall be made available and automatically monitored for availability 24-hours-per-day, 7-days-per-week, and 365-days-per-year.

**b.** The 511 website shall have a minimum availability of 99.9%, when calculated on a monthly basis.

**Subtask B.3 511PA Traveler Alert Service Implementation**
PennDOT currently operates a traveler alert system which is a free service that notifies subscribers of accidents, incidents and construction on the state highways and limited toll roads they select. Alerts are sent to subscribers' cell phones or email accounts by either email or short messaging service (SMS) text messages. To subscribe, users must:

a. Visit the 511PA public website and navigate to the “Personalized Alerts” page
b. Create a username and password combination and sign in
c. Create a profile that contains time(s), day(s), roadway segment(s) and email address to which alerts shall be sent

Once a profile has been successfully created, the traveler alert system will automatically send personalized alerts to said subscriber until the profile is removed or the user unsubscribes from the service.

The successful Bidder shall provide a traveler alert service to meet PennDOT’s requirements set forth in Appendix F, System Requirements Specification, and outlined in this document. The successful Bidder shall explain their strategy for informing and/or migrating existing users as part of the Task A, 511PA Work Plan. For a report of current subscribers and recent usage statistics of PennDOT’s existing traveler alert system, please refer to Appendix E, 511PA Usage Statistics.

At a minimum, the traveler alert service shall meet the following requirements:

a. The traveler alert service shall allow users to configure alerts from the 511 website pages and allow public users to subscribe, unsubscribe, limit the number of alerts sent per month, and otherwise manage their user profile for traveler alerts.

b. The traveler alert service shall automatically generate and disseminate alerts via email and short messaging service (SMS) messages from the previously established email address, PA-Alert@511pa.com.

c. The traveler alert service shall allow subscribers to limit the scope of alerts they receive by day of week, time of day, and/or section of the 511 PA roadway network

d. The traveler alert service shall send event cleared notifications when the PennDOT events no longer exist in RCRS. This requires the traveler alert system to compare recent notifications in the 511 system with current RCRS data to identify when an event has been cleared.

e. The traveler alert service shall maintain subscriber information for a minimum of 50,000 subscribers and be scalable to allow for future growth and enhancements to the service. The successful Bidder shall recommend a solution that optimizes performance and is cost effective.

f. The traveler alert service shall have the ability to select overnight times for receiving alerts. The webpage shall allow users to straddle over two adjacent calendar days within a single profile to allow the selection of a continuous overnight timeframe. An example of an overnight timeframe is 6:00 pm to 6:00 am.

**Subtask B.4 511PA Mobile Application Service Implementation**
PennDOT recognizes the growing influence of the mobile computing environment and wishes to better leverage it as a stream for providing travel information to users. At present, PennDOT only has a mobile version of the website to support mobile users. This website requires user interaction to receive information, and as such, is a “know before you go” tool as opposed to an option for motorists to receive updates on changing conditions while on the road.

The successful Bidder shall provide a mobile smartphone application to meet PennDOT’s requirements set forth in Appendix F, System Requirements Specification, and outlined in this document. This mobile application shall integrate 511 data sources and present them to users via a mobile platform. The application shall have a “hands-free, eye-free” mode which shall announce relevant travel alerts to the user once it has been started without any interaction from the user. The application shall also provide a graphical map of active alerts that the user can access while not driving.

Those requirements relating to the 511PA Mobile Application shall be fully functional and operational no later than May 1, 2014.

At a minimum, the mobile application shall meet the following requirements:

a. The mobile application shall be available, at a minimum, for the iOS and Android mobile operating systems. The successful Bidder shall be responsible for submitting the application to the appropriate marketplaces.
b. The mobile application shall support the newest full version of the supported operating systems and the most recent previous full version.
c. The mobile application shall incorporate all 511PA data sources and present them to users on the mobile platform.
d. The 511 mobile application shall be able to accept and deliver traffic alerts from neighboring states with which PennDOT has agreements, allowing the application to continue to function properly when crossing state lines.
e. The mobile application shall have a “hands-free, eyes-free” mode which will announce relevant alerts to the user with no need to interact with the application after it has been started.
f. The 511 mobile application shall allow normal operation of the mobile phone while the “hands-free, eyes-free” mode is active.
g. The 511 mobile application shall be location aware, announcing only those alerts relevant to the user based on their current position and direction of travel.
h. The mobile application shall also have a graphical map interface to display active alerts and other information for use when not driving.
i. The mobile application shall allow users to configure the types of data they receive, the types of routes they receive data on, the radius within which they receive alerts, and the interval at which the application checks for new alerts.

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<td>B.4</td>
<td>511PA Mobile Application Implementation</td>
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The deliverables for this section are the 511PA Telephony Service Implementation, the 511PA Website Implementation, the 511PA Traveler Alert Service Implementation, and the 511PA Mobile Application Implementation. Please refer to Appendix F, System Requirements Specification, for a complete list of PennDOT requirements for these deliverables.

**TASK C. 511PA Service Monthly Support and Operations**

For the duration of the purchase order, the successful Bidder is responsible for supplying all services required to ensure proper operation of all 511PA services implemented under this purchase order, including, but not limited to hosting (hardware and software), support, operation, maintenance, testing, training, and project management.

The successful Bidder shall meet the following minimum requirements for all 511 services:

- **a.** The successful Bidder shall implement and maintain a fully staffed Help Desk 24 hours a day, seven days a week, 365 days per year to accept minor 511 website, telephony service and traveler alert service mobile application changes and trouble reports from PennDOT authorized personnel.
- **b.** The successful Bidder shall apply product patches, perform upgrades, and complete necessary testing before migrating a software change from staging to production.
- **c.** The successful Bidder shall provide ongoing maintenance of the 511 website, telephony service, traveler alert service, and mobile application.
- **d.** The successful Bidder shall monitor all data sources and notify PennDOT in writing in advance of any data source feed or policy changes, within a timeframe deemed acceptable by PennDOT.
- **e.** The successful Bidder shall be responsible for completing any updates to the service necessitated by changes to data source feeds and/or APIs (PennDOT, PTC, or 3rd party) as part of regular support and operations.
- **f.** The successful Bidder shall provide ongoing near real-time reporting information about the usage of the various services.
- **g.** The successful Bidder shall provide a non-production test environment to verify any changes and updates prior to them being pushed to production.
- **h.** The successful Bidder shall perform routine maintenance during a mutually agreed upon weekly maintenance period. The successful Bidder shall perform non-routine and emergency maintenance at a mutually agreeable time.
- **i.** The successful Bidder shall obtain PennDOT pre-approval for any enhancements and/or upgrades to the service that would require additional costs to PennDOT or could affect performance of the service.
- **j.** The successful Bidder shall incorporate all scheduled and emergency release changes into their regular operations and support.
- **k.** The successful Bidder shall provide a source of traffic speed data to meet the functional requirements specified for the 511 services.

The successful Bidder shall describe the proposed speed data source in their response to this IFB.

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### C.1 Telephone Service Monthly Operations and Support

The deliverables for this section are the Telephone Service Monthly Operations and Support, the Website Monthly Operations and Support, the Traveler Alert Service Monthly Operations and Support, the Mobile Application Monthly Operations and Support, and the Speed Data Service. Please refer to **Appendix F, System Requirements Specification**, for a complete list of PennDOT requirements for these deliverables.

Billing for deliverables C.1, C.2, C.3, and C.4 shall commence when the related services (Deliverables B.1, B.2, B.3, and B.4) have been approved and accepted by PennDOT, and have been implemented into the production environment. Billing for deliverable C.5 shall commence when deliverables B.1, B.2, and B.3 have been approved and accepted by PennDOT and are implemented into the production environment. The billing period for these deliverables shall begin on the 1st of the month. Should billing for any of these deliverables commence on a day other than the 1st day of the month, the successful Bidder shall invoice PennDOT for a pro-rated amount of the monthly cost for the first billing period, based on the number of days the service was operational during the month.

**NOTE:** During the course of the purchase order, PennDOT reserves the right to procure its own speed data. Should PennDOT direct the use of its data to replace the speed data to be provided by the Successful Bidder, billing for deliverable C.5 shall end when that enhancement has been deployed into production. The successful Bidder may be required to use the **Task D, 511PA Service Enhancements**, to complete this work. PennDOT may remove **Task C.5** through the use of a Change Order.

### TASK D. 511PA Service Enhancements

Features not included in the outlined implementation deliverables shall be completed as enhancements. The successful Bidder shall manage activities and processes related to enhancements.

Requirements associated with enhancements include, but are not limited to:

a. PennDOT is asking all Bidders to provide a blended hourly rate for an estimated 3000 hours of enhancement work under Enhancements Process. The Enhancements Process shall include, but not be limited to, the following:
   i) The successful Bidder shall work with PennDOT to develop a list of validated requirements for enhancements.
   ii) The successful Bidder will use the blended hourly rate to develop a cost quote and schedule for the work. This may only occur once the validated requirements have been approved by PennDOT.
   iii) Once the cost quote and schedule have been approved by PennDOT, the successful Bidder shall commence work on the approved enhancements.

b. The successful Bidder shall perform any graphical/user interface design required for enhancements and receive PennDOT approval prior to development.
c. Prior to release of the enhancements, the successful Bidder shall implement the new functionality in a pre-production environment.

d. The successful Bidder shall provide test scripts for full user acceptance testing (UAT) of all new functionality.

e. The successful Bidder shall resolve all issues identified in UAT to PennDOT’s satisfaction prior to receiving final PennDOT approval to move the new functionality into production.

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The deliverable for this task is the 511PA Service Enhancements. Please refer to Appendix F, System Requirements Specification, for a complete list of PennDOT requirements for this deliverable. This deliverable will be billed with each individual release of enhancements for amount of the approved cost quote, once the release has been implemented into production and accepted by PennDOT.

Bidders shall provide an initial quote for an estimated 3000 hours of enhancement work to be done over the course of the purchase order. This quote shall be based on a purchase order blended hourly rate which shall also apply should PennDOT require additional work beyond the initial quota of hours over the course of the purchase order. PennDOT does not guarantee that all quoted hours will be used over the duration of the purchase order.

5. Reports and Project Control.

The successful Bidder must provide reports including but not limited to, the following:

1. **511PA Status Meetings**

   The successful Bidder shall attend weekly 511PA Status meetings during the initial implementation of the service. After all services have been implemented, PennDOT may exercise the option to move to bi-weekly meetings. The successful Bidder shall be responsible for communicating the status of all current project activities to the PennDOT Project Manager prior to the meeting.

2. **Regular Status Reports**

   During the implementation period, the successful Bidder shall submit weekly Status Reports that shall be integrated into 511PA Status Reports and Monthly Chief Information Officer (CIO) Reports. The Status Reports shall include, but will not be limited to, the following:

   a. Project dashboard that shows current status of all project activities, tasks, milestones
   b. Updated 511PA Project Work Plan
   c. Review/update action items from last meeting
   d. Planned tasks/activities to be completed during the next week
   e. Review of project budget including sponsorship activities
   f. Issues, risks, and proposed changes
After all services have been implemented, the weekly status reports will no longer be required. Instead, the successful Bidder shall provide these reports as requested/needed.

3. **Governance Committee Status Reporting**

The successful Bidder shall prepare the status, accomplishments, issues/risks/mitigation strategies, budget status, and planned activities to the PennDOT 511PA Project Governance Committee. The Governance Committee will meet monthly or at intervals deemed appropriate by the Committee. The Governance Committee will make decisions which have a significant impact on the planned goals/resources of the project. When necessary the successful Bidder will prepare and present materials to the Governance Committee. Materials shall be submitted at least two business days in advance to the meeting or sooner, if Governance Committee review is required prior to the meeting. All reports shall be delivered on time and shall contain accurate information.