STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION

REQUEST FOR INFORMATION
FOR
SOFTWARE DEVELOPMENT OF THE HIGHWAY SAFETY AND IMPROVEMENT PROGRAM
PRE-PROJECT RESEARCH AND EVALUATION PROGRAM (“HSIP-PREP”)

RFI # 40100-50925
August 5, 2022

1) STATEMENT OF PURPOSE:

The State of Tennessee, Department of Transportation (“TDOT”), issues this Request for Information (“RFI”) for the purpose of understanding the current marketplace interest in responding to a potential future solicitation to configure, develop, and implement a fully functional and integrated State-hosted software solution for the initiation, management and processing of Safety Investigation Packages which shall be known as the Highway Safety Improvement Program – Pre-Project Research and Evaluation Package (“HSIP-PREP”) tool.

TDOT wishes to provide respondents the opportunity to ask questions regarding the requirements and specifications for the HSIP-PREP software tool described below. Based on the information gathered from this RFI, TDOT may develop a procurement strategy and initiate a formal procurement solicitation at a later date. We appreciate your input and participation in this process.

2) BACKGROUND:

HSIP-PREP will automate several tasks currently done manually. HSIP-PREP will be an integrated State-hosted software solution for the initiation, management, and processing of Safety Investigations and will create Safety Investigation Packages. HSIP-PREP will help provide safety data needed to participate in the Federal Highway Administration (FHWA) federal-aid program and assist TDOT in the reporting required for federal aid funding from FHWA. HSIP-PREP will help TDOT receive funding to reduce public roadway fatalities and serious injuries on Tennessee public roadways.

3) SOFTWARE SPECIFICATIONS:

A. DEFINITIONS: For purposes of this RFI, definitions shall be as follows:

1) Application Programming Interface (“API”): A set of subroutine definitions, protocols, and tools for building software. In general terms, it is a set of clearly defined methods of communication between various components
2) Crash: An event that produces injury and/or property damage, involves a motor vehicle in transport, and occurs on a roadway or while the vehicle is still in motion after running off a roadway
3) Highway Safety Improvement Program (“HSIP”): A Federal Highway Administration (FHWA) federal-aid program with the purpose of achieving a significant reduction in traffic fatalities and serious injuries on all public roadways
B. REQUIREMENTS. The Highway Safety Improvement Program – Pre-Project Research and Evaluation Package ("HSIP-PREP") Tool shall have core functionality as follows:

1) Initiate Safety Investigation. Provide the capability for a User to initiate a Safety Investigation by entering a roadway location (either a road segment or an intersection) and viewing all existing/overlapping investigations and Program, Project & Resource Management ("PPRM") projects (including HSIP safety projects).

2) Create Investigations or Open Existing Investigations. Provide the capability to open existing investigations for the location or to create a new investigation at the specified location.

3) Safety Investigation Package. Provide the capability to upload documents for a Safety Investigation, generate and download a "package" in PDF format.

4) Associate Projects with Investigations. Provide the capability to associate HSIP projects from PPRM with a Safety Investigation.

5) Search for Safety Investigations. Provide the capability to search for Safety Investigations by location, keywords (tags), project type, and other key data maintained in the HSIP-PREP system, and export this data as needed.

C. HSIP-PREP USER ROLES. HSIP-PREP shall include the following User roles. User capabilities for each User role shall be reviewed and approved in writing by the State when development begins:

1) System Administrator. A System Administrator is a person authorized by the State to perform user account administrative functions such as adding and changing users within HSIP-PREP, and other administrative functions as appropriate for the HSIP-PREP solution.

2) Regular User. A Regular User shall have the capability to initiate, view and modify Safety Investigation Packages within HSIP-PREP. A Regular User shall have the capability to upload, enter or modify Data in authorized fields as determined by the State, upload and download documents, and perform other Data management functions as appropriate for the HSIP-PREP solution.
3) **Read-Only User.** A Read-Only User shall be limited to read-only access to data within HSIP-PREP.

D. **CREATE SAFETY INVESTIGATION.** HSIP-PREP shall provide the capability for an authorized User to create a Safety Investigation. The following inputs shall be required for a Safety Investigation:

1) **Safety Investigation Source:**
   a. **Investigation Location.** Users will be required to enter an investigation location. This location may be an individual road segment or a specific intersection. Once the location has been specified, the system will search for existing investigations and projects (from PPRM) at the location. Users may initiate a new Investigation or edit an existing Investigation.
   b. **Requestor Information.** If a new Investigation has been requested by a User, the required source inputs shall include the requestor’s name and contact information [i.e., email address and phone number(s)]. HSIP-PREP shall also provide a method to input the requestor’s State division, if applicable.
   c. **Existing HSIP Project.** If the source of the Investigation is an existing HSIP Safety Project maintained within the State of Tennessee Program, Project & Resource Management (“PPRM”) system or other State designated database, HSIP-PREP shall require that the User input the Pin Number for the HSIP Safety Project, or the system will prepopulate the Pin Number from an existing PPRM project.
   d. HSIP-PREP shall utilize a State-Created Application Program Interface (“API”) with PPRM or other State designated database to validate the Pin Number. HSIP-PREP shall not allow an invalid Pin Number.

2) **Investigation Request Date.** The date the investigation was requested.

3) **Investigation Purpose.** The purpose may include, but is not limited to the following examples:
   a. Data gathering and analyses in response to a request from a State division that performs roadway maintenance, utility upgrades or maintenance, etc.
   b. Data gathering and analyses to generate a response to a request from a college, university, or other organization in support of a research project.

4) **Roadway Location of Investigation.** The roadway location for an investigation shall be identified as one (1) of the following:
   a. **Single Route Segment.** When a roadway location is a Single Route Segment, HSIP-PREP shall require that the User input the roadway identifying characteristics for the Single Route Segment, which shall include the equivalent of the Data maintained by the State ESRI Roads and Highways Route Network. The application will support the new 15-char Route ID Number and dual-direction routes (positive and negative direction).
   b. **API.** HSIP-PREP shall utilize an API with the State TRIMS or other State designated database to validate each of the roadway identifying characteristics and prevent an invalid Data field input. See Attachment A for a description of each of these Data fields:
      i. County
      ii. Route
      iii. Supplemental Code
      iv. County Sequence
Direction
vi. Ramp ID (00000 for non-ramps)
vii. Begin Logmile
viii. End Logmile

c. **Intersection.** When a roadway location is an Intersection, HSIP-PREP shall require the User input the roadway identifying characteristics for a route, which shall include the equivalent of the Data maintained by the State ESRI Roads and Highways Route Network. The application will support the new 15-char Route ID Number and dual-direction routes (positive and negative direction). HSIP-PREP shall not allow an invalid Data field input.

d. **Intersecting Routes.** The system will query for all intersecting routes along the specified main route. Each intersection will be displayed, allowing users to select the specific intersection for the investigation location. Once the specific intersection location is selected, a logmile will be associated with the location. See Attachment A for a description of each of these Data fields:

i. County
ii. Route
iii. Supplemental Code
iv. County Sequence
v. Direction
vi. Ramp ID (00000 for non-ramps)

E. **DATA PROCESSING.** After the User has completed all required inputs specified above, HSIP-PREP shall perform the following processes based on those inputs:

1) When a Single Route Segment has been identified for an investigation, HSIP-PREP shall calculate and display the length of the Single Route Segment, calculated by subtracting the “Begin Logmile” Data field value from the “End Logmile” Data field value for the Single Route Segment.

2) HSIP-PREP shall utilize an API to query the State PPRM or other State designated database to identify all previously completed, current and planned projects for any portion of the roadway location. HSIP-PREP shall display PPRM data for each Project.

3) If necessary, HSIP-PREP shall utilize a process to convert the ESRI Route ID and Measure(s) to the original TRIMS Route ID and Log Mile(s) prior to requesting data from PPRM.

4) HSIP-PREP shall track the User that created the Investigation, and the date the Investigation was created.

5) HSIP-PREP shall ensure that each Investigation is identified by a unique Investigation tracking identifier (“Tracking Number”).

6) HSIP-PREP shall provide the capability for a User to upload one (1) or more PDF, Word, JPEG, (non-executable) documents and attach the document(s) to an investigation. When a document has been identified for upload, HSIP-PREP shall perform a scan to ensure that the document to be uploaded has no viruses/malicious code.

7) HSIP-PREP shall provide a freeform text field that can be used by a User to input comments or other narrative inputs for an investigation.

8) HSIP-PREP shall provide the capability for a User to:
   a. cancel an Investigation without saving any information,
   b. save an Investigation,
   c. view an Investigation that was previously saved, and
d. continue to generate an Investigation that was previously saved.

F. **MAINTAIN INVESTIGATIONS.** HSIP-PREP shall maintain all Investigations.

G. **INVESTIGATION PACKAGE.** HSIP-PREP shall provide the ability to generate a report for the Safety Investigation ("Package").

   1) When a Safety Investigation Package has been requested, HSIP-PREP shall generate an initial Safety Investigation Package in PDF format, to include:
      a. Safety Investigation tracking identifier (e.g., tracking number).
      b. Requestor and Request Date
      c. Roadway location details for the Safety Investigation Package as specified in the Investigation
      d. Freeform comment/narrative input Data fields included as part of the investigation and Safety Investigation Package

   2) When a Safety Investigation Package is generated from an HSIP Safety Project that already exists in PPRM or other State designated database as specified by the investigation location, the Safety Investigation Package shall include the HSIP Safety Project details from PPRM or other State designated database, including all fields specified in Attachment B.

   3) HSIP-PREP will provide the ability to download, edit and upload the Safety Investigation Package, thus allowing Safety personnel add or remove information in the package (using external PDF editing software).

   4) HSIP-PREP will provide the ability to upload, view, and download additional supporting documents associated with an investigation package.

   5) HSIP-PREP shall maintain all Safety Investigation Packages.

H. **NEW HSIP SAFETY PROJECT.** The State will initiate new HSIP Safety Projects within the State PPRM or other State designated database. HSIP-PREP shall be able to retrieve data from the PPRM system or other State designated database and shall have the following capabilities:

   1) HSIP-PREP shall provide the capability for the Safety Investigation Manager to input into HSIP-PREP the HSIP Safety Project Pin Number generated by PPRM or other State designated database, and correlate the Pin Number to the associated Safety Investigation Package tracking identifier (e.g., tracking number) generated by HSIP-PREP. HSIP-PREP shall maintain the PPRM Generated HSIP Safety Project Pin Number and its association with the Safety Investigation Package tracking identifier (e.g., tracking number) generated by HSIP-PREP.

   2) HSIP-PREP shall provide the following HSIP Safety Project fields. For any field not designated as a freeform text field, HSIP-PREP shall have multiple values which shall be selectable via a pull-down menu. HSIP-PREP shall provide the capability for a System Administrator to add, modify or delete any field value(s) as needed. Use of each field shall be optional:
      a. "IMPROVEMENT CATEGORY"
      b. "SUBCATEGORY"
      c. "RELEVANT SHSP EMPHASIS AREA"
      d. "RELEVANT SHSP EMPHASIS AREA (OTHER)" (This is a freeform text field.)
      e. "RELEVANT SHSP STRATEGY"
      f. "METHOD FOR SITE SELECTION"
      g. "METHOD FOR SITE SELECTION (OTHER)" (This is a freeform text field.)
I. Reporting & Querying.

1) HSIP-PREP shall provide any authorized User the capability to export data (from PPRM or HSIP-PREP) which can be used in generating reports by specifying a pin number ("PIN"):
   a. HSIP-PREP shall search for existing projects based upon the investigation location
   b. HSIP-PREP shall utilize an API with PPRM or other State designated database to identify the "FEDERAL PROJECT NUMBER(S)" associated with the "PIN" and include the "FEDERAL PROJECT NUMBER(S)" on the report.
   c. HSIP-PREP shall utilize an API to access data in PPRM and services to access data maintained by the State ESRI Roads and Highways system to identify the following field values (Roads and Highways events) associated with the "PIN" and include the field values on the report. If a field contains multiple field values, the report shall include "Multiple/Varies" as the field value:
      i. HPMS Functional Class
      ii. Speed Limit
      iii. HPMS Ownership (originally TRIMS Govt_Ctrl)
      iv. TRAFFIC (this will be linear features that contain AADT values from TN TIMES)
      v. Urban Rural
   d. Below is a sample output of the federal project number endpoint of the PPRM API which HSIP-PREP will connect to. For each federal project associated with a PIN, TDOT reports the sequence (aka the ID), the federal project number, and the "duns number:"

   ```json
   {
     "pin": "104686.06",
     "projectSequence": 80508,
     "federalProject": [
       {
         "federalProjectSequence": 56759,
         "federalProjectNumber": "SPR-PR-1B(318)",
         "dunsNumber": "878297712"
       },
       {
         "federalProjectSequence": 56789,
         "federalProjectNumber": "SPR-PR-2B(318)",
         "dunsNumber": "878297712"
       },
       {
         "federalProjectSequence": 56799,
         "federalProjectNumber": "SPR-PR-3B(318)",
         "dunsNumber": "878297712"
       },
       {
         "federalProjectSequence": 56809,
         "federalProjectNumber": "SPR-PR-4B(318)",
         "dunsNumber": "878297712"
       }
     ]
   }
   ```

2) Queries and Reports On-Demand – HSIP-PREP Investigation and Supporting Data. HSIP-PREP shall provide authorized Users with the capability to query and export
query results to Excel or CSV on demand for any and all Data contained in HSIP-PREP, consistent with the security access limitations of the user’s role(s).

3) **Exception Reporting.** HSIP-PREP shall provide for reporting of System Errors. The System Error reports shall be consistent with the information collected in the System Error logs, and shall include a description of the System Error, indicate the time, identify the user, and identify the component within HSIP-PREP where the System Error occurred.

J. **User Interface.** HSIP-PREP shall provide its functionality through a web interface.

K. **HSIP-PREP Design.** HSIP-PREP shall comply with the following design requirements:

1) **Accessibility.** HSIP-PREP shall be compliant with section 508 ADA standards for web applications.

2) **Web Design Requirements.** All web pages designed as part of HSIP-PREP shall comply with the following:
   a. adhere to HTML5 guidelines,
   b. development using responsive website techniques,
   c. use of only State approved logos,
   d. development for current web standards,
   e. use of approved Cascading Style Sheets for consistent look, and
   f. do not include the use of Java, Active X, Flash, or other browser plug-ins.

3) **Web Browser Compatibility.** HSIP-PREP shall be compatible and fully functional in the following web browsers:
   a. Firefox current build and one prior build
   b. Google Chrome current build and one prior build
   c. Safari current build and one prior build
   d. Microsoft Edge current build and one prior build

4) **Data Exchange Formats.** HSIP-PREP shall support open data exchange formats including JavaScript Object Notation JSON, ESRI Feature Service, and GeoJSON via web services, extensible Markup Language (“XML”).

5) **API Endpoints.** HSIP-PREP shall have HTTP-based web Application Programming Interface (“API”) endpoints to provide the capability to programmatically query, create, update and delete user account and other Data, both individually and in bulk. API endpoints shall be accessible only by users authorized by the State. The Contractor shall maintain current updated documentation for API endpoints and shall provide this documentation to the State on the Effective Date, and throughout the Term when there are changes or updates associated with API endpoints.

6) **HSIP-PREP Interfaces.** The Contractor shall be responsible for acquiring any necessary rights or permissions with respect to the implementation of HSIP-PREP. The authentication/authorization method used to secure any interface(s) required by the Contractor shall be subject to approval by the State.

7) **HSIP-PREP Version Control.** The Contractor shall provide a clearly defined version control process including test and production environments, and full “roll back” to previous version capabilities.

8) **Required Fields & Error Checking.** HSIP-PREP shall clearly identify missing or invalid required elements upon data entry. Certain data entry fields within HSIP-PREP shall have error-checking routines to provide the user with feedback in the cases of incorrect or mis-keyed information. Examples of fields that would be appropriate for error-checking include dates, numeric values (e.g., quantities).

9) **Dropdown Lists.** Dropdown lists for data entry fields shall be inserted as designated
by the State.

10) **Navigation.** HSIP-PREP shall provide the capability for any user to access other screens and modules without backing out of menus or menu paths.

11) **Software Compatibility.** The HSIP-PREP software solution shall be compatible with the latest versions of State supported software. Current State supported software platform includes the following:
   a. Windows 2012 Server R2 & later
   b. Microsoft Edge
   c. Oracle Database Server (Version 19C) and Client (Version 19C or current version of Oracle).
   d. Microsoft Internet Information Server© (IIS)
   e. Microsoft .NET
   f. ArcGIS 10.7 or current version at the time of development

L. **HSIP-PREP Security.**

1) **Restrict Access.** HSIP-PREP shall restrict access by user role to protect against fraud and error.

2) **Data Privacy & Secure Communication.** All Data shall be communicated over TLS version 1.2 or higher.

3) **Active Directory Integration.** HSIP-PREP shall utilize a user model allowing for Single Sign On (“SSO”) using the State of Tennessee’s Active Directory for employee enterprise login, accessed externally by cloud providers from Active Directory Federation Services (“ADFS”), so that state of Tennessee employees will have the capability to access HSIP-PREP using their enterprise login. HSIP-PREP shall leverage ADFS/Security Assertion Markup Language (“SAML”) for SSO for web interface and through any supported native applications.

4) **Services Performed in U.S.** All services described under this Specifications and Requirements Document shall be performed within the borders of the United States. All storage and processing of information shall be performed within the borders of the United States. This provision applies to all work performed by the Contractor and any subcontractors.

5) **Compliance with State Policies.**
   a. The Contractor shall comply with the State of Tennessee’s Enterprise Information Security Policies as amended periodically. The State of Tennessee’s Enterprise Information Security Policies document is found at the following URL: https://www.tn.gov/finance/strategic-technology-solutions.html
   b. The Contractor shall comply with the State of Tennessee’s Procurement Policies and Procedures found at the following URL: https://www.tn.gov/generalservices/procurement.html

M. **Audit Trails.**

1) **Audit Trail Details.** Detailed audit trails shall be maintained for all transactions including but not limited to Data inputs, user account changes, and system changes made within HSIP-PREP. The audit trail shall include identification of the user that performed the transaction, transaction type, relevant Data, and time of the transaction. HSIP-PREP shall maintain an electronic file of all transactions by user, time, date, and transaction type. HSIP-PREP shall require a System Administrator performing an account management activity to give a reason for the action.

2) **Error Logging.** HSIP-PREP shall log all HSIP-PREP System Errors. The log shall
include the user that received the System Error, detailed System Error information, the
time of the System Error, the component of HSIP-PREP where the System Error
occurred, and the device/location where it occurred.

3) Administrative Access. System Administrators shall have the capability to access, upon request, all detailed audit trail Data within HSIP-PREP.

N. HSIP-PREP Administration.

1) User Access Limitations. HSIP-PREP shall limit a user’s access to only those data fields, menus, screens, modules, and functionality required for that user’s role(s).

2) System Administrator Functions. HSIP-PREP shall provide the capability for a System Administrator to perform administrative functions within HSIP-PREP, including the creation and management of accounts for all user roles.

2. COMMUNICATIONS DURING RFI PROCESS:

a. Please submit your response to this RFI to:
Gregg Bennett, Transportation Program Supervisor
Tennessee Department of Transportation
505 Deaderick St., Nashville, TN 37243
615-741-9125
TDOT.RFP@TN.GOV

b. Please feel free to contact the Department of Transportation with any questions regarding this RFI. The main point of contact will be:
Gregg Bennett, Transportation Program Supervisor
Tennessee Department of Transportation
505 Deaderick St., Nashville, TN 37243
615-741-9125
TDOT.RFP@TN.GOV

c. Please reference RFI # 40100-50925 with all communications to this RFI.

3. RFI SCHEDULE OF EVENTS:

<table>
<thead>
<tr>
<th>EVENT</th>
<th>TIME (Central Time Zone)</th>
<th>DATE (all dates are State business days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. RFI Issued</td>
<td></td>
<td>August 5, 2022</td>
</tr>
<tr>
<td>2. Written Questions/Comments Deadline</td>
<td></td>
<td>August 19, 2022</td>
</tr>
<tr>
<td>3. State Response to Written Questions/Comments</td>
<td></td>
<td>August 26, 2022</td>
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<tr>
<td>4. RFI Response Deadline</td>
<td></td>
<td>September 6, 2022</td>
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</tbody>
</table>
4. RFI GENERAL INFORMATION:

   a. Please note that responding to this RFI is not a prerequisite for responding to any future solicitations related to this project and a response to this RFI will not create any contract rights. Responses to this RFI will become property of the State.

   b. The information gathered during this RFI is part of an ongoing procurement. In order to prevent an unfair advantage among potential respondents, the RFI responses will not be available until after the completion of evaluation of any responses, proposals, or bids resulting from a Request for Qualifications, Request for Proposals, Invitation to Bid or other procurement method. In the event that the state chooses not to go further in the procurement process and responses are never evaluated, the responses to the procurement including the responses to the RFI, will be considered confidential by the State.

   c. The State will not pay for any costs associated with responding to this RFI.

5. RFI INFORMATIONAL FORMS:

   The State is requesting the following information from all interested parties. Please fill out the following forms:

<table>
<thead>
<tr>
<th>RFI #40100-50925</th>
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<tbody>
<tr>
<td>TECHNICAL INFORMATIONAL FORM</td>
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</tbody>
</table>

   1. RESPONDENT LEGAL ENTITY NAME:

   2. RESPONDENT CONTACT PERSON:
      Name, Title:
      Address:
      Phone Number:
      Email:

   3. Does your team have the right technology expertise to complete this project? If so, please explain your team structure:

   4. Brief description of experience providing similar scope of development services/software product:

   5. Has the organization developed and implemented this type of solution for other state Departments of Transportation (DOT) or government entities? If so, please provide the requested information listed below:
      a. Name of State/Region:
      b. Years of service provided to the client:
      c. Contact person in each State/Region who is familiar with the product:

   6. Intellectual Property, Independent Contractor, Work Made for Hire: Do you understand and accept that any software deliverable including, but not limited to, all specifications, source and other code,
<p>| | |</p>
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<tbody>
<tr>
<td>7.</td>
<td>Will TDOT own the source code once the project is complete, including the right to change it?</td>
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<tr>
<td>8.</td>
<td>Can your organization meet the security requirements named above, including performing all work in the United States?</td>
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<tr>
<td>9.</td>
<td>Please describe your approach to working with state government clients and your process to understand the needs and goals of the team you are developing software with/for?</td>
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<tr>
<td>10.</td>
<td>Please describe your design and development process:</td>
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<tr>
<td>11.</td>
<td>As part of the development process, will you recommend additional ideas if it is possible to make the software better than the initial specifications named above?</td>
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<tr>
<td>12.</td>
<td>Please describe your communication process during development:</td>
</tr>
<tr>
<td>13.</td>
<td>Will TDOT have access to repositories and development tools such as those named in this section to monitor progress of the project?</td>
</tr>
<tr>
<td></td>
<td>a. Source code (Gitlab, Github)</td>
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<td></td>
<td>b. Project management tool/boards (JIRA, Trello, Asana, etc.)</td>
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<tr>
<td></td>
<td>c. Burndown charts to monitor progress on user stories</td>
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<tr>
<td></td>
<td>d. Communication tools (Slack, Rocket.Chat, or similar)</td>
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<tr>
<td></td>
<td>e. Staging and production environments?</td>
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<tr>
<td>14.</td>
<td>What do you see as TDOT’s role in this project?</td>
</tr>
<tr>
<td>15.</td>
<td>What resources will you need from TDOT to complete the project?</td>
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<tr>
<td>16.</td>
<td>Will you provide automated testing to ensure the software works properly?</td>
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<tr>
<td>17.</td>
<td>What kind of long-term support do you offer?</td>
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<tr>
<td>18.</td>
<td>If selected, please describe your timeline to complete this project:</td>
</tr>
</tbody>
</table>
## COST INFORMATIONAL FORM

1. Describe what pricing **units** you typically utilize for similar services or goods (e.g., per hour, each project, etc.):

2. Describe the typical price range for similar services or goods:

## ADDITIONAL CONSIDERATIONS

1. Please provide input on alternative approaches or additional things to consider that might benefit the State:

2. Please describe any potential problems or risks you see with this project:
## Field Names & Field Descriptions
for the State TRIMS
or Other State Designated Database

<table>
<thead>
<tr>
<th>FIELD NAME</th>
<th>FIELD DESCRIPTION</th>
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<tbody>
<tr>
<td>CC T RRRR S Q D RAMPX</td>
<td>Format for the 15 Character ID number</td>
</tr>
<tr>
<td>CC</td>
<td>County</td>
</tr>
<tr>
<td>T</td>
<td>Route Type</td>
</tr>
<tr>
<td>RRRRR</td>
<td>Route Number - 4 digits for the route number</td>
</tr>
<tr>
<td>S</td>
<td>Supplemental Code - Single alphanumeric character to take the place of Special Case and include new codes</td>
</tr>
<tr>
<td>Q</td>
<td>County Sequence</td>
</tr>
<tr>
<td>D</td>
<td>Direction (P for Positive Direction of Inventory, N for Negative)</td>
</tr>
<tr>
<td>RAMPX</td>
<td>Ramp Identifier - 5 characters, 4 for the exit number, 1 for the leg identifier. Non-ramps will have zeros.</td>
</tr>
</tbody>
</table>

### Route Types

- **I**: Interstate
- **S**: State Route
- **F**: Functional/Federal Aid/Arterials and Collectors/Other
- **L**: Local Road
- **P**: Private Road
- **K**: Park - This is for when the entire route is a park (such as Natchez Trace (0E500))