**New York State Department of Transportation**

**Request for Proposals for Contract #CXXXXX for**

**XXXXXX**

**DATE**

**Attachment XXX**

**NYS Information Technology Services (ITS) Requirements**

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Please describe your proposed methods regarding the NYS ITS Requirements listed below.

1. **Project AND SYSTEM DEVELOPMENT LIFECYCLE**

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| Rqmt. No. | Requirement Description –**Project and System Development Lifecycle**  |
| IT1 | For all Technology related NYS DOT contracts / projects, a NYS Information Technology Services (OITS) is assigned as the lead Project Manager to facilitate and manage the NYS DOT, OITS and Vendor / Proposer scope, schedule, and quality. The Vendor / Proposer will be responsible for facilitating and managing the Vendor / Proposer scope, budget, schedule and quality complying with NYS OITS requirements, which features the following:1. Project Initiation
2. System Initiation: Application Strategy, Architecture and Planning

Include a conceptual architecture diagram and description of the proposed solution. The conceptual architecture should identify and describe the overall hardware; software; database components; programming languages; development tools; documentation tools; and standards for their proposed solution. The Proposer shall provide a detailed text description in its proposal including, but not limited to, the following:* Depiction of hardware and software layers, storage, interfaces to external systems and communications topology;
* Approach to integrating with existing systems
* Approach to support accessibility for reporting, analysis and data warehousing.
* Approach to ensuring the scalability of the application;
* Support for multiple tiers to enable quality control and assurance, testing and security for migration of new versions or enhancements.
* Approach to supporting Continuity of Operations
1. Project Planning
2. System Requirements Analysis: Detailed Functional and Non-Functional Requirements Definition

Describe the functionality of the system in detail by capturing the intended behavior of the system, expressed as services, tasks or functions.1. Application/System Design Specification
2. Describe how the application/system performs the business functional requirements. Include methodology on the infrastructure application, user and data layers, configuration settings, and user interfaces. System Design: Detailed Infrastructure Design

Describe which technologies the proposed solution supports including, but not limited to, its’ proposed application solution platforms, databases, interfaces, production, test and training environments. The proposed solution shall be able to run effectively within a shared service, virtual server environment. The technical proposal shall include any and all peripheral hardware required to operate the Proposer’s solution.1. Project Execution and Control
2. Application/System Construction: Configuration, Programming, Development, Integration, Data Migration, Data Governance

Describe the methodology for application/system construction and development. The approaches for integration with NYS systems and the plan for data management including data dictionary and data model. 1. Systems Acceptance: System Testing and Acceptance Test Planning

Methodology as outlined in Attachment XX - ITS QA/QC and Release and Deployment Process.1. System Implementation: Product Implementation and Deployment

All builds and configurations must comply with NYS Information Technology and Security Policies, Standards, and Best Practice Guidelines under IT3, IT4 and IT5.1. Release & Deployment Management

Describe how the solution will be deployed to the Users and managed in throughout the infrastructure tiers as outlined in Attachment XX - ITS QA/QC and Release and Deployment Process.1. Production “Go-Live”

Production Deployment and Support PlanTransition to Operational Support Plan1. Post Implementation Warranty

Plans for Post Go-Live support.NYSDOT envisions that the delivered solution will be highly configurable (i.e., can be adapted to meet changing business needs with minimal custom changes to the underlying software programming code) so that NYSDOT staff can create or configure System forms, workflows, business processes, business rules, and reports without impacting the underlying software code.During the life of the project, NYSDOT and OITS Sponsors will review deliverables and evaluate them for completeness, clarity, adherence to generally recognized standards, and compliance with NYSDOT’s intent as conveyed in this RFP and in the resulting contract. A deliverable, phase, or milestone will not be considered complete until sign-off has been given. NYSDOT will only render payment for services and deliverables it accepts. |
| IT1 – Proposer Detailed Response as how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

**2. TECHNOLOGY**

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| Rqmt.No. | Requirement Description - **Technology** |
| IT2 | **Scope**This content is included in any third-party software contract or Request for Proposal (RFP). Third-party software includes the following:* Any cloud-based software or application (solution)
* Any hybrid solution (NYS Private Cloud and Vendor Hosted or Public Cloud)
* Commercial of the shelf (COTS) software
* Government of the shelf (GOTS) software
* Any services engagement where custom software is a deliverable

This document does not apply to desktop software or low-level software utilities.Exceptions to these requirements must be directed to the agencies assigned ITS Enterprise Architect.**NYS Supported Hosting Models:**1. **NYS Private Cloud (aka ITS Data Center)**

All software solutions deployed in the NYS Private Cloud are required to use the following enterprise standards[[1]](#footnote-2). Necessity of these requirements is determined by the agency’s assigned ITS Enterprise Architect. The ITS build or platform teams will prepare the environment prior to deployment:* Enterprise File storage
* Code Repository (GIT) for any custom code specific to NYS DOT
* Enterprise Continuous Integration and Deployment (CI/CD)
	+ Implemented through GitLab
* Enterprise System Monitoring
* Enterprise Networking and Edge Security
* Enterprise Compute Platforms
	+ Supported platforms include Red Hat Enterprise Linux, Windows Sever, IBM AIX
* Enterprise Application Programing Interface (API) Gateway
* Enterprise Managed File Transfer (MFT)
* Enterprise Content Management (ECM)
* Enterprise Database as a Service (DBaaS)
	+ Supported platforms include Oracle and Microsoft SQL Server
* Enterprise Extract, Transform and Load (ETL)
	+ Oracle Data Integrator, Microsoft SQL Server Integration Services

ITS will host and support the above listed platforms. Any software, code or configurations not provided by ITS **MUST** be fully supported by the Vendor. Deviations to these requirements **MUST** be directed to the agency’s assigned ITS Enterprise Architect.1. **NYS Public (Government) Cloud**

NYS ITS has Public Cloud hosting capability with Microsoft Azure, Google Cloud Platform (GCP) and Amazon Web Services (AWS). The instances provide: Gov IaaS and Gov PaaS with ITS Management and Administration.NYS ITS will provision the tenant and delegate access to the chosen vendor to provision and configure the necessary servers, including application install and configuration. NYS ITS will maintain control of the tenant, including the cloud firewall. The vendor will be responsible for the servers and services in the cloud including patching (both OS and application-level), backup/recovery, monitoring, database administration, logging, storage administration, etc.All representatives of the vendor (including subcontractors) performing a role that involves access to the NYS Public Cloud OR management/administration of the application will be required to complete a NY State Police background check and NYS ITS fingerprinting process before access is granted.1. **Vendor Cloud Hosted**

This option can ONLY be applicable if the solution is a true shared SaaS solution (used by multiple customers). SaaS is defined as multi-customer used, and is configured out of the box with no custom development for NYS. If the solution is NOT a true shared SaaS solution, then the Vendor must be willing to host the solution within a NYS Public (Government) Cloud. **Required for All Solutions**All solutions must adhere to ITS-P20-001 System Integration Policy and ITS-S20-001 Service Oriented Architecture Standard. In summation, all system integrations that includes business information must adhere to the following requirements:* The system integration must be implemented using one of the following protocols:
	+ Representative State Transfer (REST)
	+ Simple Object Access Protocol (SOAP) Web Service
	+ Message exchange using an official ITS supported middleware
	+ Extract Transform and Load (ETL)
	+ Secure File Transfer Protocol (SFTP) (can ONLY be used IF NONE of the above can be complied with)
* All interfaces to ITS managed systems must use an ITS supported intermediary (Akana)
* All integrations provided by the vendor must be documented.

All solutions **MUST** integrate with ITS’ standard identity providers (IDP). Please refer to Table 1 for protocol details.*Table 1: IDP Integration Details*

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| IDP | User Base | Integration Protocol |
| NY.gov (External) | General Public, Business Uses, Cross-government User (Federal Employees, County workers) | Open Identity Connect (OIDC) using the Authorization FlowOrSecurity Assertion Markup Language (SAML) 2.0 |
| SVC (Internal) | State Employees | OPEN IDENTITY CONNECT (OIDC) USING THE AUTHORIZATION FLOWORSECURITY ASSERTION MARKUP LANGUAGE (SAML) 2.0 |

As part of the Technical Proposal, each Proposer must be compliant with NYS’ technology requirements. The system must incorporate compliance with NYS ITS Technical Policies and Standards posted to <https://its.ny.gov/policies> as follows:1. ITS-P19-002 Cloud Computing
2. ITS-P20-001 System Integration
3. ITS-S16-003 TLS / SSL Certificate Standard
4. NYS-P10-001 Advertisements, Endorsements and Sponsorships on State Entity Websites
5. NYS-S14-008 Secure Configuration
6. NYS-S15-001 Patch Management
7. NYS-P20-001 Digital Identity Standard - NYS Authentication All software must integrate with ITS’ standard identity providers (IDP) as detailed in *Table 1: IDP Integration Details* above.
8. NYS-S17-003 Notification Standard for Certain Types of Regulated Data
9. NYS-P10-004 Guidance for the Use of SSNs by State Government Entities
10. NYS-G24-001 Date/Time Conversion Contract Language
11. NYS-S14-011 Enterprise Mobile Management Technical Standard

as well as NYS ITS Technical Standard attached as Attachment XX: 1. ITS-S20-001 Service Oriented Architecture
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| IT2 – Proposer Detailed Response as which hosting option is being proposed and how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

**3. INFORMATION SECURITY**

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| Rqmt.No. | **Requirement Description –** **Information Security**  |
| IT3 | As part of the Technical Proposal, each Proposer must be compliant with NYS’ data and security requirements. In its performance of the project, the selected Consultant shall be responsible for complying with New York State Chief Information Security Office (CISO) policies. In addition, the work of the selected Consultant must be compliant with the following:1. The NYS Information Security Policies and Standards at <https://its.ny.gov/policies>. Click on Security in the left-hand column to access NYS Security Policies and Standards
2. NYS Information Security Breach and Notification Act: [Breach Notification and Incident Reporting | Office of Information Technology Services (ny.gov)](https://its.ny.gov/breach-notification-and-incident-reporting)
3. In addition, the selected Consultant must be compliant with any other applicable NYS ITS Policies located here: [Policies | Office of Information Technology Services (ny.gov)](https://its.ny.gov/policies)
 |
| IT3 – Proposer Detailed Response as how your solution meets these requirements and/or what is your plan, including timeline, for your solution to come into compliance with stated requirements: |

**4. DATA SECURITY and data management**

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| Rqmt.No. | Requirement Description –**Data Security and Data Management** |
| IT4 | The system must incorporate safeguards to ensure the data is protected.1. The solution must conform to all applicable NYS Office of ITS Security Standards and Policies (accessible at <https://its.ny.gov/policies>).
2. The system shall generate alerts when security controls are violated.
3. The system must scan all files for viruses when uploading before accepting them into the data repository.
4. When a virus is detected, the system shall quarantine external file transfers and notify appropriate users.
5. The system must enable data encryption, at the data field level, according to the Federal Information Processing Standard (FIPS) Publication 140-3.
6. The system shall not permit audit records to be physically deleted or altered, except as part of a system administration archival process.
7. The system shall restrict saving any sensitive information in any external files, including configuration, log, and data files.
8. PPSI 1 information must be secured from unintentional disclosure.
9. Any stored documents that are generated and/or uploaded to the solution must be secured from unauthorized access.

1: The term ‘PPSI’ means: Personal, Private, or Sensitive Information, and includes the following:1. Information used to authenticate the identity of a person or process (e.g., PIN, password, passphrase, biometric data). This does not include distribution of one-time-use PINs, passwords, or passphrases.
2. Information that identifies specific structural, operational, or technical information, such as maps, mechanical or architectural drawings, floor plans, operational plans or procedures, or other detailed information relating to electric, natural gas, steam, water supplies, nuclear or telecommunications systems or infrastructure, including associated facilities, including, but not limited to:
3. Training and security procedures at sensitive facilities and locations as determined by the Office of Homeland Security (OHS);
4. Descriptions of technical processes and technical architecture.
5. Plans for disaster recovery and business continuity; and
6. Reports, logs, surveys, or audits that contain sensitive information.
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| IT4 – Proposer Detailed Response as how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

**5. SYSTEM CONTINUITY AND ERROR MANAGEMENT**

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| Rqmt.No. | **Requirement Description –System Continuity** **and Error Management** |
| IT5 | The Proposer must include a description of the Proposer’s System Continuity and Error Management plan that meets, at a minimum, the following requirements:* The system shall be able to automatically back out incomplete processed transactions if the system fails.
* The system shall handle database failovers in a clustered database server configuration.
* The system shall have fully documented restart capabilities for the application’s on-line and batch processing components.
* The system must be capable of functioning in a load-balanced and redundant configuration. End user session persistence, in the event of web/app server failover, would be desired.
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| IT5 – Proposer Detailed Response as how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

**6.** **Web Content Accessibility Guidelines (WCAG) and Mobile Friendly**

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| Rqmt.No. | **Requirement Description – Web Content Accessibility Guidelines (WCAG) and Mobile Friendly** |
| IT6 | As part of the Technical Proposal, each Proposer must be compliant with NYS’ Web Content Accessibility Guidelines (WCAG) and Mobile Friendly requirements. In its performance of the project, the selected Consultant shall be responsible for complying with New York State Legislation as follows:A266a/S3114a - WCAG Bill - This bill requires newly created State agency websites (including web applications), or those with changes to "form or function"**1** to comply with Level AA of the most current version of WCAG.A6972/S5410 - Mobile Friendly Bill – This bill requires newly created State agency websites (including web applications), or those with changes to "form or function" to be "mobile friendly"**2**.**1“Changes to form or function”** is defined as “modifications to the visual presentation, informational organization, website infrastructure, or user utility of the website, including but not limited to: 1. redesigns of the site layout, color schemes, graphics, branding elements, or other aesthetic components; and 2. integration of dynamic interfaces.”**2"Mobile friendly"** is defined as configuring a website "...in such a way that such website may be navigated, viewed and accessed on a smartphone, tablet computer, or similar mobile device.“The selected Consultant shall be responsible for complying with the following NYS WCAG and Mobile Friendly policies posted to <https://its.ny.gov/policies> as follows:1. NYS-S16-001 New York State Universal Web Navigation
2. NYS-P08-005 Accessibility of Information Communication Technology
3. NYS-P08-003 Domain Names for State Government Agencies
4. NYS-P11-001 Use of Social Media Technology
 |
| IT6 – Proposer Detailed Response as how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

**7.** **ARTIFICIAL INTELLIGENCE (ai) tECHNOLOGIES**

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| Rqmt.No. | **Requirement Description – Artificial Intelligence (AI) Technologies** |
| IT7 | If the proposed solution includes any AI technology, each Proposer must be compliant with NYS’ Acceptable Use of Artificial Intelligence Technologies Policy NYS-P024-001 posted to <https://its.ny.gov/policies>. |
| IT7 – Proposer Detailed Response as how your solution meets this requirement and/or what is your plan, including timeline, for your solution to come into compliance with this requirement: |

1. Unless explicitly stated, all enterprise standards are integrated using open protocols. [↑](#footnote-ref-2)