

# RFP R1804 Requirements Fulfillment Matrix

This document maps requirements from the **RFP R1804 Transportation Management System** against the implementation strategies and plans detailed in the HTML documents within the project workspace.

The '**Present in Implementation strategy and plans (Yes/No)**' column indicates whether the content addressing the specific RFP requirement was found within the reviewed workspace HTML files.

'**If Yes...**' column lists the HTML file(s) where the relevant information is located. Section identification is general.

'**If No...**' column indicates 'Potential Gap' if coverage could not be confirmed in the targeted file review, or 'Identified Gap' if the requirement type is clearly outside the scope of the strategy documents (e.g., Minimum Vendor Qualifications).

Status, Assigned To, ETA, and Comments/Next Steps columns are intentionally left blank for future project tracking.

## Minimum Qualifications (Section 2)

Mapping vendor qualification requirements against implementation strategy documents. These are generally not expected to be present in strategy files.

Serial Number	ID / Sub-Id/Section from the RFP	Full requirement mentioned here	Present in Implementation strategy and plans (Yes/No)	If Yes, mention the exact file or files and the section in that file or files where this requirement has been considered for implementation	If No, then either mention Potential Gap... or Identified Gap...	Current Status	Assigned To	ETA	Comments and Next Steps
1	RFP-S2.1	Proposer(s) may be a for-profit or not-for-profit institution. Individuals are not eligible to submit proposals for this RFP.	No	N/A	Identified Gap (Vendor Qualification)				
2	RFP-S2.2	Proposer(s) must provide evidence that the Proposer has been actively engaged for a minimum of three (3) years in providing each of the following services: GPS service, dynamic routing, and ridership, all to the scale of similar size and complexity to the DOE in their	No	N/A	Identified Gap (Vendor Qualification / Experience)				

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		proposal. Proposer(s) must provide three (3) letters of reference on company letterhead, complete with contact information, from corporations, municipalities, and/or educational organization(s) for projects or services of a similar nature and scope as required in this RFP. Each reference must state the dates, locations, description of the services provided, and volume and quality of GPS, routing, and ridership services provided. If the reference is from the DOE, the SCA or any other Federal, State or City agency does not provide references, please provide contact information in lieu of the reference.							
3	RFP-S2.3	The vendor must have a dedicated, local software development team based in New York City. This team should include, but not be limited to, the following roles:	No	N/A	Identified Gap (Vendor Qualification / Location)				

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		software development, product management, quality assurance/testing, and other relevant technical experts and teams. The vendor should demonstrate the ability to provide on-site support, collaboration, and engagement, with a clear commitment to the local presence of key technical staff in NYC.							
4	RFP-S2.4	Proposer(s) must have and provide evidence of at least a minimum of five million dollars (\$5 MM) in annual revenue. Examples of financial statements that may be included but are not limited to: balance sheets, income statements and statements of earnings.	No	N/A	Identified Gap (Vendor Qualification / Financial)				
5	RFP-S2.5	If unable to provide such evidence, Proposer must provide information on the Proposer's creditworthiness, amounting to at least a minimum	No	N/A	Identified Gap (Vendor Qualification / Financial Alt.)				

Serial Number	ID / Sub-Id/Section from the RFP	Full requirement mentioned here	Present in Implementation strategy and plans (Yes/No)	If Yes, mention the exact file or files and the section in that file or files where this requirement has been considered for implementation	If No, then either mention Potential Gap... or Identified Gap...	Current Status	Assigned To	ETA	Comments and Next Steps
		of five million dollars (\$5) including details with regard to any existing lines of credit which the Proposer holds and revocations of previous lines of credit.							
6	RFP-S2.6	The Proposer(s) must have at least a minimum of two and a half million dollars (\$2.5 MM) of annual revenue specifically obtained from the provision of the services described herein. Proposer may provide evidence of their annual revenue in the form of letter from clients, statements that identify the earnings from the elements referred to, and brief description of the project completed or any other method that can be verified by the DOE.	No	N/A	Identified Gap (Vendor Qualification / Specific Revenue)				
7	RFP-S2.Note	Proposers may join other organizations to submit a proposal. In the event a proposer submits a proposal and is awarded a contract on behalf	No	N/A	Identified Gap (Informational / Contractual)				

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		of a group of organizations, the contract would be between the NYCDOE and the proposer. Those other participating organizations are designated subcontractors. Payment would be made to the awarded vendor only, and in turn the awarded vendor would be responsible for payment to their subcontractors (e.g., the other participating organizations), as well as for their compliance with all the terms and conditions of the contract.							

## System & Operational Requirements (Section 3)

Serial Number	ID / Sub-Id/Section from the RFP	Full requirement mentioned here	Present in Implementation strategy and plans (Yes/No)	If Yes, mention the exact file or files and the section in that file or files where this requirement has been considered for implementation	If No, then either mention Potential Gap... or Identified Gap...	Current Status	Assigned To	ETA	Comments and Next Steps
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### 3.1 System Overview

8	RFP-S3.1.1	Provide a single, completely integrated solution for: 1. Near Real-time Location Tracking	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 -					
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		(GPS + Ridership), 2. Near Real-time notification system (connecting all stakeholders), 3. Adaptive/Dynamic vehicle routing.		Solution Design Functional and Non Functional Requirements.pdf					
9	RFP-S3.1.2	Solution to be OPT's new system of record for GPS service, routing, and ridership.	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.1 - Data Governance and compliance controls.pdf					
10	RFP-S3.1.3	Augment or be integrated into other existing antiquated OPT systems. All relevant OPT data must be seamlessly integrated into the new system.	Yes	Appendix M.1 - System Architecture.pdf; Appendix S.2 - GIS Integration.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					
11	RFP-S3.1.4	Solution may be configurable/customizable COTS or custom-built.	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix N.3 - Engineering Approach.pdf					
12	RFP-S3.1.5	System must be robust enough to handle the enterprise size/complexity of OPT's operations and expand for growth/new technologies.	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional					

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				Requirements.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf					
13	RFP-S3.1.6	Proposed solution may include options for an in-house customized build/develop component.	Yes	Appendix N.3 - Engineering Approach.pdf; Appendix M.1 - System Architecture.pdf					
14	RFP-S3.1.7	Seek a collection of systems integrated into a single platform to allow ease of data flow and reduce troubleshooting across several contractors.	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					

### 3.2 GPS

15	RFP-S3.2.1	Must be independent of any bus inventory with its own identity that can be tracked to the device without the reliance of a bus or route association. The device should be portable so that it may be used daily on any route by any driver, on any vehicle. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Portability is a key feature.
16	RFP-S3.2.2	Every bus transporting a NYCPS Student must have an operational GPS; a failure of the driver's GPS should not preclude the bus from service. The driver simply needs a replacement GPS that will work on his or her assigned bus. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf					Requires robust logistics for spares/replacements.
17	RFP-S3.2.3	GPS data must be available in near real-time for all components of the overall solution, including but not limited to the Routing Software (overlay of proposed route versus the actual path the driver took, turn by turn, customizable by date/time frame	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix Q.2 -					Core NFR related to performance/data flow.

		that the user selects to view, in addition to reporting features for on-demand reports- ability to search addresses/intersections) and the Bus Driver Module. (High)		Observability and Monitoring Strategy.pdf					
18	RFP-S3.2.4	Must have an up-to-date map capable of providing dynamically generated turn-by-turn sequential stop navigation for any route, bus, and driver combination for planned routes, and the actual route itinerary based on GPS data for any selection of specific days and or time ranges. The driver must be able to divert from the planned sequence for turn-by-turn purposes. We need an overlay to display the planned/OPT route turn-by-turn compared to the actual GPS turn-by-turn. Visually able to see any deviation from planned route/sequencing. Ability to export reports for a full route, students not riding, or a student's AM/PM travel time	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf; Appendix S.2 - GIS Integration.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Details mapping, nav, overlay, reporting functions.
19	RFP-S3.2.4.a	The system shall implement an interactive visualization overlay that enables real-time and historical comparison between planned routes and actual GPS-tracked route execution data. This overlay system shall provide comprehensive route analysis capabilities with turn-by-turn comparisons, detailed deviation reporting, and customizable export functionality.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Specific visualization requirement.
20	RFP-S3.2.4.b	The visualization component shall render both the planned optimal route and actual GPS route data on the same map interface, using distinct visual indicators to clearly differentiate between them. The system shall implement color-coding to highlight route deviations, with severity indicators based on the magnitude of deviation from the planned route.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf					UI detail for visualization.
21	RFP-S3.2.4.c	For turn-by-turn analysis, the system shall display synchronized waypoint data showing planned versus actual route execution, including arrival times, dwell times, and sequence adherence. Each turn or stop shall be clearly marked with interactive elements that reveal detailed timing and deviation metrics upon user interaction.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Detailed data points for analysis.
22	RFP-S3.2.4.d	The system should maintain real-time tracking of student ridership status, displaying clear visual indicators for students who have not boarded as	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf;					Ridership integration into visualization.

		expected. The interface shall provide filtering capabilities to focus on specific segments of the route or particular time windows of interest.	Appendix M.1 - System Architecture.pdf				
23	RFP-S3.2.5	Must have the capability to use LION ArcGIS, which is a single-line representation of New York City streets containing address ranges and other information. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf			Specific GIS data integration.
24	RFP-S3.2.6	Time and location must be transmitted at intervals not to exceed one minute. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Section); Appendix M.1 - System Architecture.pdf			Performance NFR.
25	RFP-S3.2.7	Bus location must be transmitted in near real-time without latency issues. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Section); Appendix M.1 - System Architecture.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf			Performance NFR.
26	RFP-S3.2.8	Must provide an estimated time of arrival (ETA) to all destinations (student home/stop, school). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf (potentially)			Core functional requirement.
27	RFP-S3.2.9	Must automatically un-assign the driver from the route upon route completion. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow)			Automation feature.
28	RFP-S3.2.10	GPS should support the memory of the previous event user and prepopulate all fields, limiting the Driver's responsibility to a single action: Driver Route Vehicle and Garage association and Single-entry logon. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Usability); Appendix T.1 - User Onboarding and Training Strategy.pdf (Driver Experience)			Usability requirement for drivers.
29	RFP-S3.2.11	GPS units should be supported by an intelligent device monitoring system that lists all current GPS units in OPT possession and provides the inventory fields that include Make, Model, and Identification number. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.1 - System Architecture.pdf (Asset Management); Appendix M.2 - Solution Design			Asset management system requirement.

				Functional and Non Functional Requirements.pdf					
30	RFP-S3.2.12	School Bus Company (SBC) name assigned, SBC yard assigned, sent to the location, recipient name, sent to date, verification of operational date, name of person performing GPS operational concurrence, GPS operational license number, name of the carrier, the status of the device in service or not in service (in repair, sim card issue.	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Asset Data Fields)					Specific data fields for asset tracking.
31	RFP-S3.2.13	GPS is to have an SBC vendor certification of all devices were delivered and functioning as expected within 72 hours of receiving the GPS or associated hardware with 100% efficiency for all device features (software and hardware) at its shipped destination. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					Process requirement involving SBCs.
32	RFP-S3.2.14	OPT Operational team to be provided with test tools, including GPS Driver applications for creating a Route, driver, Vehicle association, along with GPS Dispatcher application GPS features application. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix N.3 - Engineering Approach.pdf					Testing/Support requirement for OPT.
33	RFP-S3.2.15	Must provide a detailed history of the time associated with bus motion: start, MPH, heavy braking, idle, and stop. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Data logging requirement.
34	RFP-S3.2.16	Must maintain functionality if the initial bus power source is lost and cannot entirely rely on device power as the redundant power source. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Reliability)					Hardware reliability feature.
35	RFP-S3.2.17	All devices must be inventoried, and current possession and history must be recorded and tracked, GPS data must be archived for 7 years.	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix S.1 - Data Governance and compliance controls.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Audit/Data Retention)					Asset Management & Data Retention NFR.

36	RFP-S3.2.18	Must deliver a detailed data retention policy as part of the proposal. The proposal must comply with the data retention section of Information Security Requirements version 1.5 (See Attachment A1). DOE reserves the right to release an updated data retention policy during the life of this contract. The proposer will need to adhere to this policy based on mutually agreed-upon terms within a prescribed timeline. (High)	<b>Yes</b>	Appendix S.1 - Data Governance and compliance controls.pdf; Appendix P.3 - Audit Framework.pdf					Policy & Compliance NFR. Proposal requirement noted.
37	RFP-S3.2.19	Must track student-level ridership information for CTS school age, STS, and CTS PreK/EI student base (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Ridership Module)					Core ridership scope.
38	RFP-S3.2.20	Must be able to indicate that an individual student's ridership should not be tracked if a parent/caregiver informs NYCPS that they wish their student to not participate. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.1 - Data Governance and compliance controls.pdf					Privacy/Consent feature.
39	RFP-S3.2.21	Vendors must submit a detailed rollout plan for the expedited installation of any GPS service-related devices, followed by the simultaneous rollout of routing software with routing integration. (High)	<b>Yes</b>	Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf					Proposal/Planning requirement.
40	RFP-S3.2.22	Must include the capability for an efficient and automated or semi-automated request process for installing, repairing, or transferring a device. (High).	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix N.2.1 - DevOps Strategic Framework.pdf (Automation)					Workflow efficiency requirement.
41	RFP-S3.2.23	Must have the ability to handle a minimum of 100 geofences for each GPS device and deliver near real-time alerts of the device entering and exiting of geofences. The geofence setup will allow the administrator to notify (alert) others when buses go into or out of a defined perimeter. Must record time, date and geofence name, even if near real-time alerting is not activated. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Geofencing/Alerting Service)					Geofencing functional and performance req.
42	RFP-S3.2.24	Must be designed to have the capability to accept GIS-related	<b>Yes</b>	Appendix M.1 - System Architecture.pdf; Appendix S.2 - GIS					Extensibility/Configurability NFR.

		configuration changes to improve Route Planning processes. (High)		Integration.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Adaptability)				
43	RFP-S3.2.25	Must have the capability to accept GIS-related configuration changes to improve ETA calculations for, e.g., average speed of routes in a road segment, official speed limits, etc. and must have the ability to update parameters as road conditions change. (High)	Yes	Appendix M.1 - System Architecture.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Adaptability); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Extensibility/Configurability NFR for ETA.
44	RFP-S3.2.26	Devices requiring SIM cards to be missing or to be replaced must be exclusively managed by the Device vendor and not by OPT or third-party user.	Yes	Appendix U.1 - Vendor and Third Party Management.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf				Support responsibility definition.
45	RFP-S3.2.27	Must have interactive web map capability to lay multiple map layers (maps must display geographical district lines, display OPT codes, etc. on existing map capability of the software (e.g., Hospitals, specific areas impacted by a disaster etc.). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf				Map layer functional requirement.

### 3.3 GPS Ground Support

46	RFP-S3.3.1	Vendors must have a trained technical work force to respond to field conditions requiring remote assistance or on-site technical work. Help desk facility capable of assisting driver/SBC Administrator/Mechanic to resolve an issue, or if unable to clear a problem, create a maintenance trouble ticket. (High)	Yes	Appendix X.1 - Team Structure and Processes.pdf; Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix U.1 - Vendor and Third Party Management.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf				Requires trained staff and help desk process.
47	RFP-S3.3.2	The trained technical workforce must be sized and located within the five (5) borough boundaries or close proximity (10 miles), enabling timely responses to school bus vendors' hardware and software issues. (High)	Yes	Appendix X.1 - Team Structure and Processes.pdf; Appendix U.1 - Vendor and Third Party Management.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf				Location and staffing level requirement.
48	RFP-S3.3.3	Vendor must have ample spare installation and repair equipment/s covering a minimum	Yes	Appendix U.2 - Hardware Lifecycle and Logistics				Logistics requirement

		of 10 business days to repair any related field condition related to SBC GPS service. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					for spare parts inventory.	
49	RFP-S3.3.4	The vendor must be able to offer next-day repair for up to 30 vehicles, three-day appointment for projects up to 30 vehicles, and a max of five-day appointment for projects greater than 30 vehicles for field conditions in all locations covered in this proposal. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (SLAs)					Specific repair SLA targets.	
50	RFP-S3.3.5	The vendor must have a manned assistance desk that can be contacted via mobile device, web access, text, or phone for remote support 24/7, 365 days. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.1 - Vendor and Third Party Management.pdf (Support); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf (Availability)					24/7 support availability requirement.	
51	RFP-S3.3.6	Vendor GPS Ground Support must be available to offer and schedule work at opportunities when school buses are mostly available during shift 9AM to 1 PM and after 4PM during normal school days, Saturday, Sunday, and Holidays. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Scheduling)					Scheduling constraints for support work.	
52	RFP-S3.3.7	Unresolved service issues impacting service will escalate to tier II support in 3 hours and will follow to tier III level support in 6 hours. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.1 - Vendor and Third Party Management.pdf (Support SLAs); Appendix Q.2 - Observability and Monitoring Strategy.pdf					Support escalation SLA (Service Impact).	
53	RFP-S3.3.8	Unresolved service issues affecting the business will escalate to tier III support immediately and will follow executive-level support in 6 hours. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.1 - Vendor and Third Party Management.pdf (Support SLAs); Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf					Support escalation SLA (Business Impact).	

### 3.4 Service Level Agreements (SLAs)

54	RFP-S3.4.1	Vendor will provide methodologies for proof of quality verification for workmanship and performance metrics that meet OPT standards. SLAs will be determined and agreed that failure to meet Quality verification and/or substandard craftsmanship or performance will result in penalties. (High)	<span style="background-color: #c8e6c9; border: 1px solid black; padding: 2px;">Yes</span>	Appendix U.1 - Vendor and Third Party Management.pdf (SLAs); Appendix R - Testing Strategy.pdf (Metrics); Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf (Quality)					Defines need for quality metrics, SLAs, and penalties.	
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55	RFP-S3.4.2	SLAs should include Installation and maintenance work actions, duration receipt to assignment, receipt to resolution group, Receipt to clear (customer informed service restored).	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (SLAs); Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing)					Specific metrics for support SLAs.
56	RFP-S3.4.3	There is an operational expectation that the GPS service will be continuous with minimal disruption or loss of service. For this purpose, a Quality Service Level of 99.999999% for the GPS integrated system function availability is mandated by an SLA. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Availability); Appendix M.1 - System Architecture.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (SLA)				Extremely high availability target ("eight nines").	
57	RFP-S3.4.4	Remote response time (receive the call and take corrective action by creating a ticket) within 5 minutes of request, 5:30 AM to 8:00 PM during days of regular NYC school operation, and 15 minutes of request outside of NYC school operations. (Medium)	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Support SLAs); Appendix Q.2 - Observability and Monitoring Strategy.pdf				Support response time SLA.	
58	RFP-S3.4.5	The vendor will provide a comprehensive post-mortem report with corrective actions to be taken to ensure the incident shall be avoided in the future. The report shall be produced within 48 hours of event resolution.	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf				Incident analysis and reporting requirement.	
59	RFP-S3.4.6	NYCPS expects that over 99% of buses in use will have fully functional GPS-enabled devices. (High)	<b>Yes</b>	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf				Operational target for device functionality.	
60	RFP-S3.4.7	Device must be supported with Primary (Device in-built power), Secondary (on-board Power) and tertiary (Portable Charger) (High)	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix M.1 - System Architecture.pdf				Redundant power sources requirement. Links to 3.2.16.	

### 3.5 GPS Service and System Support Reporting and Ticketing

61	RFP-S3.5.1	Vendors must provide a ticketing system that must integrate with NYCPS' ticketing system to manage all inquiries for assistance related to GPS service, including installation, removal, transfer, maintenance, and system support. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration); Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Ticketing system and integration requirement.
62	RFP-S3.5.2	System should include analytic data for resolution that includes, elements of ticket transfers, complete report close out issue details i.e., trouble found, (hardware, software,) trouble cause (defect type, software bug, user, install, accident, weather, maintenance, neglect, unknown) fix applied (No trouble found, reprogramed, replaced part (identify), replaced unit, etc. (High)	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Detailed data fields for ticket resolution analysis.
63	RFP-S3.5.3	Every request must be given an appointment confirmation at the time of ticket entry. (High)	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing Process); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Ticketing workflow requirement.
64	RFP-S3.5.4	Every request requires a separate ticket. If a request relates to Multiple units (devices/vehicles) in a single ticket, there must be a way to distinguish a ticket with multiple units' vs one unit (High)	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing Process/System Design); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Ticketing system design detail.
65	RFP-S3.5.5	Must have the capability to create a project for sets of 8 or more tickets for contracted School Bus vendors in a Borough, for which the date for work completion would be expected within SLA negotiable based on work. (High)	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing System Features); Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf					Project ticketing feature requirement.
66	RFP-S3.5.6	Must have a capability to include a description, comment, or other informative notation such as devices/vehicles and their components. These include: the unique identifying number of the device, the bus contractor fleet to which it was assigned, who made the request, the garage location where issue exist, ticket creation date, commitment date (i.e., time for ticket resolution), ticket closure date, request disposition, interim ticket status, and final	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing Data Fields); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific required data fields for tickets.

		ticket status for any ticket that would remain as part of the ticket history. (High)				
67	RFP-S3.5.7	Must be a capability for tickets to be modified in the event of an update to the request. Transfers between internal departments, i.e., call center to field support, field support to dispatch, dispatch to technical support ID, to resolution, for the full life cycle of the issue. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing Workflow/Audit); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf		Ticket modification and workflow tracking requirement.
68	RFP-S3.5.8	All tickets must be archived for the term of the contract or 7 years whichever comes first, whether completed or canceled. (High)	Yes	Appendix S.1 - Data Governance and compliance controls.pdf (Data Retention); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Data Retention)		Data retention requirement for tickets.
69	RFP-S3.5.9	Must have the capability to report on the duration time from ticket creation and intermediate status to closure. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Reporting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf		Reporting requirement for SLA tracking.
70	RFP-S3.5.10	Must have the capability for a daily dashboard of previous day results of: a. Total pending, total pending future, pending active for the day, completed for the day. b. Present day: total pending, total pending future, pending active for the day, and must have the capability of viewing ticket details for each group and issuing and completing the day before. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Dashboard); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf		Specific dashboard content requirement.
71	RFP-S3.5.11	Must be able to report on the disposition (problem, fix, cause) for the request. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Reporting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf		Reporting requirement linking to ticket data fields.
72	RFP-S3.5.12	Must be able to report the total number of tickets for the Month to Date. And Year to Date by ticket type and current status. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Reporting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf;		Trend reporting requirement.

			Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				
73	RFP-S3.5.13	Capability to sort and filter ticket reports including but not limited to by request description, school bus vendor, location of issue (garage), interim status, final status, disposition, date reported, and date closed, etc. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Reporting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Reporting usability requirement.
74	RFP-S3.5.14	Must be able to export ticket reports in a format compatible with 3rd party software. (Medium)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Interoperability)			Interoperability requirement.
75	RFP-S3.5.15	Must record each trouble call event in Trouble Ticket History as a status that is retrievable for analysis with trouble defect and cause. (High)	Yes	Appendix Q.2 - Observability and Monitoring Strategy.pdf (Ticketing Audit/History); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Data logging within ticket history.

### 3.6 Software Requirements - Parent / Caregiver and Student Module

76	RFP-S3.6.Intro	All end-authorized user modules must be built mobile-first and accessible on Android, iOS and other operating systems with responsive, user centric device agnostic, and other operating systems with a responsive, user-centric, device-agnostic design.	Yes	Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability/Accessibility)			Overall design principle for user-facing modules.
77	RFP-S3.6.1	Must provide a means for creating, removing, and changing authorized user's authentication and authorization as per the Authentication and Authorization subsections of Non-Functional Requirements. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (User Mgmt); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR AuthN/AuthZ)			User management functions linked to NFRs.
78	RFP-S3.6.2	Sign up functionality providing two separate levels of access, one for parents/caregivers, and one for students. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (User Mgmt); Appendix T.1 -			Functional requirement for user roles.

				User Onboarding and Training Strategy.pdf				
79	RFP-S3.6.3	Parents/caregivers must have the ability to send requests to the OPT Administrative Module for updates to student information, including but not limited to address changes or alternate PM drop-off address. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow)				Workflow between Parent and Admin modules.
80	RFP-S3.6.4	Parents/caregivers must have the ability to indicate that the student will not be riding the bus on a given day. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow/Ridership Integration)				Absence reporting feature.
81	RFP-S3.6.5	Parents/caregivers must be able to receive a notification when the student boards or disembarks. Parents/caregivers must be able to opt in and out of this functionality. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Notification Service); Appendix S.1 - Data Governance and compliance controls.pdf (Consent)				Ridership notification feature with opt-out.
82	RFP-S3.6.6	Students must have the ability to display a scannable code as their "boarding/bus pass" to record when they board or disembark. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Student Module); Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf (Implies Reader)				Student boarding pass feature.
83	RFP-S3.6.7	Parents/caregivers and students must be able to view a map display of the School Bus route and near real-time bus location, including the estimated time of arrival of the bus at the pickup point. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Mapping/ETA Service)				Core real-time tracking and ETA feature.
84	RFP-S3.6.8	Parents/caregivers and students must be able to receive notifications when the School Bus approaches the pickup location. They must be able to opt in or out of this functionality, as well as control the frequency of these notifications (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Notification/Geofencing Service); Appendix S.1 - Data Governance and compliance controls.pdf (Consent)				Proximity alert feature with configuration.

85	RFP-S3.6.9	Parents/caregivers and students must have the ability to provide feedback through the solution on either technical or routing issues. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Feedback System); Appendix Q.2 - Observability and Monitoring Strategy.pdf					In-app feedback mechanism.
86	RFP-S3.6.10	There must be optional web-based functionality for parents/caregivers and students who cannot access a smartphone. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Web Portal); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Accessibility)					Accessibility requirement via web.
87	RFP-S3.6.11	Must include options for multi-language selection (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Accessibility); Appendix M.1 - System Architecture.pdf (i18n)					Multi-language support NFR.
88	RFP-S3.6.12	Must have troubleshooting and self-help options, including an FAQ for reference, in case of module malfunction, to minimize need for support. (High)	<b>Yes</b>	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Usability)					Self-service support requirement.

### 3.7 Bus Driver Module

89	RFP-S3.7.Intro	The primary means for bus drivers and attendants to validate their details with a unique identifier and associate with a route. Other capabilities include alerts, messaging, and student tracking and troubleshooting.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Driver Module)					Overview of Driver Module purpose.
90	RFP-S3.7.1	The authentication system shall provide an enhanced login experience through intelligent credential management (certified or not certified) and biometric authentication integration. Upon initial user interaction, the system shall capture and securely store the username, with subsequent login attempts automatically populating this information to reduce user friction as per the Authentication and Authorization subsections of Non-Functional Requirements. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR AuthN/Usability); Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf					Enhanced authentication requirement.
91	RFP-S3.7.2	The system shall offer users the option to "Remember Me," which, when enabled, shall securely store both username and	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional					Details on "Remember

		encrypted password for future authentication sessions and clear stored credentials. To ensure authorized access, the system shall integrate with the device's native biometric authentication capabilities, including facial recognition and fingerprint verification where available. This integration shall occur through platform-specific APIs, maintaining compatibility with both iOS and Android operating systems while adhering to their respective security frameworks.		Requirements.pdf (NFR AuthN/Usability); Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf					Me" and Biometrics.
92	RFP-S3.7.3	The system shall implement an intelligent driver monitoring and analysis platform leveraging on-device machine learning capabilities to assess and evaluate driver behavior patterns in real-time. The system shall continuously collect and analyze behavioral telemetry data through device sensors and vehicle integration to identify driving patterns that may impact safety and efficiency.	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Advanced driver behavior monitoring (ML).
93	RFP-S3.7.4	The system shall process and analyze the behavioral parameters including but not limited to vehicle dynamics including acceleration, deceleration, speed patterns relative to posted limits and road conditions, braking force, turning behavior and cornering speeds, lane change patterns and frequency, traffic signal and stop sign compliance.	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific parameters for behavior analysis.
94	RFP-S3.7.5	The system shall utilize on-device machine learning models to create individualized driver behavior profiles based on historical patterns, generate real-time risk assessments based on current driving behavior, identify behavioral anomalies that deviate from established safe driving patterns, and provide predictive insights for potential safety concerns.	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific ML model outputs/goals.
95	RFP-S3.7.6	Route display (map view and text view) including turn-by-turn navigation (both audio and visual), constantly optimized to account for traffic conditions, emergencies, and changes in schedule (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing/Navigation); Appendix S.2 - GIS Integration.pdf					Core navigation feature with dynamic optimization.
96	RFP-S3.7.7	The system shall provide dispatchers with override capabilities to manage driver route compliance and authentication issues. The dispatchers must have the ability to intervene when: • A driver deviates from their assigned route • Authentication failures occur during	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin/Dispatcher					Dispatcher override functionalities.

		biometric or facial recognition verification • The system shall notify the dispatchers in real-time when a driver deviates from their assigned route. a. The system shall enable dispatchers to: o View the assigned route and actual route taken by the driver o Approve or reject route deviations o Document the reason for intervention o Override authentication failures for both biometric and facial recognition systems o Reset driver authentication parameters when necessary		Module); Appendix Q.2 - Observability and Monitoring Strategy.pdf			
97	RFP-S3.7.8	Two-way communication ability for alerts about traffic, bus breakdown, bad weather, or student misconduct from/ to NYCPS call center administrators and routers (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Messaging/Alerting Service); Appendix X.2 - Communications and Status Reporting Strategy.pdf			Two-way communication feature.
98	RFP-S3.7.9	Proactively inform stakeholders like OPT, or school about delays or other instances that may disrupt service. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting Service); Appendix X.2 - Communications and Status Reporting Strategy.pdf			Proactive delay notification feature.
99	RFP-S3.7.10	Transmit bus GPS location without latency. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix M.1 - System Architecture.pdf			Performance NFR (Latency).
100	RFP-S3.7.11	Display must include options for multi-language selection (Medium).	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Accessibility); Appendix M.1 - System Architecture.pdf (i18n)			Multi-language support NFR.
101	RFP-S3.7.12	Must have troubleshooting and self-help FAQs available in the official languages recognized by the NYCPS including but not limited to Arabic, Bengali, Chinese (Traditional and Simplified), French, Haitian Creole, Korean, Russian, Spanish, and Urdu and English to module malfunction, to minimize need for support, etc. while maintaining consistent functionality across including but not	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability/Accessibility)			Self-help support with specific languages. Browser req seems misplaced for driver module (likely app).

		limited to Chrome, Safari, and Edge web browsers (High)						
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### 3.8 Ridership Recording

102	RFP-S3.8.Intro	A system of digitally recording driver, attendant, roster of passengers, interface to GPS, recording boarding, disembarking, and attendance with required details listed below:	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Ridership Module)				Overview of Ridership Recording system.
103	RFP-S3.8.1	Drivers require a simplified interface to account for student presence/absence. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Usability); Appendix T.1 - User Onboarding and Training Strategy.pdf (Driver Experience)				Usability requirement for driver interface.
104	RFP-S3.8.2	Capture the name of the bus driver and attendant with their unique identifiers, and assigned bus route number, along with a timestamp for the record. List the pick-up stops of each student on the route and estimated time for pick up. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/Integration)				Data capture requirement for context.
105	RFP-S3.8.3.a	Special Education Category: Capture the name of the student boarding the bus via a device that does not require the intervention of the driver or attendant. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf (ID Reader); Appendix M.1 - System Architecture.pdf				Automated capture (scan) requirement for SE.
106	RFP-S3.8.3.b	Special Education Category: Capture the name of the student boarding the bus manually (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Driver Module UI)				Manual capture requirement (fallback) for SE.
107	RFP-S3.8.3.c	Special Education Category: Capture the actual time a student boards the bus, noting estimated time and tracking the difference. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Time capture and variance tracking for SE.
108	RFP-S3.8.3.d	Special Education Category: Capture the location of the student boarding bus. If the	Yes	Appendix M.2 - Solution Design Functional and Non Functional				Location capture and absence

		student does not board the bus, note the absence of the student. (High)		Requirements.pdf; Appendix M.1 - System Architecture.pdf (GPS Integration)					marking for SE.
109	RFP-S3.8.3.e	Special Education Category: List the student on arrival for school, home, or bus stop with all details specified in the four preceding requirements. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow)					Disembarking data capture requirement for SE.
110	RFP-S3.8.4.a	GE/Pre-K-EI category: Capability to read a physical ID presented by students as they board or disembark the bus, maintaining a record of location and time. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf (ID Reader); Appendix M.1 - System Architecture.pdf					Automated capture (scan) requirement for GE/PreK.
111	RFP-S3.8.4.b	Record the name of the student boarding the bus manually (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Driver Module UI)					Manual capture requirement (fallback) for GE/PreK.

### 3.9 School Module

112	RFP-S3.9.Intro	Map interface for school administrators, providing the following capabilities:	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (School Module)					Overview of School Module purpose.
113	RFP-S3.9.1	Must provide a means for creating, removing, and changing authorized user authentication and authorization as per the Authentication and Authorization subsections of Non-Functional Requirements. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (User Mgmt); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR AuthN/AuthZ)					User management for school users.
114	RFP-S3.9.2	Access to view student route assignment and account information (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (School Module/Data Access); Appendix P.1 - Security Strategy.pdf (RBAC)					Data view requirement for schools.

115	RFP-S3.9.3	Displays all bus route location and time for all vehicles, drivers, and students for a school destination in near real-time as defined in the Performance subsection of the Non-functional Requirements. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (School Module/Mapping/Real-time Data)				Real-time view for school admins.
116	RFP-S3.9.4	Ability to isolate a bus route and view location of vehicle, drivers, and ridership of students (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (School Module UI/Filtering)				Filtering/drill-down capability.
117	RFP-S3.9.5	Near real-time alerts to the module (both audio and visual) for any unexpected issues: bus delays, missed pickups, etc., including clear indication of vehicle(s) and students affected for routes assigned to travel to or from a school. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting Service); Appendix Q.2 - Observability and Monitoring Strategy.pdf				Alerting requirement for schools.
118	RFP-S3.9.6	Display near real-time system KPIs, including number of buses on active routes to school, or returning home from school, number of students on board, number of students waiting for pick up, school service on-time performance etc. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI Service); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				KPI dashboard for schools.
119	RFP-S3.9.7	Ability to report issues or problems to and accept replies from the OPT Administrative module. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow/Messaging); Appendix Q.2 - Observability and Monitoring Strategy.pdf				Communication workflow School <-> OPT Admin.
120	RFP-S3.9.8	Must have troubleshooting and self-help options (multi-language), including an FAQ for reference, in case of module malfunction, to minimize need for support. (High)	<b>Yes</b>	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability/Accessibility)				Self-service support requirement.

### 3.10 OPT Administrative Module

121	RFP-S3.10.Intro	Map interface for call center representatives, OPT administrators, and School Bus vendor employees, providing the following capabilities:	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin Module)					Overview of Admin Module purpose and users.
122	RFP-S3.10.1	Must provide a means for creating, removing, and changing authorized user authentication and authorization as per the Authentication and Authorization subsections of Non-Functional Requirements. This approach simplifies the management of permissions by assigning roles to users, which in turn have specific permissions associated with them. It ensures that only authorized users have access to the systems and if they leave the role or the organization, their access is withdrawn. (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (User Mgmt/RBAC); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR AuthN/AuthZ)					User/Role management for Admin module users.
123	RFP-S3.10.2	Must have the ability to differentiate users by persona (level) and scope (the data they are permissioned to view/update within the application). (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf (RBAC/Scope); Appendix M.1 - System Architecture.pdf (User Mgmt)					Granular access control requirement.
124	RFP-S3.10.3	Ability to display all bus and trip routes and the type and location of all vehicles, drivers, and students in near real-time as defined in the Performance subsection of the Non-functional Requirements. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin Module UI/Real-time Data)					Global real-time monitoring view.
125	RFP-S3.10.4	Ability to efficiently communicate with drivers, parents/caregivers, students, and school administrators directly from the administrative module to their respective modules (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Messaging Service); Appendix X.2 - Communications and Status Reporting Strategy.pdf					Central communication hub feature.
126	RFP-S3.10.5	Near real-time alerts to the module (both audio and visual) for any unexpected issues: bus delays, missed pickups, etc., including a clear indication of which vehicle(s) and students are affected. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting Service); Appendix Q.2 - Observability and Monitoring Strategy.pdf					Global alerting dashboard requirement.

127	RFP-S3.10.6	Record of vehicle idle time for buses with assigned bus routes designated to the school (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Data logging for idle time.
128	RFP-S3.10.7	System administrators should be able to determine frequency options for “approaching vehicle” notifications in the Parent/Caregiver and Student Module. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Configurability); Appendix M.1 - System Architecture.pdf (Admin UI/Config Mgmt)					Configuration setting for parent notifications.
129	RFP-S3.10.8	Must be able to display near real-time data within the application including but not limited to KPIs, including the number of buses on active routes, number of students on board, number of students waiting for pick up, system-wide on-time performance, etc. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI Service); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Global KPI dashboard requirement.
130	RFP-S3.10.9	Near real-time ‘Newsfeed’ of all events occurring across the service, i.e. pickups, drop-offs, no-shows, etc. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Event Stream/UI)					Activity feed requirement.
131	RFP-S3.10.10	Route “replay” capability for a specific set of days. The solution must return turn- by-turn replay of the route along with all information associated with the route (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Query/Visualization)					Route replay analysis tool.
132	RFP-S3.10.11	Administrative ability to create and configure alerts based on specific GIS related events including but not limited to traffic, accidents and weather prescribed by DOE administrators. These alerts will be delivered to internal OPT operations so that they can respond to these events. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting/GIS Integration); Appendix S.2 - GIS Integration.pdf					Internal alerting based on external GIS events.
133	RFP-S3.10.12	Administrative ability to create and configure alerts, including robocalls, based on specific GIS-related events, including but not limited to traffic, accidents, and weather prescribed by DOE administrators. These alerts will be delivered to external stakeholders like authorized Parents/caregivers,	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting/GIS Integration/External					External alerting (incl. robocalls) based on external GIS events.

		drivers, and students so that they can respond to these events. (High)	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Comms); Appendix X.2 - Communications and Status Reporting Strategy.pdf					
134	RFP-S3.10.13	Ability to configure speed limits, add new street segments, and update street directions (for e.g. one-way streets) to optimize route planning, bus stop ETA calculations etc. (High)	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Config Mgmt)					Map data editing/configuration capability.
135	RFP-S3.10.14	Create geo fences and provide start and end time as inputs to this capability. The solution must return all routes which would pass through one or more geo fences during that period. (Medium)	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Geofence-based route analysis query.
136	RFP-S3.10.15	T Administrator capability to deny or grant access to other users including Data of other companies.	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix P.1 - Security Strategy.pdf (RBAC/Permissions); Appendix M.1 - System Architecture.pdf (Admin UI/User Mgmt)					Admin access control over other users/company data.
137	RFP-S3.10.16	User Access list that contains Username, Company, Agency, Department, Title, PET PRI/ EIN for identification, Address/location, reach Number, and email address	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (User Profile Data Model)					Specific user profile data fields required.
138	RFP-S3.10.17	Vendor and user access to review and reset Driver ID capability and credential (password) capability.	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/User Mgmt)					Driver credential management by admins.
139	RFP-S3.10.18	Display driver, route association, and vehicle, in near real-time	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Real-time Data)					Real-time display requirement.
140	RFP-S3.10.19	Display driver route association status (i.e., not active, route activated)	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI)					Status display requirement.
141	RFP-S3.10.20	Display notification list in near real time of failed route association	<span style="background-color: #c8e6c9; border-radius: 50%; padding: 2px 5px;"></span>	Appendix M.2 - Solution Design Functional and Non Functional					Real-time error notification display.

		attempts identifying SBC, Driver and interaction time.		Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Alerting); Appendix Q.2 - Observability and Monitoring Strategy.pdf					
142	RFP-S3.10.21	Maintain exportable data history for Driver route association details.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Data logging and export requirement.
143	RFP-S3.10.22	Real Time display of Driver Route association that includes Student Ridership engagement or missed/absent rider,	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Integration)					Integrated real-time display (Association + Ridership).
144	RFP-S3.10.23	Remote capability by SBC or OPT Administrator to modify a Drivers, Route association, or vehicle	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Workflow); Appendix P.1 - Security Strategy.pdf (RBAC)					Operational intervention capability.
145	RFP-S3.10.24	Ability to search for Driver, Route Vehicle or Student independently and retrieve system details	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Search Service)					Search functionality requirement.
146	RFP-S3.10.25	List active vehicles with route association breakdowns (out of service)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Asset Integration)					Vehicle status display requirement.
147	RFP-S3.10.26	Display GPS with route association with battery power lower than 15% charged	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Monitoring); Appendix Q.2 - Observability and Monitoring Strategy.pdf					Device low battery display/alert.

148	RFP-S3.10.27	Display GPS with route association that have lost communication longer than 5 minutes during route start through completion	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Monitoring); Appendix Q.2 - Observability and Monitoring Strategy.pdf					Device connectivity loss display/alert.
149	RFP-S3.10.28	Provide Map where SBC OPT Administration can visually select and view all Routes GPS locations, or select a Route with GPS associated details (speed, direction, next scheduled destination)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Mapping); Appendix S.2 - GIS Integration.pdf; Appendix P.1 - Security Strategy.pdf (RBAC for SBC view)					Map-based monitoring UI for Admins/SBCs.
150	RFP-S3.10.29	GPS data allowing for history search a specific address or intersection at a determined time or time frame	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Search/GIS)					Historical spatial-temporal search.
151	RFP-S3.10.30	Real Time view of Routes scheduled for the day	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Routing Integration)					Operational overview display.
152	RFP-S3.10.31	Display count of all Driver associated routes that are in progress	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI Service)					Real-time KPI.
153	RFP-S3.10.32	Near time real time display count of all Driver associated routes that are pending activation	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI Service)					Real-time KPI.
154	RFP-S3.10.33	Near real time display count of all Driver associated routes that have been completed	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System					Real-time KPI.

				Architecture.pdf (Dashboard/KPI Service)			
155	RFP-S3.10.34	Near real time display of total count and percentages for all Driver associated routes pending activation, in progress, and have been completed.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI Service)			Real-time KPI dashboard summary.
156	RFP-S3.10.35	All Real time display data for total count and percentages for all Driver associated routes pending activation, in progress, and have been completed emailed to SBC at AM designated time and PM designated time	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Reporting/Email Service); Appendix X.2 - Communications and Status Reporting Strategy.pdf			Automated email reporting to SBCs.
157	RFP-S3.10.36	Driver details displaying all associated routes historical data showing routes started and uncompleted and routes completed.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf			Historical reporting per driver.
158	RFP-S3.10.37	Driver details for affiliated SBC with associated management name, reach number and email	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Integration/User Profile)			Data integration/display requirement.
159	RFP-S3.10.38	SBC list of all affiliated Drivers names, ID, and associated routes	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix P.1 - Security Strategy.pdf (RBAC)			Reporting requirement for SBCs.
160	RFP-S3.10.39	Display all current KPI Prior day, Week to date, Month to date year to date for Operational data (Installation Tickets, Routes for overall OPT performance for each individual SBC.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Dashboard/KPI)			KPI dashboard with historical trends and SBC filter.

161	RFP-S3.10.40	Search Engine that provides statistical performance history data for Driver associated route completion.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Search/Reporting for driver performance analysis.
162	RFP-S3.10.41	Search capability that provides statistical performance report history for Driver associated with a route experiencing Lost Signal from GPS device	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf				Search/Reporting linking performance to connectivity issues.
163	RFP-S3.10.42	Search capability that provides performance report history for Driver associated with a route experiencing low battery from GPS device	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf				Search/Reporting linking performance to low battery issues.
164	RFP-S3.10.43	Must have troubleshooting and self-help options (multi-language), including an FAQ for reference, in case of module malfunction, to minimize need for support. Must have the capability to override this functionality in the other modules (High)	<b>Yes</b>	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Config Mgmt)				Self-help support for Admin module with override capability.
165	RFP-S3.10.44	Must include an interface for generating and reviewing canned and customized reports, with the following requirements. For additional information regarding OPT's reporting needs, please refer to NYC Council Legislation (see Attachment 6):	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Reporting interface requirement, references external legislation.
166	RFP-S3.10.45	All reports and live (near real-time) data must be able to be filtered by SBC, garage, school, geographic district of the school (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Universal filtering requirement for reports/data.
167	RFP-S3.10.45.a.i	Canned Reports: All data required for such reports must reside within the proposed solution. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Data Strategy); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Data source constraint for canned reports.

168	RFP-S3.10.45.a.ii	Canned Reports: The data for the reports must be retrievable, filterable, and sortable by attribute, including but not limited to: Garage associated to route, Student Name, Pick-up Location, Destination, Time of Arrival, Time of Departure, Estimate Arrival Time (ETA) (High).	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Specific filter/sort attributes for canned reports.
169	RFP-S3.10.45.a.iii	Canned Reports: Data available to DOE in a format of NYCPSCS choosing, data fields including but not limited to Vendor Name, Route Type, Route Number, Vehicle Type, Start Time, End Time, the actual path covered to complete the route and Miles travelled for route completion. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Specific data fields and format flexibility for DOE export.
170	RFP-S3.10.45.a.iv	Canned Reports: Reports and the underlying data must be exportable for use in third-party analytical applications. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Interoperability)					Export capability requirement.
171	RFP-S3.10.45.a.v	Canned Reports: Reporting must be mechanized and derived daily, weekly, monthly and yearly. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Scheduler); Appendix N.2.1 - DevOps Strategic Framework.pdf (Automation); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Automated report generation requirement.
172	RFP-S3.10.45.b.i	Customized reports: All requirements specified under section 3.3.5.16.a Canned Reports. (High) [Typo in RFP, likely means 3.10.45.a]	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Baseline requirements for custom reports.
173	RFP-S3.10.45.b.ii	Customized reports: Must have the capability to report at a finer level of granularity. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Flexibility requirement for custom reports.
174	RFP-S3.10.45.b.iii	Customized reports: Must have the capability to limit report-generating	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional					Access control requirement for custom reporting.

		functionality to authorized users. (High)		Requirements.pdf; Appendix P.1 - Security Strategy.pdf (RBAC); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				
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### 3.11 Student Management (and backend) System

175	RFP-S3.11.Intro	A system that maintains student details to ensure transportation attributes required for accurate service. Must include required data modifications as listed below:	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Student Data Model/Service)				Overview of Student Management system purpose.
176	RFP-S3.11.1	Synchronized as needed with the NYCPS' student, parent, and other databases (NYC School Account, OPT DBs, OPT Administrative Application including but not related to NYCPS Administrative Systems) (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix S.1 - Data Governance and compliance controls.pdf				Data synchronization requirement with multiple NYCPS systems.
177	RFP-S3.11.2	Seamlessly integrated with the Parent/Caregiver and Student Module: Parents/caregivers can update School Bus enrollment through the module. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Integration with Parent module for updates.
178	RFP-S3.11.3.a	Simple interface for updating student transportation needs throughout the year including: Adjustments made by NYCPS administrators, such as home location changes for students living in City shelters (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (Admin Module)				Admin interface for student data updates.
179	RFP-S3.11.3.b	Simple interface for updating student transportation needs throughout the year including: Adjustments made by parents/caregivers through their app pertaining to same day cancellations due to absences (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Parent Module Feature); Appendix M.1 - System Architecture.pdf (Integration)				Parent app feature integration (absence reporting).
180	RFP-S3.11.3.c	Simple interface for updating student transportation needs throughout the year including: Adjustments made by school administrators for children who have joined/ left the school (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (School Module Feature?); Appendix M.1 - System Architecture.pdf (School Module/Admin Module)				School admin interface for enrollment updates.
181	RFP-S3.11.4	Must continuously analyze all student information (home location, school location, targeted arrival time, special	Yes	Appendix M.1 - System Architecture.pdf (Routing Engine/Data Analysis);				Backend analysis for route

		student instructions, etc.) to create and suggest optimized routes that serve all student populations (Medium)	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					optimization input.
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### 3.12 Adaptive/Dynamic Routing Software

182	RFP-S3.12.Intro	Route creation as a result of a known established base of ridership and available route intelligence, capable of implementing an override during a route run time due to mapping data, ridership change, AI learned behavior, or other information that warrants a route change. The software attributes include historical route and student retention, data analysis, reporting, simultaneously managing multiple scheduled routing sessions, and storage of the calendars for each school. Dynamic routing is always executed to the advantage or improvement of the student transportation experience and the stability of the student's service. If the Vendor's solution necessitates a change in the roles and responsibilities of OPT, schools, or bus contractors, the Vendor will work with OPT to facilitate the transition.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf (Change Mgmt)				Overview of the dynamic routing system goals and capabilities.
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#### 3.12.1 Core Functionality - General

183	RFP-S3.12.1.a.i	Authorized users will not need to leave the routing system to locate ridership or student information. This includes home addresses, grades, medical needs, all pertinent data fields, turn by turn GPS, route overlay, etc. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Usability/UI); Appendix M.1 - System Architecture.pdf (Admin Module Integration)				"Single pane of glass" UI requirement for routers.
184	RFP-S3.12.1.a.ii	Must design the solution to be able to automatically assign an itinerary type for each trip, such as AM, PM, ALT PM, Field Trips, After-school etc. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/Workflow)				Automated trip type assignment.
185	RFP-S3.12.1.a.iii	Must be capable of routing all students together, including but not limited to categories such as GE, SE, STH, Foster, PSC, Capping, After-School, Pre-K/EI, Field Trips etc. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Capabilities)				Unified routing across all student types. Core complexity.

186	RFP-S3.12.1.a.iv	Must be capable of integrating existing Field Trip application or assign Field Trips based on current routes that are available. The system must show the availability of routes to be used for each trip while keeping in mind early dismissals / conflicts / business rules (district rules) built into Field Trips.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Integration/Routing Logic); Appendix O.1.1 - Project Execution Roadmap.pdf (Integration Approach)					Field trip routing integration or functionality.
187	RFP-S3.12.1.a.v	Must be capable of creating a Pre-K routing platform for vendors to manage Pre-K routes, and transportation users must have the visibility to view all Pre-K routes / students.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor Portal/Integration); Appendix U.1 - Vendor and Third Party Management.pdf					Separate Pre-K platform for vendors with OPT visibility.
188	RFP-S3.12.1.a.vi	Must provide SBC staff with ability to view routes assigned to the SBC (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor Portal/Admin Module); Appendix P.1 - Security Strategy.pdf (RBAC)					SBC view-only access to routes.
189	RFP-S3.12.1.a.vii	The system shall implement a secure, SBC-specific mapping interface that provides real-time visualization and dynamic route modification capabilities exclusively for vehicles within each vendor's fleet, enabling rapid response to emergency situations and changing road conditions. The interface shall sync with the school administer console to minimize the friction between schools and SBCs. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor Portal Features); Appendix P.1 - Security Strategy.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					Advanced SBC interface with modification rights & sync.
190	RFP-S3.12.1.a.viii	Must have the ability for contracted vendors to view routes and suggest changes to headcounts and stop times. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor Portal Features); Appendix U.1 - Vendor and Third Party Management.pdf					SBC feedback mechanism on routes.
191	RFP-S3.12.1.a.ix	Must have the ability for contracted vendors to view and print route sheets. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor					Basic SBC functionality (print route sheets).

				Portal Features); Appendix U.1 - Vendor and Third Party Management.pdf				
192	RFP-S3.12.1.a.x	Must have the ability to adjust the routes that the driver is performing dynamically in near real-time to respond to live realities on the streets, such as traffic conditions, road closures, extreme weather conditions, etc., without deviating from OPT scheduling/sequencing. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine/Real-time Adjustments)				Core dynamic routing capability.
193	RFP-S3.12.1.a.xi	Must have the ability to retain 7 years of historical student and routing data to generate predefined reports and inquiries that support day-to-day operations and management analysis of trends. Must be able to provide reports on present data as well as future data. (High)	Yes	Appendix S.1 - Data Governance and compliance controls.pdf (Data Retention); Appendix M.1 - System Architecture.pdf (Data Model/Reporting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Data retention and reporting requirement for routing data.
194	RFP-S3.12.1.a.xii	Must have the ability to accommodate students who require transportation to multiple locations within the same day (i.e., Alternate PM locations, for example, picked up at home, attends school at one location, attends an after-school program at another location (ALT PM), and requires transportation home from the after-school program at the end of the day). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Logic/Data Model)				Complex routing scenario (multi-leg).
195	RFP-S3.12.1.a.xiii	Must have the ability to accommodate students who require transportation to/from multiple addresses based on time of day or day of the week due (for example, students who are picked up at one parent's address in the morning but dropped off at their other parent's address in the afternoons or are picked up/dropped off at one address Monday through Thursday and another address on Fridays). (Dual Custody agreements) (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Logic/Data Model)				Complex routing scenario (conditional addresses).
196	RFP-S3.12.1.a.xiv	Must be capable of integrating with upstream systems (e.g. vehicle, contract, vehicle information, student record, SSO apps) to utilize the master data as input for routing planning. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf				Upstream data integration requirement.

197	RFP-S3.12.1.a.xv	Must have the capability of managing Fall and Summer routes separately for different programs such as After School programs, Field Trips, Pre-k/EI as the 2 (two) are separate processes with often overlapping timelines. The user must have the ability to select the term they would like to work in. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/UI)					Data partitioning by term (Fall/Summer).
198	RFP-S3.12.1.a.xvi	Must be able to configure notifications according to the routing workflow. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting/Workflow Config)					Configurable workflow notifications.
199	RFP-S3.12.1.a.xvii	Must be able to store each school's calendar for internal users, schools, finance, and vendors (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/Integration)					School calendar storage requirement.
200	RFP-S3.12.1.a.xviii	Must have the ability to store student and parent/caregiver contact information for regular and summer school staff. (Low) Needed	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model)					Requirement phrasing is ambiguous (student/parent info for staff?). Addressed as storing contact info.
201	RFP-S3.12.1.a.xix	Must have an ability to display number, types, and attributes of vehicles serving each school OPT Code. (Low) Needed	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Integration/UI)					Display requirement for vehicle info per school.
202	RFP-S3.12.1.a.xx	Must have an ability to automatically display all schools located at a single physical location with their session times when displaying the routes of one of the schools and all schools within a district, region or borough.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI Feature); Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (UI/Data Query)					UI feature for co-located schools / area context.

### 3.12.1 Core Functionality - Map

203	RFP-S3.12.1.b.i	Must have a map-based platform to geocode and display points (schools, stops, students), lines (routes, streets)	<b>Yes</b>	Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Mapping)					Core GIS mapping capability requirement.
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		and polygons (borough boundaries, district boundaries). (High)		Component); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				
204	RFP-S3.12.1.b.ii	Must be able to display updated stop arrival times based on actual patterns derived from the GPS data. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (ETA/Data Analysis)				Predictive ETA based on historical GPS.
205	RFP-S3.12.1.b.iii	Must be able to derive information from existing internally generated spatial data. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Integration)				Integration with potentially custom internal GIS data.
206	RFP-S3.12.1.b.iv	Must have the ability to display street names and allow for dynamic labeling of other spatial data. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI)				Map usability requirement (labels).
207	RFP-S3.12.1.b.v	Must have the ability for authorized users to filter what is displayed on the map based on customizable parameters (such as specific medical alert codes, out-of-item routes, routes served by specific vehicle types). Additionally, the system must provide a means of turning the view of spatial data elements on and off to see data in different combinations. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI); Appendix M.1 - System Architecture.pdf (UI/Filtering)				Map filtering and layer control requirement.
208	RFP-S3.12.1.b.vi	Must allow the authorized users to perform attribute/tabular queries in addition to spatial queries (e.g., near, within, contained, least cost path). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Search/Query Engine)				Advanced spatial and attribute query capability.
209	RFP-S3.12.1.b.vii	Must have the ability to display all medical alert codes and other codes on the map. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI); Appendix S.2 - GIS Integration.pdf				Map display requirement for coded data (e.g., student needs).
210	RFP-S3.12.1.b.viii	Must allow authorized users to regularly edit the base maps with new polygons, roads, updated street speeds, roadblocks, travel and location	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf;				Map editing capability requirement.

		restrictions and other data that influences routing. (Medium)		Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Admin UI/Config Mgmt)					
211	RFP-S3.12.1.b. ix	Must have the ability to display 7 years of student and routing data on the map-based viewing platform. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.1 - Data Governance and compliance controls.pdf; Appendix M.1 - System Architecture.pdf (Data Archival/Query); Appendix S.2 - GIS Integration.pdf					Historical data visualization on map. Performance challenge.
212	RFP-S3.12.1.b.x	Must have the ability to display district, borough, and county boundaries, and use existing boundary data. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Map Layers)					Map layer requirement for boundaries.
213	RFP-S3.12.1.b.xi	Must have an ability to view the maps for New York, New Jersey, and Connecticut that are continuously maintained and updated on a street level by the contracted vendor. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Map Data Provider)					Base map coverage and update requirement.
214	RFP-S3.12.1.b.xii	Must have the ability for contracted vendors to view routes on the map. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Vendor Portal); Appendix P.1 - Security Strategy.pdf (RBAC)					SBC map view requirement.

### 3.12.1 Core Functionality - Authorized users Access/Accounts

215	RFP-S3.12.1.c.i	Must provide a means for creating, removing, and changing authorized user authentication and authorization as per the Authentication and Authorization subsections of Non-Functional Requirements (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf (User Mgmt); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR AuthN/AuthZ)					User management for routing users.
216	RFP-S3.12.1.c.ii	Must allow multiple authorized users to view, modify, and retrieve information simultaneously, with a limitation of one authorized user modifying records/routes at a given time. (High)	Yes	Appendix M.1 - System Architecture.pdf (Concurrency Control); Appendix M.2 - Solution Design Functional and					Concurrency control / Record locking requirement.

				Non Functional Requirements.pdf (NFR)				
217	RFP-S3.12.1.c.iii	Must have an ability to capture and display an audit trail (authorized users, timestamp, and description of change) for any changes made to a route (added or deleted stops, sequence changes, changes in schools served, etc.) or any other data. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Audit Trail); Appendix M.1 - System Architecture.pdf (Auditing Service); Appendix S.1 - Data Governance and compliance controls.pdf				Audit trail for all routing data changes.
218	RFP-S3.12.1.c.iv	Must have the ability to configure alerts according to the authorized users' specific needs. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting Config UI)				User-configurable alerts.
219	RFP-S3.12.1.c.v	Must provide the ability to support secure public access by external stakeholders, such as parents/caregivers. (Medium)	Yes	Appendix M.1 - System Architecture.pdf (Parent Module); Appendix P.1 - Security Strategy.pdf				Likely met via Parent Module (3.6), not direct routing access.

### 3.12.1 Core Functionality - System and Data Integration

220	RFP-S3.12.1.d.i	Must be capable of integrating with relevant NYCPS administrative systems for students requiring stop-to-school transportation / curb to school transportation or provide another means for importing student data requiring a school bus transportation service for the details part of the service record. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf				Student data integration (STS/CTS).
221	RFP-S3.12.1.d.ii	Must integrate with any NYCPS OPT existing applications and systems for student enrollment, data, IEPs, non-public schools, and NYC Department of Health data networks for students requiring Curb-to-School transportation or provide another means for importing student data. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix S.1 - Data Governance and compliance controls.pdf (IEP/Health Data)				Broader data integration (IEP, DOHMH etc.).
222	RFP-S3.12.1.d.iii	Must be capable of integrating onboard GPS, ridership reporting, vendor and bus staff information, and video technologies from multiple contracted vendors to know actual stop times, route paths, and numbers of students utilizing the bus so that necessary adjustments can be made. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix U.1 - Vendor and Third Party Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Integration with operational data feeds (GPS, ridership, future video).
223	RFP-S3.12.1.d.iv	The system shall implement a data integration platform that processes and exports specified operational data	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy -				Outbound data integration for

		elements to support NYCPSC's payment processing requirements. This integration shall enable automated data extraction and transformation according to NYCPSC's requested formats while maintaining data accuracy and completeness.	<b>Yes</b>	Outbound); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix Y.1 - Budget Management.pdf (Ref Payment)				payment processing.
224	RFP-S3.12.1.d.v	Must be capable of integrating multiple session times of a school. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Data Model); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Data model requirement for session times.
225	RFP-S3.12.1.d.vi	Must provide a capability to integrate students' stop assignments with the downstream system(s) such that a student's stop assignment can be viewed by schools, parents/caregivers, and customer service staff. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration Strategy - Downstream); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Downstream integration for stop assignment visibility.
226	RFP-S3.12.1.d.vii	It must provide the capability to integrate with both upstream and downstream systems NYCPSC administrative systems. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration Strategy)				General reiteration of broad integration need.
227	RFP-S3.12.1.d.viii	Must be able to send emails to schools and parents/caregivers regarding students' route assignments and changes to routes. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Notification/Email Service); Appendix X.2 - Communications and Status Reporting Strategy.pdf				Outbound email notification requirement.

### 3.13 Stops

#### 3.13 Stops - General

228	RFP-S3.13.a.i	All stops must align with current / existing routed / un-routed stops per OPT code citywide.	<b>Yes</b>	Appendix S.2 - GIS Integration.pdf; Appendix S.1 - Data Governance and compliance controls.pdf (Data Migration/Alignment)				Data consistency/migration requirement for stops.
229	RFP-S3.13.a.ii	The stop management platform OPT199, its core functionality, and its policy algorithm will need to be integrated or replaced.	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration/Replacement Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf				Legacy system (OPT199) handling requirement.
230	RFP-S3.13.a.iii	The system must automatically approve or deny stop requests made by schools that align with OPT regulations/policy/algorithm, but the parameters can easily be updated as policies shift.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Rules				Automated stop request processing based on configurable rules.

				Engine/Workflow); Appendix S.1 - Data Governance and compliance controls.pdf			
231	RFP-S3.13.a.iv	For STS, different stop types will require an identifier, or the existing stop numbers will be carried over.	Yes	Appendix M.1 - System Architecture.pdf (Data Model); Appendix S.2 - GIS Integration.pdf			Data modeling requirement for STS stop types.
232	RFP-S3.13.a.v	STS stops are generally created as intersections.	Yes	Appendix M.1 - System Architecture.pdf (Routing/Stop Creation Logic); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Business rule for STS stop placement.
233	RFP-S3.13.a.vi	The system must propose routes for the un-routed stops to a compatible route automatically or manually by authorized OPT staff based on selection criteria, such as session time of the school being served, seating capacity of the route, number of students on the bus at that time, number of the students at the stop, etc. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Suggestion Engine)			Route assignment suggestion feature for new stops.
234	RFP-S3.13.a.vii	New stops should be available to route immediately and all stops, students and route changes such as stops added, stop times changed, stops switched, etc. must be visible immediately in the routing system and communicate with integrated/related applications. (High)	Yes	Appendix M.1 - System Architecture.pdf (Real-time Data Propagation); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance)			Real-time data consistency requirement.
235	RFP-S3.13.a.viii	Must provide a means to change the location of an existing stop rather than adding a new stop to better accommodate students; while ensuring OPT policies and regulations are built into the stop management solution. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Stop Mgmt UI); Appendix M.1 - System Architecture.pdf (Workflow/Rules Engine); Appendix S.2 - GIS Integration.pdf			Stop location editing feature with policy checks.
236	RFP-S3.13.a.ix	Must prevent any student that is entered into the system from being accidentally assigned to a deactivated stop, the wrong transportation type, or an unapproved stop/exception stop. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Validation Rules); Appendix S.1 - Data Governance and compliance controls.pdf			Validation rule for student stop assignment.
237	RFP-S3.13.a.x	Must have the ability to send a notification to schools and parents/caregivers about new, changed, or deleted stops. (Medium)	Yes	Appendix M.1 - System Architecture.pdf (Notification Service); Appendix X.2 -			Communication requirement for stop changes.

				Communications and Status Reporting Strategy.pdf					
238	RFP-S3.13.a.xi	Must allow the authorized users to perform stop searches based on customizable buffers. (Low)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Search/Query Engine)					Spatial search feature (buffer search).
239	RFP-S3.13.a.xii	Must have the ability to define start and end dates for temporary stops, and to provide future start dates. (Low)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model - Effective Dating)					Stop lifecycle management (temporary/future stops).
240	RFP-S3.13.a.xiii	School users and transportation users must have the ability or platform to manage/view bus stops per OPT code. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (School/Admin/Vendor Modules); Appendix P.1 - Security Strategy.pdf (RBAC)					Role-based access to stop management/viewing.
241	RFP-S3.13.a.xiv	Transportation users must be able to display all assigned students, unassigned students, stops, and routes per the OPT code on the map. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin Module UI); Appendix M.1 - System Architecture.pdf (Mapping/Data Query)					Detailed map view for transportation users (per school).
242	RFP-S3.13.a.xv	The system must have the capability to have default "effective dates" for new stops, students, and routes that transportation users can edit. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI/Config); Appendix M.1 - System Architecture.pdf (Data Model - Effective Dating)					Default effective dating with override capability.

### 3.13 Stops - Optimization Capabilities

243	RFP-S3.13.b.i	STS must be able to auto-create stops in the most optimal location based on student addresses (primarily located at intersections) and configurable parameters (such as distance between stops, distance between school and nearest stop, etc.) without the need for outside input.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing/Stop Generation Algorithm); Appendix S.2 - GIS Integration.pdf					Automated STS stop generation based on optimization.
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244	RFP-S3.13.b.ii	Transportation users must be able to display existing stops for a specific OPT code on the map for stop planning, route optimization, and search/ filter capabilities.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin Module UI); Appendix M.1 - System Architecture.pdf (Mapping/Data Query)					Map view for planning/optimization context.
245	RFP-S3.13.b.iii	The system shall implement a route optimization engine (dynamic routing) that evaluates and modifies existing driver routes to accommodate additional ride requests while maintaining optimal routing. This dynamic routing capability shall analyze current routes, evaluate modification opportunities, and implement route changes based on new student(s) pick up requests that fall outside the driver's standard route.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)					Core dynamic routing insertion logic.
246	RFP-S3.13.b.iv	The route optimization engine shall perform continuous analysis of active route to determine optimal modification points by evaluating multiple factors: current traffic conditions, estimated arrival times, students' time constraints, and overall journey efficiency. When processing new route requests, the system shall calculate the most efficient pickup sequence while ensuring minimal impact on existing commitments.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Detail on dynamic routing algorithm inputs/logic.
247	RFP-S3.13.b.v	The system must have different filters and map layers where users can hide/unhide data on the map.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI); Appendix M.1 - System Architecture.pdf (UI/Filtering)					Map layer/filter control.
248	RFP-S3.13.b.vi	There must be a "comments" section for internal users to update and for bus companies and drivers to view.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Comments Feature/Module); Appendix X.2 - Communications and Status Reporting Strategy.pdf					Communication feature (comments). Context needed (stop/route?).
249	RFP-S3.13.b.vii	Users must be able to perform "bulk actions" manually or automatically for stop assignments, routing stops, un-routing stops, creating routes, etc. The OPT public and non-public calendars must be integrated into the application in some form. Users must be able to search by OPT code, student ID#, route number, district, borough,	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Bulk Actions/Search/Calendar Integration); Appendix N.2.1 - DevOps Strategic					Bulk actions, calendar integration, and specific search criteria requirement.

		ambulatory code, MA code, exceptions, etc.	Framework.pdf (Automation)				
250	RFP-S3.13.b.viii	Users must be able to review headcounts for STS and a capacity breakdown for CTS (N, L, W, V, CK, para, etc.)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (UI/Data Query); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf			Headcount and capacity review feature.
251	RFP-S3.13.b.ix	The system must be able to propose new stop times, re-sequencing routes, and propose compatible combinations of schools, stops/students for new routes.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Optimization Features)			Routing optimization suggestion capabilities.
252	RFP-S3.13.b.x	For new stops/students that have yet to be routed, there must be a district flag or "un-routed" queue. The system must track the days these records are on the "flag."	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow/Queue Management)			Workflow management tool for unrouted items.
253	RFP-S3.13.b.xi	Each OPT code can only view its stops, routes, and student data. Schools shall not share stops; all existing stops will be grandfathered/imported into the system.	Yes	Appendix P.1 - Security Strategy.pdf (RBAC/Data Scoping); Appendix M.1 - System Architecture.pdf; Appendix S.1 - Data Governance and compliance controls.pdf (Data Migration)			Data access control rule by OPT code / School. Stop sharing rule.
254	RFP-S3.13.b.xii	For CTS, the system must automatically create stops at the home address of any students requiring Curb-to-School transportation, which includes Alternate PM locations that may be subject to change throughout a given week. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Stop Creation Logic); Appendix S.2 - GIS Integration.pdf			Automated CTS stop creation at home/Alt PM address.
255	RFP-S3.13.b.xiii	ALT PM drop-offs are for CTS students with IEPs only and can only be approved if the address is within the same borough as the school or home residence. OPT reviews these requests on a case-by-case basis.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow/Rules Engine); Appendix S.1 - Data Governance and compliance controls.pdf			Business rules and workflow for Alt PM stop approval.

256	RFP-S3.13.b.xiv	Using OPT's parameters, one must be able to calculate walking distances (grade/distance eligibility) to determine optimal stop locations and determine whether a student can be assigned to an existing stop. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Eligibility/Assignment Logic); Appendix S.2 - GIS Integration.pdf						Walking distance calculation for eligibility/assignment.
257	RFP-S3.13.b.xv	Must be able to locate the closest existing stops to a student's address. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Spatial Query Engine)						Nearest neighbor spatial search requirement.
258	RFP-S3.13.b.xvi	Must be able to automatically assign new students to the existing stops available for that OPT Code based on business rules that apply to the specific type of stop (i.e., STH, PSC, capping, etc.). (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Assignment Logic/Rules Engine)						Automated student-to-stop assignment based on rules.
259	RFP-S3.13.b.xvii	Must be able to flag stops for deactivation when it detects that the stop is not being used. The system must automatically remove all stops that do not have active riders or students assigned. The system must alert the transportation user, and the application must autogenerate the stop times automatically. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Analysis/Workflow/Alerting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf						Automated stop cleanup based on ridership. Auto stop time generation needs clarification.
260	RFP-S3.13.b.xviii	Must be able to flag stops when it detects that a stop is being used but does not have students assigned to it. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Analysis/Alerting); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf						Data inconsistency detection requirement.

### 3.13 Stops - Manual Capabilities

261	RFP-S3.13.c.i	All new stops proposed by the software must be approved by authorized DOE staff within 24hrs. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow/Approval UI)						Manual approval workflow for suggested stops.
262	RFP-S3.13.c.ii	Must allow authorized users to create and manually adjust stops. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional						Manual stop creation/adjustment capability.

				Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf				
<b>3.13 Stops - Stop-Level Information</b>								
263	RFP-S3.13.d.i	Must be able to store and display individual student's special transportation accommodations as identified in their IEP, as well as any special handling instructions that affect how they are routed. There are specific data fields/data sets that must be stored or displayed, along with the icons required for different codes. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/UI); Appendix S.1 - Data Governance and compliance controls.pdf				Storage/display of detailed student accommodation data (incl. icons).
264	RFP-S3.13.d.ii	Must have the ability to store and display other student data, such as the school they attend, grade level/date of birth, stop assignment(s), intersection/stop location, stop time, session time, sequence, and route assignment(s). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/UI)				Additional student data display requirement at stop/route level.
265	RFP-S3.13.d.iii	Must provide a means of capturing and displaying key data at the stop level, such as location, the total number of pupils assigned to the stop, route number, school(s) served, etc. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/UI/Aggregation)				Stop summary information display requirement.
<b>3.14 Session Times</b>								
<b>3.14 Session Times - General</b>								
266	RFP-S3.14.a.i	Must be able to capture session times for each day of week. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model)				Data model requirement for daily session times.
267	RFP-S3.14.a.ii	Must be able to view session times for schools on the map, edit session times for individual HS students / edit the entire school's session time. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI Features); Appendix M.1 - System Architecture.pdf (Admin UI); Appendix S.2 - GIS Integration.pdf				UI/Edit capability for session times (map view, individual override).
268	RFP-S3.14.a.iii	Must be capable of integrating session times from an existing Session Time Application as well as the session times of individual students based on their IEPs or on an exception basis. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf				Data integration requirement (legacy app & student exceptions).

269	RFP-S3.14.a.iv	Must have the ability to display a list of all schools that have requested a session time change. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (Workflow/Queue)					Workflow monitoring requirement for change requests.
270	RFP-S3.14.a.v	Must be able to display the school that has requested a session time change, any schools that are served by the same routes, and whether those schools have submitted session times for the upcoming school year yet. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (Data Query/Analysis)					Contextual display requirement for evaluating change requests.

### 3.14 Session Times - Optimization Capabilities

271	RFP-S3.14.b.i	The system must automatically adjust route start times and subsequent stop times based on the school session time range. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Logic)					Automated routing time adjustment based on session time.
272	RFP-S3.14.b.ii	Super users must have the ability to update student data, session time data, locations of stops, etc. If data is not appearing correctly. Data quality work around.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (User Mgmt/Permissions); Appendix P.1 - Security Strategy.pdf (RBAC)					Super user data correction capability.
273	RFP-S3.14.b.iii	Must be able to display nearby schools with compatible session times. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Planning Tool); Appendix M.1 - System Architecture.pdf (Spatial/Temporal Query); Appendix S.2 - GIS Integration.pdf					Route planning assistance feature.
274	RFP-S3.14.b.iv	The system shall implement a route evaluation solution that automatically assesses the impact of session time changes on existing routes and establishes end-to-end communication flow between the adaptive/dynamic system and driver applications.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Analysis/Workflow); Appendix X.2 - Communications and Status Reporting Strategy.pdf					Impact analysis and communication workflow for session time changes.
275	RFP-S3.14.b.v	Must be able to allow authorized users to experiment with alternate session times	<b>Yes</b>	Appendix M.2 - Solution Design Functional and					"What-if" scenario

		within planning mode. (Medium)	<b>Non Functional Requirements.pdf (Planning Mode); Appendix M.1 - System Architecture.pdf (Scenario Planning Feature)</b>				planning feature for session times.
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### 3.15 Routing Requirements

#### 3.15 Routing Requirements - General

276	RFP-S3.15.a.i	Must display the route as a line depicting the shortest path with distance in miles between stops through the streets- there should be turn by turn directions or the ability to switch to "crows flight". (High) • The foundation of STS busing includes stops, OPT codes, headcounts per stop, runs, and routes. • The foundation of CTS busing includes students, various student codes/data fields, OPT codes, vehicle capacity runs and routes. • The vehicle capacities depend upon the contractual items. STS and CTS have different contractual items. • Users must be able to update the start time/ end time, number of attendants, item, effective date, etc. When changing a route, adding a route, or deleting a route. Contract system Integration.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine/UI/Data Model/Integration); Appendix S.2 - GIS Integration.pdf				Route display, data foundations (STS/CTS), capacity rules, route editing, contract integration. Foundational routing requirements.
277	RFP-S3.15.a.ii	Must have the ability to display nearby schools and transportation sites on the map. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI); Appendix S.2 - GIS Integration.pdf				Map context requirement for routers.
278	RFP-S3.15.a.iii	Must display the entirety of the route from the first stop through the last school or transportation site served. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Mapping UI); Appendix M.1 - System Architecture.pdf				Route visualization requirement.
279	RFP-S3.15.a.iv	Must have the ability to route students attending after-school programs. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Logic)				Specific routing scenario requirement (After-school).
280	RFP-S3.15.a.v	Must include the sequence that the schools or transportation sites will be	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional				Route data requirement (multi-school sequence).

		served as part of the route itinerary. (High)		Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model/Routing Logic)			
281	RFP-S3.15.a.vi	Must have the ability to integrate one-way street information so that the AM/PM directions can be routed differently. (High)	Yes	Appendix S.2 - GIS Integration.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Logic)			Routing constraint based on time-dependent street data.
282	RFP-S3.15.a.vii	Must have the ability to save, print, and email planned and actual routes. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Output Features)			Basic output functionality for routes.
283	RFP-S3.15.a.viii	Must have the ability to save all planned routes for further evaluation. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Scenario Planning Feature)			Scenario planning support.
284	RFP-S3.15.a. ix	Must have the ability for authorized users to make comments on routes that the SBC could view. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Comments Feature); Appendix X.2 - Communications and Status Reporting Strategy.pdf			Route-level communication feature.
285	RFP-S3.15.a.x	Must have the ability to assign students to different AM and PM routes based on the day of the week. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Assignment Logic/Data Model)			Complex assignment logic (day-specific).
286	RFP-S3.15.a.xi	Must have the ability to indicate the direction of the route. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Model)			Route data attribute (directionality).
287	RFP-S3.15.a.xii	Must be capable of planning unlimited possible scenarios for the routes. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Scalability/Performance); Appendix M.1 - System			Scalability for planning mode.

			Architecture.pdf (Scenario Planning Feature)				
288	RFP-S3.15.a.xiii	Must allow shuttle routes that make multiple trips to the same stop and school. During the summer for example, we provide transportation from the home school to the summer school, and large groups of students are shuttled from one OPT code to another. During the fall a driver can provide service to the same intersection/stop multiple times due to high ridership, ultimately shuttling students to/from the school multiple times. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Logic/Data Model)			Specific route type requirement (shuttles).
289	RFP-S3.15.a.xiv	Must be able to provide a list of available vehicles with their route number association by "item" type. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Integration/UI); Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf			Resource availability view (vehicles).
290	RFP-S3.15.a.xv	Must have an ability to allow authorized users to "check in" and "check out" the routes they are working on so that they are locked from any other changes. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Concurrency Control); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR)			Concurrency control / Locking mechanism.
291	RFP-S3.15.a.xvi	Must support a workflow for supervisor approval of any new, deleted, or modified routes. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Workflow); Appendix X.1 - Team Structure and Processes.pdf			Route approval workflow requirement.
292	RFP-S3.15.a.xvii	Must detect when a routing change requires a contract modification and automatically push the changes to Contract Management Unit for action. (Medium)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Integration with contract management process.
293	RFP-S3.15.a.xviii	Must have the ability to restore a previous version of a route or use an archived version of a route in case of emergency. (Low)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Versioning/Backup); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.2 - Solution Design Functional and Non			Route version control / Rollback capability.

				Functional Requirements.pdf				
<b>3.15 Routing Requirements - Optimization Capabilities</b>								
294	RFP-S3.15.b.i	Must be able to auto-create/auto-optimize routes in the most efficient manner based on configurable parameters. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)				Core route optimization algorithm requirement.
295	RFP-S3.15.b.ii	Must be capable of identifying existing routes that could best serve stop(s) to be routed (i.e. feasible route search) based on configurable parameters. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)				Route suggestion feature for unrouted stops.
296	RFP-S3.15.b.iii	Must have the ability to suggest more optimal sequences for existing routes. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)				Route re-optimization feature.
297	RFP-S3.15.b.iv	Must have the ability to adjust route start time automatically based on changes to the route. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)				Automated time adjustment requirement.
298	RFP-S3.15.b.v	Must be able to create and display routing scenarios consisting of existing routes, new routes, and changes to existing routes along with key summary data on the map-based platform and in tabular format. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Scenario Planning); Appendix M.1 - System Architecture.pdf (UI/Data Query); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Scenario planning visualization requirement.
299	RFP-S3.15.b.vi	Must account for extra boarding time needed for certain medical conditions (such as use of wheelchair) and for stops that have a large number of students assigned to board at the same time. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Constraints/Data Model)				Routing constraint requirement (variable dwell times).
300	RFP-S3.15.b.vii	Must have an ability to calculate weighted ridership or available capacity based on extra space requirements for older students, students accompanied by paras, students requiring an extra seat for	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing				Complex capacity calculation requirement.

		medical equipment, and other reasons. (High)	<b>Engine Constraints/Capacity Logic)</b>				
301	RFP-S3.15.b.viii	Must have an ability to automatically assign route numbers to newly created routes based on OPT naming conventions (i.e. borough, AM vs. PM, etc.) and contract terms. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Automation/Naming Convention Logic)			Automated route numbering based on rules.
302	RFP-S3.15.b.ix	Must attempt to assign routes to a specific vehicle type based on available inventory. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine Assignment Logic)			Vehicle type assignment constraint/preference.

### 3.15 Routing Requirements - Manual Capabilities

303	RFP-S3.15.c.i	Must provide authorized users with the ability to make manual adjustments to stop arrival times, start times, end times, number of attendants, etc. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf			Manual override capability for route details.
304	RFP-S3.15.c.ii	Must allow the authorized users to evaluate and approve all new routes. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Workflow); Appendix M.1 - System Architecture.pdf (Admin UI/Workflow)			Manual approval step for new routes.
305	RFP-S3.15.c.iii	Must have the ability to adjust route start date for any new or changed routes. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (Data Model)			Effective dating for route changes.
306	RFP-S3.15.c.iv	Must have the ability to un-route one or more stops on the route with ease. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf			Manual route modification (stop removal).
307	RFP-S3.15.c.v	Must have the ability to easily swap one or more stops between routes. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf			Manual route modification (stop move).

308	RFP-S3.15.c.vi	Must support advanced and customizable searches/queries to select and display routes. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Search Engine); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Advanced search capability for routes.
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### 3.15 Routing Requirements - Route-Level Information

309	RFP-S3.15.d.i	Must be able to display key route details, such as the total number of pupils and others on the route (attendants, paras, nurses, etc.), start time, end time, number of stops, estimated arrival time to the stops, length of the route in miles and walking distance, distance between stops and overall distance in Miles, and overall travel time. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI Display); Appendix M.1 - System Architecture.pdf (Data Query/Aggregation); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Route summary information display requirement.
310	RFP-S3.15.d.ii	Must be able to display vehicle-related information such as vehicle type (item), seating capacity, contracted vendor name, ambulatory code breakdown N, L, W students assigned, total students assigned, paras assigned, OPT codes assigned, route number, etc . (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI Display); Appendix M.1 - System Architecture.pdf (Data Query/Integration); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Vehicle/Capacity information display linked to route.
311	RFP-S3.15.d.iii	Based on vehicle size and type, users must have the ability to display maximum loads for each route. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI Display); Appendix M.1 - System Architecture.pdf (Data Query/Logic)					Vehicle capacity display requirement.

### 3.16 Notifications and Alerts

#### 3.16 Notifications and Alerts - New or Updated Information

312	RFP-S3.16.a.i	Must have the ability to generate a notification for internal users if there is a change in student information that may affect routing (i.e. change in address, school, medical alert, ambulatory code, etc.). (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Change detection and notification requirement (student data).
313	RFP-S3.16.a.ii	Must have the ability to generate a notification for un-routed stops that need to be routed. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and					Workflow notification (un-routed stops).

				Non Functional Requirements.pdf				
314	RFP-S3.16.a.iii	Must have the ability to generate a notification of the students who are not yet assigned to stops. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Workflow notification (unassigned students).
315	RFP-S3.16.a.iv	Must have the ability to generate a notification of the students requesting alternative pick-up and/or drop-off locations. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Workflow notification (Alt PM requests).
316	RFP-S3.16.a.v	Must have the ability to generate a notification once a school submits a request for transportation for new and moving sites. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Workflow notification (New/moving site requests).
317	RFP-S3.16.a.vi	Must have the ability to generate a notification once school submits a request for a session time change. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Workflow); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Workflow notification (Session time change requests).

### 3.16 Notifications and Alerts - Potential Routing Conflicts

318	RFP-S3.16.b.i	Must have an ability to generate an alert for students routed on incorrect vehicle type based on medical needs. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Validation); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.1 - Data Governance and compliance controls.pdf				Conflict detection alert (student need vs. vehicle type).
319	RFP-S3.16.b.ii	Must have the ability to generate an alert for routes that are arriving to school late. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Performance Monitoring); Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Performance monitoring alert (lateness).
320	RFP-S3.16.b.iii	Must have the ability to generate an alert for the routes that exceed travel time guidelines. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Performance Monitoring); Appendix Q.2				Performance monitoring alert (travel time).

				- Observability and Monitoring Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				
321	RFP-S3.16.b.iv	Must have the ability to generate an alert for the routes that are overcrowded. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Capacity Monitoring); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Capacity violation alert.
322	RFP-S3.16.b.v	Must have the ability to generate an alert for the routes that are significantly underutilized. (Medium)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Efficiency Monitoring); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf				Efficiency monitoring alert (underutilization).
323	RFP-S3.16.b.vi	Must have the ability to generate an alert for the routes that exceed length (distance) guidelines. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Route Analysis); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Route characteristic violation alert (distance).
324	RFP-S3.16.b.vii	Must have the ability to generate an alert for out-of-item routes. (Medium)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Validation); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix S.1 - Data Governance and compliance controls.pdf				Contract compliance / Vehicle mismatch alert? Definition needed.
325	RFP-S3.16.b.viii	The system shall implement an integrated incident management solution that generates alerts for routing-related customer service tickets and maintains an incident history linked to specific routes, enabling end-to-end tracking and resolution management. (Medium)	Yes	Appendix M.1 - System Architecture.pdf (Integration/Alerting); Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Integration between ticketing and routing for alert/history linkage.
326	RFP-S3.16.b.ix	Must have the ability to generate an alert if ridership tracking indicates that no students are using a particular stop. (High)	Yes	Appendix M.1 - System Architecture.pdf (Alerting Service/Data Analysis); Appendix M.2 - Solution Design Functional and				Stop usage monitoring alert based on ridership.

				Non Functional Requirements.pdf; Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					
327	RFP-S3.16.b.x	Must have the ability to hide/ignore an alert if the router has evaluated and determined it is not an active issue. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System Architecture.pdf (Alerting UI/Workflow)					Alert management usability feature.

### 3.17 Reports and Dashboards

#### 3.17 Reports and Dashboards - General

328	RFP-S3.17.a.i	External applications must be allowed to consume snapshots of routing information from a given date. (High)	Yes	Appendix M.1 - System Architecture.pdf (API/Integration Strategy); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Data export/API requirement for external use.
329	RFP-S3.17.a.ii	Must allow the definition and business rules of front-end reports, KPI and BI measures for usage in DOE internal downstream applications (for example, ranking contracted vendors). (High)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.1 - System Architecture.pdf (Metadata Export/Config)					Configuration/Extensibility for reporting definitions.
330	RFP-S3.17.a.iii	Must allow for integration of BI measures developed outside of the routing system (for example, use symbology to highlight problematic routes) (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy - Inbound); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (UI)					Data import/integration for displaying external BI results.
331	RFP-S3.17.a.iv	Must feed a data warehouse with the routing information required by consumers of routing data. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy - Outbound); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Data export (ETL) to data warehouse requirement.
332	RFP-S3.17.a.v	In addition to having its own suite of reporting features, should be easy to integrate with third party analytical and reporting tools (High), such as but not limited to:	Yes	Appendix M.1 - System Architecture.pdf (Interoperability/API Strategy); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf					Interoperability requirement for reporting.

333	RFP-S3.17.a.vi	customized reports on a variety of route data to allow for year-to-year comparisons. (High)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific reporting requirement (historical comparison).
334	RFP-S3.17.a.vii	route statistics reports by router. (High)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific reporting requirement (by router).
335	RFP-S3.17.a.viii	report based on alert types (i.e. all routes that arrive to school late, out-of-item routes, etc.). (Medium)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf					Reporting requirement based on alert data.
336	RFP-S3.17.a.ix	reports filtered by district or borough. (Medium)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Filtering requirement for reports.
337	RFP-S3.17.a.x	reports by STS/CTS school that changed session time. (Low)	Yes	Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specific reporting requirement linking school type and session changes.
338	RFP-S3.17.a.xi	Should provide parents/caregivers informational view into routes by mobile access (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Parent Module); Appendix M.1 - System Architecture.pdf					Parent view requirement.
339	RFP-S3.17.a.xii	Must allow authorized users to override the suggested locations (within parameters). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Admin UI); Appendix M.1 - System					Manual override for suggested stop locations. Seems misplaced here.

				Architecture.pdf (Workflow)					
340	RFP-S3.17.a.xiii	Must have the ability to automatically assign eligible students to the closest existing stop for that specific OPT Code.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Assignment Logic)					Automated student assignment. Seems misplaced here.
341	RFP-S3.17.a.xiv	Must have the ability to flag students for schools where the closest stop is not within reasonable walking distance. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Alerting/Analysis Logic)					Exception flagging based on walking distance. Seems misplaced here.
342	RFP-S3.17.a.xv	Must be flexible enough to support routing from scratch or modification of existing routes. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine)					Routing system flexibility. Seems misplaced here.
343	RFP-S3.17.a.xvi	When routing from the ground up, routers must be able to utilize an auto-route function to create optimal routes based on configurable parameters as well as the ability to create and modify routes manually. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine/Admin UI)					Workflow combining auto-route and manual editing. Seems misplaced here.
344	RFP-S3.17.a.xvii	The router must also be able to modify existing routes by utilizing a feasible route search functionality that will provide optimal alternatives to the existing route. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Routing Engine/Admin UI)					Route modification workflow using feasible search. Seems misplaced here.

### 3.18 Hardware Requirements

345	RFP-S3.18.Intro	NYCPS OPT is required to meet future student transportation expectations of providing timely and predictable quality service to students using bus transportation. These expectations include one hundred percent working GPS on all buses transporting NYCPS Students. It is anticipated that the proposer will be able to comply with all Hardware Requirements specified in this RFP (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf					Introductory statement setting expectation for hardware reliability and compliance.
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### 3.19 Mobile Device (Tablets or Smart Phone) with GPS and Display

346	RFP-S3.19.1	Tethering a device on the bus similar to Geotab must include the SBC arrangement that the selected device will follow the same Standard Operating Procedures in place for Install and Maintenance of Geotab. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					Applies if a tethered solution is proposed. Requires SBC agreement on SOPs.
347	RFP-S3.19.2	Requires a rugged secure mobile device that remains operational on a School Bus in the seasonal weather of New York City (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR - Reliability); Appendix P.1 - Security Strategy.pdf					Hardware durability and security requirement.
348	RFP-S3.19.3	Mobile On-Bus is a GPS mobile (Tablet or Smart Phone) device that is fitted in a secure casing that has locking capability and remains locked with the intention of long-term use on the bus. The mounting must be secured in a way that cannot be removed without tools or lock. Mountings for Mobile On-Bus must allow for the Driver to view the device display screen and allow room for passengers to pass and activate their Identification credentials when boarding the bus. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specification for permanently mounted device option.
349	RFP-S3.19.3.a	On-Bus-Mobile devices (Tablet or Smart Phone) must be rugged and mountable for easy access for maintenance and a deterrent to theft. Mountable in accordance with NYDMV School Bus Safety Regulations Devices requiring	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix P.3 - Audit Framework.pdf					Detail for On-Bus mounting and compliance.
350	RFP-S3.19.3.b	On-Bus-Mobile device power must not deprecate the vehicles power source	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.1 - System Architecture.pdf					Power consumption constraint for hardwired devices.
351	RFP-S3.19.4	Mobile off -Bus is a GPS mobile (Tablet or Smart Phone) device that is portable and allows for the bus driver to transport the GPS device on and off the bus. These devices need to be easily but securely affixed to a GPS mobile mounting bracket. Mountings for Mobile Off-Bus must allow for the Driver to view the device display screen and allow room for passengers to scan the pass and activate their Identification credentials when boarding the bus. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Specification for portable device option (preferred per 3.2.1).
352	RFP-S3.19.4.a	Off-Bus Mobile device (Tablet or Smart Phone) must be rugged and mountable with ability to be mounted in	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf;					Detail for Off-Bus mounting and compliance.

		accordance with NYDMV School Bus Safety Regulations	<b>Yes</b>	Appendix P.3 - Audit Framework.pdf					
353	RFP-S3.19.5	Mobile Devices (Tablet or Smart Phone) to fit in a Tablet or Smart Phone Mounting system supplied by vendor or previously equipped mounting existing and established on the vehicle (applicable to Off Bus Solution only).	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf					Mounting compatibility requirement.
354	RFP-S3.19.6	Installation of GPS Equipment – Install GPS hardware, wiring and all associated parts for fully functional GPS On-Board or Off-Board unit installation within the guidelines of the vehicle manufacture, NYCPS specifications, and NYDMV Vehicle safety guidelines. Vendors provisioning Off-Board GPS solution will have the option of utilizing existing Mounting equipment currently resident and in place on the vehicle.	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf					Installation service requirement and guidelines.
355	RFP-S3.19.7	Maintenance of GPS Equipment – Repair of GPS hardware, wiring and all associated parts of a fully functional GPS On-Board or Off-Board GPS unit within the guidelines of the vehicle manufacture, DOE specifications, and NYDMV Vehicle safety guidelines.	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Support)					Maintenance service requirement and guidelines.
356	RFP-S3.19.8	After initial Install of GPS equipment On-Board it is optional that SBC's may assume responsibility for following Standard Operating Procedures in place for Install and Maintenance of other established On-Board Equipment.	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					Optional maintenance model for On-Bus solution involving SBCs.
357	RFP-S3.19.9	The device needs to be operational for all active buses (currently 10,350 buses). (High)	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf					Scale requirement for device deployment.
358	RFP-S3.19.10	Vendor must include a 5% buffer to address issues including but not limited to device malfunction or operator accident. (Total of 11,250 total devices) to be delivered to School Bus vendor (High)	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix Y.1 - Budget Management.pdf					Spare device (attic stock) quantity requirement.
359	RFP-S3.19.11	To ensure consistent device functioning, the vendor must commit to replacing up to 20% of the devices annually on an as-needed basis. (High)	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Contract/SLA)					Hardware refresh/replacement commitment.
360	RFP-S3.19.12	All devices must have protective cases and maximum data security features. (High)	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix P.1 - Security Strategy.pdf					Device durability (cases) and security requirement.

361	RFP-S3.19.13	The device needs to be operational based on an existing source of power, without the need for a charge during operating hours described in the Availability section of Non-functional Requirements. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Availability/Reliability)					Device battery life / Power management requirement.
362	RFP-S3.19.14	The device must have a touch screen (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf					Basic hardware interface requirement.
363	RFP-S3.19.15	If a device cannot transmit data - there must be a method by which the data can be downloaded (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Offline Capability); Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.1 - System Architecture.pdf					Offline data recovery requirement.
364	RFP-S3.19.16	The device must be able to store data in its internal storage for a minimum of 3 days if it cannot transmit its data. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Offline Capability); Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.1 - System Architecture.pdf					Offline data buffering requirement.
365	RFP-S3.19.17	The device's brightness needs to be adjusted to optimize the viewing experience under different conditions of natural light. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Usability)					Usability requirement (screen brightness).

### 3.20 Student ID Reader

366	RFP-S3.20.1	Scanning capability for reading student IDs based on various mechanisms, such as Barcode, QR code, RFID, etc. delivered to the School Bus contracted vendors. (High)	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Integration)					Hardware requirement for ID scanning, needs tech flexibility.
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## 3.21 Warranty

367	RFP-S3.21.1	The vendor shall maintain device operating systems no older than a version level that is one major release behind the current public release, ensuring both stability and security. This requirement applies to all devices, ancillary hardware, and equipment integral to the proposed solution. The vendor shall manage the OS version control process, including testing, validation, and deployment of approved updates.	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Maintainability/Security)					OS version management requirement (N-1).
368	RFP-S3.21.2	The vendor shall provide a comprehensive warranty program covering all hardware components, including devices and ancillary equipment. This warranty shall protect against manufacturing defects, hardware failures, and performance degradation outside of normal wear parameters. The warranty service shall include replacement or repair of defective components with minimal disruption to operations.	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Contract/Warranty Terms)					Comprehensive hardware warranty requirement.

## 3.22 Human Capital Requirements

### 3.22.1 Project Management and Implementation

369	RFP-S3.22.1.Intro	Full-time project management on site is required throughout the transition and implementation completion. The project manager will be accountable for all aspects of vendor and OPT test plans, product installations, processes, methods and procedures, communications and training, and OPT product acceptance.	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf					Requirement for on-site PM with broad accountability.
370	RFP-S3.22.1.1	Vendor must provide a full-time Business Analyst and Technical Lead who will be located on-site daily for transition, possible cloning of legacy system(s), and through completion of all aspects of implementation or remote technical support from other technology services including data, Product Development, System Architecture, Trainers, Testers. Call Center equipped to handle Tier 1,2,3. (High)	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Support)					Key personnel requirement (on-site BA/TL or remote support). Legacy cloning needs clarity.
371	RFP-S3.22.1.2	Vendor solution to include all policies, processes, and procedures for implementation enterprise-wide (drivers, attendants, dispatchers, routers, operations personnel, administrators, schools, and any other departments and units within the	<b>Yes</b>	Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix X.1 - Team Structure and Processes.pdf;					Requirement for vendor to provide comprehensive process documentation.

		scope of work). Policies, processes, and procedures must guide in using the solution, maintaining and creating reports. (High)	[Various specific strategy docs]				
372	RFP-S3.22.1.3	Vendors must provide an organizational chart of the overall company responding to this RFP showing the specific titles and, if available, employees who will be slated to work on this project, including trainers. (Medium)	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)		Proposal submission requirement (Org Chart). Not expected in strategy HTMLs.
373	RFP-S3.22.1.4	Vendors must submit resumes for key personnel of subcontractors who will be working on the program and, where required, appropriate licenses. (Medium)	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)		Proposal submission requirement (Sub resumes/licenses). Not expected in strategy HTMLs.
374	RFP-S3.22.1.5	The DOE anticipates that these services will be rolled out in phases and should be deployed via a small test group before launching system wide. The vendor's proposal must include a phased plan in their timeline and project plan. Each should outline a clear, detailed plan. (High)	Yes	Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix O.1.2 - 12-Month Timeline.pdf; Appendix R - Testing Strategy.pdf			Phased rollout and pilot requirement. Plan expected in proposal.

### 3.23 Training

375	RFP-S3.23.1	Products, processes, methods, and procedures are to be trained to a large population of approximately 11,000 drivers, 27,4009,000 attendants, 60 routers, 50 OPT staff members, 300 dispatchers, 3202 school administrators, 450,000 parents/ caregivers, 170,000 students. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix T.3 - User Adoption Strategy and Framework.pdf			Scope of training audience (large and diverse). Note: Attendant # seems like a typo in RFP (27,4009,000). Used 9,000 based on later ref.
376	RFP-S3.23.2	Vendor must provide all training should be done in such a way that there must be 99.99% participation rate and communications for device, device components, device software, routers, drivers, attendants, dispatchers, operations, administrators, School Bus administrators, school administrators, and any other departments and units within the Scope of Services section. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf			Training responsibility, scope, and extremely high participation target.
377	RFP-S3.23.3	Vendor must supply effective training and communications for parents, students, and administrators in the use of any system applications, hardware applications, or processes associated within the scope of work. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix T.3 - User Adoption Strategy and Framework.pdf; Appendix X.2 -			Specific focus on training/comms for parents, students, admins.

				Communications and Status Reporting Strategy.pdf					
378	RFP-S3.23.4	Vendor must include a clear and detailed training plan to deploy initial implementation, annual training, and train-the-trainer program. To meet the needs of the vast population to be trained (11,000 drivers, 9,000 attendants, 60 routers, 50 OPT staff members, 300 dispatchers, 3202 school administrators, 450,000 parents/caregivers, 170,000 students) OPT envisions the most efficient and effective training mechanism available, including by not limited to, electronic virtual or in-person training session. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf					Training plan requirements (structure, delivery methods). Plan expected in proposal. Audience numbers reiterated.
379	RFP-S3.23.5	Vendor must create a complete comprehensive training program that details processes, workflow diagrams, methods and procedures, and an electronic copy of all training material, videos, and communications required, delivered to the OPT Training Director prior to start of implementation. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf (Deliverables)					Training material deliverable requirements.

### 3.24 Incident Management (Customer Service/Complaints)

380	RFP-S3.24.1	All support tiers to be managed by vendor	Yes	Appendix U.1 - Vendor and Third Party Management.pdf (Support Model); Appendix X.1 - Team Structure and Processes.pdf					Vendor responsibility for tiered support.
381	RFP-S3.24.2	Vendor to schedule repairs and organize quick replacements for SBC vendors	Yes	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix U.1 - Vendor and Third Party Management.pdf					Vendor responsibility for repair/replacement logistics.
382	RFP-S3.24.3	A detailed Service Level Agreement and Standard Operating Procedures must be submitted as part of this proposal	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)				Proposal deliverable requirement (SLA/SOPs for Incident Mgmt). Links to 3.26.1.

### 3.25 Non-functional Requirements (NFRs)

383	RFP-S3.25.Intro	The proposer must comply with all information technology policies stipulated by OTI, NYC3 (including the Software Security Assurance Program or equivalent), DIIT's 3rd party	Yes	Appendix P.3 - Audit Framework.pdf; Appendix P.1 - Security Strategy.pdf; Appendix S.1 - Data Governance and compliance controls.pdf					Overarching compliance requirement for IT policies.
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		solution, infrastructure, data center etc review and approval and other related agencies, within the prescribed timeline. Any exception to these rules, along with mitigation, must be submitted by the Proposer along with the Proposal and must be approved by authorized DOE technical staff.					
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### 3.25.1 Accessibility

384	RFP-S3.25.1.a	This solution must be compliant with Web Content Accessibility Guidelines (WCAG 2.0 AA). This needs to be certified by an accredited third-party vendor selected by NYCPS. Every release of the software needs to go through this accreditation before deployment so that the solution stays compliant with WCAG 2.0 AA. The solution must have responsive design features that allow it to automatically scale to display screens of various sizes (desktops, tablets, mobile devices, etc.) (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix P.3 - Audit Framework.pdf; Appendix R - Testing Strategy.pdf; Appendix N.3 - Engineering Approach.pdf				WCAG 2.0 AA compliance, 3rd party cert, responsive design.
385	RFP-S3.25.1.b	Public-facing content must be available in the nine (9) official languages recognized by NYCPS including Arabic, Bengali, Chinese (Traditional and Simplified), French, Haitian Creole, Korean, Russian, Spanish, Urdu, and English while maintaining consistent functionality across including but not limited to Chrome, Safari, and Edge web browsers. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (i18n); Appendix R - Testing Strategy.pdf (Browser Testing)				Multi-language and browser compatibility NFR.

### 3.25.2 Adaptability

386	RFP-S3.25.2.a	The solution must be able to adapt, and handle system changes due to update in government regulations, policies, procedures and due to version upgrade due to features and or security guidelines. NYCPS' technical team should be trained to perform enhancement, customization and configuration activities with no support or minimum support from the proposer. (High)	Yes	Appendix M.1 - System Architecture.pdf (Extensibility); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix T.1 - User Onboarding and Training Strategy.pdf (KT)				System flexibility and NYCPS self-sufficiency requirement.
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### 3.25.3 Audit Trail

387	RFP-S3.25.3.a	The proposer must implement the appropriate measures to track the usage of the system and the events happening within it. This information will be critical for both diagnosis purposes and operation support activities. Auditing design should ensure that all the authorized users and system actions are thoroughly recorded and stored properly so that it is easy to trace and identify the exact sequence of events in the system. The solution should also store the data change (old data vs. new data) along with the timestamp and details of the authorized users who induced the change (High).	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Auditing Service); Appendix P.1 - Security Strategy.pdf; Appendix S.1 - Data Governance and compliance controls.pdf				Comprehensive audit logging requirement.
388	RFP-S3.25.3.b	All mobile devices with NYCPs student data must be inventoried, and both current possession and history recorded and tracked. This step is important to wipe off student data from the mobile device if it is lost or stolen. Tracking the devices are necessary to achieve the goal (High).	<b>Yes</b>	Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf; Appendix P.1 - Security Strategy.pdf (MDM); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Mobile Device Management (MDM) requirement.

### 3.25.4 Architecture

389	RFP-S3.25.4.a	The solution must be built on industry standard, robust architecture that is reliable and scalable in the following areas: b. hardware infrastructure including production and disaster recovery; c. operating system; d. network topology; e. application software; f. database; g. security; h. systems deployment and management; i. data loss protection processes including backup and restore operations; j. any other external security, firewalls, virus protection, etc. in accordance with Information technology policies stipulated by OTI, DIIT and other related agencies. It is also the responsibility of the proposer to keep the solution in compliance with any future updates to the policies within the prescribed timelines. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix P.1 - Security Strategy.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Terraform_Infra_Setup_Guide.html; Appendix N.2.1 - DevOps Strategic Framework.pdf				Overall architectural quality and compliance NFR. Covers many domains.
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### 3.25.5 Authentication

390	RFP-S3.25.5.a	The solution must use an authentication mechanism approved by NYCPS as per NYCPS information security requirements for vendors Version 1.5. Please note the NYCPS and related city agencies update their information security requirements regularly. The solution will need to comply with all updated information security requirements from OTI, NYC3, DIIT and other related city agencies within prescribed timelines. Any exception to this rule needs to be reviewed and agreed upon by authorized NYCPS personnel. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix P.3 - Audit Framework.pdf				Compliance with NYCPS approved AuthN mechanism.
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### 3.25.6 Authorization

391	RFP-S3.25.6.b	The solution must use authorization mechanism approved by NYCPS as per NYCPS information security requirements for vendors Version 1.5. Please note the NYCPS and related city agencies update their information security requirements regularly. The solution will need to comply with all updated information security requirements from OTI, NYC3, NYCPS and other related city agencies within prescribed timelines. Any exception to this rule needs to be reviewed and agreed upon by authorized NYCPS personnel. (High)	Yes	Appendix P.1 - Security Strategy.pdf (RBAC); Appendix M.1 - System Architecture.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix P.3 - Audit Framework.pdf				Compliance with NYCPS approved AuthZ mechanism (likely RBAC).
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### 3.25.7 Availability

392	RFP-S3.25.7.1.a	Must be available at least 99.99% of the time (Peak Business Season: ~100 days between middle of June to middle of September, 24x7). (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (HA Design); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf				High availability SLA (Peak Season).
393	RFP-S3.25.7.2.a	The solution must be available at least 99.9 % of the time during NYCPS business days only (120 days - 16 hours x 5 days a week), (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (HA Design); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf				High availability SLA (Normal Business Days).
394	RFP-S3.25.7.3.a	The solution must be available at least 99 % of the time all year	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 -				Availability SLA (Other Days).

		long (145 days - 7 hours x 5 days a week) (Medium)		System Architecture.pdf (HA Design); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf			
395	RFP-S3.25.7.4	The solution must not have any single point of failure components within its operating environment. Any exception should be clearly documented along the risk mitigation plan. Both exception and risk mitigation plans need to be approved by authorized NYCPS Personnel. (High)	Yes	Appendix M.1 - System Architecture.pdf (HA/Redundancy Design); Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf			No SPOF requirement.
396	RFP-S3.25.7.5	All data originating from this Solution is property of NYCPS. NYCPS should have ability to extract and store all business data along with metadata on demand through APIs or equivalent industry standard technologies. (High)	Yes	Appendix S.1 - Data Governance and compliance controls.pdf; Appendix M.1 - System Architecture.pdf (API Strategy/Data Export); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Data ownership and export requirement.
397	RFP-S3.25.7.6	99% of data stream from data ingestion end points must reach solution hosting environment within 30 seconds of the operation. Remaining 1% of the Data stream must reach hosting environment within 3 minutes. Any exception should be clearly documented along the risk mitigation plan. Both exception and risk mitigation plans must be approved by authorized NYCPS DIIT Personnel. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix M.1 - System Architecture.pdf (Data Ingestion); Appendix Q.2 - Observability and Monitoring Strategy.pdf			Data ingestion latency SLA.
398	RFP-S3.25.7.7	All data collected by a vehicle must be readily available for active use (searching, display, reporting) for at least 12 months in a production system environment. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Data Retention); Appendix M.1 - System Architecture.pdf (Data Lifecycle); Appendix S.1 - Data Governance and compliance controls.pdf			Active data retention requirement (12 months).

### 3.25.8 Business Continuity

399	RFP-S3.25.8.1.a	Recovery Point Objective (RPO): No loss of data will be tolerated for near real-time GPS Tracking data (High)	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (DR/Backup Strategy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			RPO=0 for GPS data.
400	RFP-S3.25.8.1.b	Recovery Point Objective (RPO): Up to one hour of loss is acceptable for Route Planning data (High)	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf			RPO<=1hr for Routing data.

			(DR/Backup Strategy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			
401	RFP-S3.25.8.1.c	Recovery Point Objective (RPO): Up to 1 hour of data loss acceptable for Notification related data sets (High)	Yes Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (DR/Backup Strategy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			RPO<=1hr for Notification data.
402	RFP-S3.25.8.2.a	Recovery Time Objective (RTO): 0 minutes in recovery of GPS Route actuals component (High)	Yes Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (HA/Failover Design); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			RTO=0 (Instant Failover) for GPS actuals processing.
403	RFP-S3.25.8.2.b	Recovery Time Objective (RTO): Up to 15 minutes in recovery of Route planning component (High)	Yes Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (DR Strategy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			RTO<=15min for Routing system.
404	RFP-S3.25.8.2.c	Recovery Time Objective (RTO): Up to 15 minutes in recovery of Notification component (High)	Yes Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (DR Strategy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			RTO<=15min for Notification system.

### 3.25.9 Collaboration Messaging Platform

405	RFP-S3.25.9.1	Solution must be able to interoperate with messaging collaboration platform currently used by NYC agencies for all notifications/messages for targeted audience. The solution should use an industrial standard interface like Rest API or equivalent technology for information exchange between these systems. The Proposal shall discuss the interface strategy and include a typical Interface Plan that shall describe the methodology and implementation approach with collaboration messaging platform.	Yes Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix X.2 - Communications and Status Reporting Strategy.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Integration with existing NYC messaging platform. Plan expected in proposal.
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### 3.25.10 Data Integration

406	RFP-S3.25.10.1	This solution must integrate with all necessary data originating from NYCPS enterprise system through an industry standard mechanism like Rest APIs, SQL Server Integration Services, Enterprise Service Bus or equivalent technology. All data originating from this solution is property of NYCPS. NYCPS should have ability to extract and store all business data along with metadata on demand through APIs or equivalent technology. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration Strategy/API Strategy); Appendix S.1 - Data Governance and compliance controls.pdf				General inbound integration + data ownership/export requirement.
407	RFP-S3.25.11.1	Solution must be able to interoperate with existing applications currently used by NYCPS and OPT. The Proposal shall discuss the interface strategy and include a typical Interface Plan that shall describe the methodology and phased implementation approach to providing required interfaces with systems outside of the solution. Specific interface specifications will be determined during the analysis and design process after the choice of a solution. The solution should use an industrial standard interface like Rest API for reading/writing the data from different in-house systems. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				General interoperability requirement with existing apps via standard APIs. Plan expected in proposal.

### 3.25.12 Data Integrity

408	RFP-S3.25.12.Intro	The solution must adhere and comply with all local, state and federal laws including but not limited to FERPA, COPA, HIPAA and CIPA rules and regulations. The solution will need to comply with all updated information technology policies from OTI, NYC3, DIIT, OPT and other related city agencies. (High)	<b>Yes</b>	Appendix P.3 - Audit Framework.pdf; Appendix S.1 - Data Governance and compliance controls.pdf; Appendix P.1 - Security Strategy.pdf				Overall legal and policy compliance NFR for data.
409	RFP-S3.25.12.1	The solution must adhere to the New York City Department of Education's data classification policy within NYCPS information security requirements for vendors Version 1.5. Highly restricted or confidential data may not be stored and/or transmitted across any communication mechanism unless it is protected using approved data encryption	<b>Yes</b>	Appendix S.1 - Data Governance and compliance controls.pdf; Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf				Data classification and encryption requirement based on policy.

		technology prescribed in the above policy. (High)	<b>Yes</b>				
410	RFP-S3.25.12.2	Cryptographic algorithms and supporting processes as defined in the Citywide Encryption Standard must be used to protect business critical information and ensure interoperability with New York City Department of Education and other city agencies (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf; Appendix P.3 - Audit Framework.pdf			Compliance with specific Citywide Encryption Standard.
411	RFP-S3.25.12.3	The solution's input data must be validated to ensure it is correct and appropriate. Validity and parameter checks must be performed on both the client-side and server-side to ensure data integrity. Data that have been entered correctly can be corrupted by processing errors or through deliberate acts. Validation checks must be incorporated into the solution to detect this type of activity and protect critical business data. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Validation Logic); Appendix N.3 - Engineering Approach.pdf (Coding Standards)			Input validation (client & server side) requirement.
412	RFP-S3.25.12.4	Passwords, tokens or similar technologies must be treated as confidential information and must not be disclosed. Transmission of such authentication information must use secure mechanisms. (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf			Secure handling and transmission of credentials.
413	RFP-S3.25.12.5	The system must include a mechanism for locking master data entities (schools, routes, etc.) while they are being worked on/updated so transactional data integrity is maintained within the solution. (High)	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Concurrency Control); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf			Record locking for data integrity.

### 3.25.13 Dependability

414	RFP-S3.25.13.1	The solution must allow authorized users to view maps and navigation offline. This feature is extremely important to help drivers operate buses efficiently even in the area where GPS signals are not available or low. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Offline Mode); Appendix M.1 - System Architecture.pdf (Driver Module Caching)				Offline capability requirement for Driver Module.
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### 3.25.14 Documentation

415	RFP-S3.25.14.1	Should include complete technical documentation of the solution including, but not limited to, the following: ER model, data	<b>Yes</b>	Appendix O.1.1 - Project Execution Roadmap.pdf (Deliverables); [Multiple specific strategy docs imply content]				Comprehensive technical documentation requirement.
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		dictionary, data life cycle policy (including disposal of PII data after business need is accomplished), data flow diagrams, technical API documentation, component architecture and component design diagrams, standard operating procedures for operating and supporting the solution. (High)				
416	RFP-S3.25.14.2	Provide security information (for vendor-hosted applications): (High) a. Security architecture, Placement of data, servers, and firewalls other network security devices (IPS, monitoring, logging) Host site security Personnel with access to servers Other applications/sites co-hosted on servers Data security Encryption methodology of sensitive data at rest, in process, and in transit Backup media handling (including 3rd party backup solution). If there is any data breach, vendor should report details to OPT Platform security b. List of operating system(s), database(s), web server(s), etc., including current version numbers and patch levels c. List any known incompatibility or exclusions required with endpoint security software such as Symantec Endpoint Protection and CrowdStrike d. Patch management process and frequency. In addition, specify how new, major, or emergency patches for the platform and application will be subjected to testing and verification prior to installation on production	Yes	Appendix P.1 - Security Strategy.pdf; Appendix M.1 - System Architecture.pdf; Appendix P.3 - Audit Framework.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix N.2.2 - DevOps Technical Implementation.pdf		Detailed security posture documentation requirement (if vendor-hosted).

### 3.25.15 Efficiency

417	RFP-S3.25.15.1	The software components should be designed and optimized to efficiently use scarce computational resources such as CPU memory, disk space, buffers and communication channels (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf			Resource efficiency NFR.
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### 3.25.16 Extensibility

418	RFP-S3.25.16.1	Consistent with NYCPS's focus on interoperability, the proposer must use modern frameworks	Yes	Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf;			Future-proofing / Adaptability requirement using modern tech.
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		and software development methodologies which will ensure their solution will be adaptable to evolving business requirements. Proposer's solution design should consider the fast pace of technological change and therefore adopt forward-thinking strategies in order to accommodate future growth. (Medium)		Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Adaptability)				
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### 3.25.17 Interoperability

419	RFP-S3.25.17.1	The proposer must design the solution to be Interoperable with existing and future NYC systems. To that end, the proposer must use modern front-end and back-end frameworks to ensure that solution is scalable and able to seamlessly interface with other systems such as NYCPs internal NYCSA, Student Profile, School Finder, applications, ESRI ArcGIS software, etc. This is for UX design and all aspects of coding. (High)	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy/API Strategy); Appendix N.3 - Engineering Approach.pdf; Appendix S.2 - GIS Integration.pdf				Broad interoperability NFR with named systems and modern tech stack.
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### 3.25.18 Information Security

420	RFP-S3.25.18.1	Solutions must comply and adhere to NYCPs Information Security Requirements for Vendors Version 1.5. The solution will need to comply with all updated information security requirements from OTI, NYC3, DIIT and other related city agencies within prescribed timelines. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix P.3 - Audit Framework.pdf				Overall security policy compliance requirement.
421	RFP-S3.25.18.2	Solution must comply and adhere to NYCPs Secure Coding Standards for Vendors Version 1.5. The solution will need to comply with all updated information security requirements from OTI, NYC3, DIIT and other related city agencies within prescribed timelines. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix N.1.2 - SDLC Technical Specifications.pdf				Secure coding standards compliance requirement.
422	RFP-S3.25.18.3	Proposer must complete and submit NYCPs Quick Risk Evaluation Rubric Version 1.5 as part of the proposal. This rubric will enable NYCPs to assess the risk profile of the solution and prepare security testing plan requirements/approach. (High)	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)			Proposal submission requirement (Risk Rubric).

423	RFP-S3.25.18.4	Proposer needs to provide complete details on student information that will be stored on mobile device. The proposer must also provide full data management life cycle for data temporarily stored in the mobile device to demonstrate that data is removed completely from mobile device after synchronization with hosting environment. (High)	Yes	Appendix P.1 - Security Strategy.pdf; Appendix S.1 - Data Governance and compliance controls.pdf; Appendix M.1 - System Architecture.pdf				Mobile data security and lifecycle requirement.
424	RFP-S3.25.18.5	The proposer must provide a system capability to wipe out all data from mobile devices as soon as it is discovered that device is missing or lost or retired from service. (High)	Yes	Appendix P.1 - Security Strategy.pdf (MDM); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf				Remote wipe capability requirement.
425	RFP-S3.25.18.6	The proposer must provide a system capability to wipe out all data from mobile devices as soon as it is discovered that incorrect authorized username and/or password are used to access the solution for 10 times consecutively. (High)	Yes	Appendix P.1 - Security Strategy.pdf (MDM/Policy); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Automated wipe on failed logins requirement.

### 3.25.19 Maintainability

426	RFP-S3.25.19.1.a	The solution must have a documented, prescribed maintenance schedule, which shall not fall within the regular operating hours of OPT. All unplanned maintenance activities shall be performed only after communication with and approval of authorized NYCPs personnel. The solution must have a clear definition of various alert notification schedule prior to maintenance window. a. This standard will apply for all updates mandated by OTI, NYC3, DIIT, and other related city agencies (High)	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix N.2.1 - DevOps Strategic Framework.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf				Maintenance window policy and communication NFR.
427	RFP-S3.25.19.1.b	Requirements for the 'Maintenance page' during solution downtime must be defined. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf				Downtime maintenance page requirement.
428	RFP-S3.25.19.1.c.i	Factors to consider: Appropriate message on the page.	Yes	Appendix X.2 - Communications and Status Reporting Strategy.pdf				Detail for maintenance page message.
429	RFP-S3.25.19.1.c.ii	Factors to consider: The message can be generic or configurable custom message.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Configurability);				Flexibility for maintenance page message.

				Appendix M.1 - System Architecture.pdf				
430	RFP-S3.25.19.2	The proposer needs to plan, provide knowledge transfer and documentation to the NYCPS Infrastructure support and application support teams to be able to support, configure and customize the solution independently with minimum or no support from the proposer's technical team. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf (KT); Appendix O.1.1 - Project Execution Roadmap.pdf (Transition); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Adaptability)				Knowledge transfer for NYCPS self-sufficiency.
431	RFP-S3.25.19.3	The proposer must provide clear and complete documentation of various technical components used in the solution along with the relationship between components. The components should be clearly marked on whether they are open-source components, third party components etc. Complete technology stack for each component should be clearly documented. (High)	Yes	Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Documentation)				Detailed technical component documentation requirement.
432	RFP-S3.25.19.4	The system must make use of industry standard technology and skillsets as much as possible. (High)	Yes	Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf				Use of standard technology for maintainability.
433	RFP-S3.25.19.5	The proposer must provide a complete and detailed disengagement plan to reduce the reliance on the proposer. The proposer needs to provide complete documentation necessary to support and enhance various technical components used in the solution along with relationship between components. NYCPS's technical team should be trained to perform enhancement, customization and configuration activities with no support or minimum support from the proposer. (High)	Yes	Appendix O.1.1 - Project Execution Roadmap.pdf (Transition/Exit); Appendix T.1 - User Onboarding and Training Strategy.pdf (KT); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Adaptability)				Disengagement plan and knowledge transfer for long-term NYCPS independence.

### 3.25.20 Performance

434	RFP-S3.25.20.1	Maximum load/transaction time for a page should be a maximum of 3 seconds for parents and a maximum of 5 seconds for NYCPS staff and Vendor staff (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix R - Testing Strategy.pdf				Response time SLA under load.
435	RFP-S3.25.20.2	The solution must have burst capability to meet peak operation	Yes	Appendix M.1 - System Architecture.pdf (Scalability);				Burst scalability requirement.

		load if it goes beyond the concurrency requirements established at this time. (High)		Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Scalability/Performance); Appendix Y.2 - FinOps Strategy.pdf (Elasticity)			
436	RFP-S3.25.20.3	All on-demand reports should complete their execution in less than 10 seconds (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf; Appendix R - Testing Strategy.pdf			Reporting performance SLA.
437	RFP-S3.25.20.4	Any report whose execution time is greater than or equal to 10 seconds should be delivered as a scheduled report (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix M.1 - System Architecture.pdf (Reporting/Scheduler); Appendix S.3 - Data Engineering and Analytics Capabilities.pdf			Handling long-running reports asynchronously.
438	RFP-S3.25.20.5	The proposer should perform end-to-end benchmarking of their solution to demonstrate that the solution meets all required performance standards under peak load conditions. Every Major release of the software needs go through bench marking assessment at least once a year. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf			Performance testing and benchmarking requirement.
439	RFP-S3.25.20.6	The Proposer needs to make sure that the solution complies with Citywide Policy for Performance Testing of Public-Facing Applications (Appendix K). (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix P.3 - Audit Framework.pdf			Compliance with specific performance testing policy (Appendix K).

### 3.25.21 Reliability

440	RFP-S3.25.21.1	The solution must be extremely reliable during peak usage time. Reliability is a measure of probability that an item will perform its intended function for a specified interval under stated conditions. The solution, including interface components, should perform at peak efficiency during Peak Business Season & Business Day requirements as defined in the Availability subsection of the Non-functional Requirements. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability/Availability); Appendix M.1 - System Architecture.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf			Overall reliability requirement linked to availability SLAs.
441	RFP-S3.25.21.a	During Peak Business Season, the solution must perform all intended functions at peak efficiency all the time with the allowed exception of maximum	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix R - Testing Strategy.pdf; Appendix Q.1 - Business Continuity			Strict reliability target (functional failure time) during Peak Season.

		15 minutes in a calendar year. (High)	Plan And Operational Excellence.pdf				
442	RFP-S3.25.21.b	During the Normal Business Day period, the solution must perform all intended functions at peak efficiency all the time with the allowed exception of maximum 216 minutes in a calendar year. (High)	Yes Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix R - Testing Strategy.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf				Reliability target during Normal Business Days.
443	RFP-S3.25.21.c	During other periods, the solution must perform all intended functions at peak efficiency all the time with allowed exception of maximum 1656 minutes in a calendar year (Medium)	Yes Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix R - Testing Strategy.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf				Reliability target during Off-Peak times.
444	RFP-S3.25.21.d	The solution must have failure rates less than 10 failures per calendar year. The time between two failures cannot be less than one week. Any exception to this rule needs to be reviewed and agreed upon by authorized NYCPs personnel. (Medium)	Yes Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix R - Testing Strategy.pdf; Appendix Q.2 - Observability and Monitoring Strategy.pdf				Failure rate / MTBF target.

### 3.25.22 Reusability

445	RFP-S3.25.22.1	The solution will be designed to have reusable components that can be replicated to enhance existing or future systems. The code repository will be annotated, archived, and documented so that it can be easily referenced in future projects involving GPS data, bus routes, and other transportation considerations. We will also evaluate the architecture and interoperability of existing systems to determine if they may be used in some capacity as part of our solution. (Medium)	Yes Appendix M.1 - System Architecture.pdf (Modularity); Appendix N.3 - Engineering Approach.pdf; Appendix N.2.2 - DevOps Technical Implementation.pdf (Code Repo)				Design for reusability requirement.
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### 3.25.23 Scalability

446	RFP-S3.25.23.1	The solution must be designed to dynamically scale up and scale down based on the near real-time load on the environment. The solution must be capable of horizontal and vertical scaling to accommodate load. All design decisions need to be submitted and approved by the authorized NYCPs technical team. (High)	Yes Appendix M.1 - System Architecture.pdf (Scalability/Elasticity); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Scalability); Appendix Y.2 - FinOps Strategy.pdf				Elastic scalability requirement (horizontal/vertical).
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### 3.25.24 Security

447	RFP-S3.25.24.1	All unplanned security updates shall be performed only in the production environment, after communication with and approval by authorized NYCPs personnel. The update needs to be tested and validated in a non-production environment so that updates do not cause operational down time. The proposer is responsible for maintaining security of NYCPs student information by notification and performance of all necessary Software/Framework assessments & updates as soon as it is necessary and at least once every six months. (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix N.2.1 - DevOps Strategic Framework.pdf (Patching Process); Appendix P.3 - Audit Framework.pdf				Security patching process and responsibility NFR.
448	RFP-S3.25.24.2	The proposer needs to submit detailed security testing procedures (Penetration, SAST, DAST, IAST, etc.) to be followed by them as part of the proposal. The proposer should allow OTI, NYC3, DIIT and other related city agencies or an approved external vendor to perform security testing of the solution with advance notice less or equal than 15 days. Every release of the software needs to go through security testing before deployment so that solution stays secured to protect Personally Identifiable Information managed by NYCPs. (High)	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix R - Testing Strategy.pdf; Appendix P.3 - Audit Framework.pdf				Security testing requirements (internal & external). Procedures expected in proposal.

### 3.25.25 Server/Storage

449	RFP-S3.25.25.1	All solution designs must document the answers to the following questions if the solution will be hybrid or on-premises. (High) a. What is the estimated storage? b. What is the storage growth over two years? c. What are the specifications for the server? d. What are the network/bandwidth requirements? e. What archival requirements are there, if any?	<b>Yes</b>	Appendix M.1 - System Architecture.pdf; Terraform_Infra_Setup_Guide.html; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf				Infrastructure estimation requirement (if hybrid/on-prem).
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### 3.25.26 Service Level Agreement (General NFRs)

450	RFP-S3.25.26.1	As part of this proposal, the vendor is requested to submit a comprehensive Service Level Agreement (SLA) and Standard Operating Procedures (SOP) specifically addressing incident	<b>No</b>	N/A (Proposal deliverable)	<b>Identified Gap (Proposal Content)</b>			Proposal deliverable requirement (SLA/SOP for Incident Mgmt/Support). Defines Tier structure. Links to 3.24.3.
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		management for customer service and engagement. The SLA shall define key performance metrics, including but not limited to response times, resolution times, and escalation procedures for various types of incidents. The SOP shall include comprehensive workflows, roles and responsibilities, and communication procedures to ensure efficient and effective management of customer service incidents and technical support. These documents must ensure alignment with NYCPs' operational standards, meet the industry's best practices, and support the timely resolution of customer issues while maintaining high service quality. The proposer must provide clear documentation of various levels of technological assistance required to support the solution. For example: Tier 1 support will be handled by the Proposer help desk. Tier 2 support will be provided by the Proposer technical team. Tier 3 support will be provided by the Proposer. (High)	Yes				
451	RFP-S3.25.26.2	The data consumed and generated by the Vendor shall be available for NYCPs operations daily without any lag and in NYCPs Administrative Systems.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Availability/Performance); Appendix M.1 - System Architecture.pdf (Integration)			Data availability/timeliness requirement.
452	RFP-S3.25.26.3	The proposer must ensure that all data transmitted to NYCPs is delivered without any lag or disruption. Data should flow in real-time or near-real-time (within 10 seconds of generation or update) in accordance with the operational requirements of NYCPs data integration.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix M.1 - System Architecture.pdf (Integration/API Strategy)			Data transmission latency SLA (< 10 sec).
453	RFP-S3.25.26.4	The proposer must implement and maintain a robust data transmission protocol with automated monitoring to guarantee data integrity and availability and provide immediate notification to the consumer party in the event of any disruption or delay.	Yes	Appendix M.1 - System Architecture.pdf (Integration Strategy); Appendix Q.2 - Observability and Monitoring Strategy.pdf			Data transmission reliability/monitoring requirement.
454	RFP-S3.25.26.5	All time stamps or time-sensitive data provided to the consumer	Yes	Appendix M.2 - Solution Design Functional and Non Functional			Time zone handling requirement.

		party must be converted and displayed in the local time zone of NYCPS, ensuring accuracy. The proposer is required to use a reliable and standardized method for time zone conversion and must validate the correctness of this conversion periodically.		Requirements.pdf; Appendix M.1 - System Architecture.pdf (Data Handling); Appendix N.3 - Engineering Approach.pdf				
455	RFP-S3.25.26.6	The proposer should have a backup mechanism in place to ensure data continuity in case of system failure and must provide regular testing and reporting to NYCPS on the reliability of data transmission systems.	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (Integration/HA); Appendix R - Testing Strategy.pdf				Data transmission resilience/testing requirement.

### 3.25.27 Serviceability

456	RFP-S3.25.27.1	Vendor software should have a maintenance contract to ensure technical support personnel are available to monitor and manage the solution operation according to that contract. A vendor should provide annual resource needs for support for 7 years after which the solution will be considered to have reached the end of its life. (High)	Yes	Appendix U.1 - Vendor and Third Party Management.pdf (Support Contract); Appendix O.1.1 - Project Execution Roadmap.pdf (Lifecycle)				Long-term support contract and resource planning requirement.
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### 3.25.28 Solution Lifecycle Management

457	RFP-S3.25.28.1	The proposer must have Standard Operating Procedures agreed with the NYCPS in place for the implementation of upgrades to equipment and software. (High)	Yes	Appendix N.2.1 - DevOps Strategic Framework.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix U.2 - Hardware Lifecycle and Logistics Management.pdf				SOP requirement for upgrades.
458	RFP-S3.25.28.2	The implementation of all upgrades must be carefully planned and scheduled, with notice sent to all relevant parties well in advance. (High)	Yes	Appendix N.2.1 - DevOps Strategic Framework.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf				Planning and communication requirement for upgrades.
459	RFP-S3.25.28.3	The implementation of all upgrades must be tested in a vendor managed non-production environment (replica of the production environment) and implemented efficiently at times that cause as little disruption as possible to authorized users of the solution. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix N.2.2 - DevOps Technical Implementation.pdf; Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf				Testing and deployment requirement for upgrades (min disruption).
460	RFP-S3.25.28.4	The timetable for the implementation of all upgrades must be approved in writing by the NYCPS. (Medium)	Yes	Appendix O.1.1 - Project Execution Roadmap.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf				Approval requirement for upgrade schedule.

461	RFP-S3.25.28.5	The proposer must implement in a timely manner all available, proven operating system, database and system software upgrades. If the Proposer does not consider it appropriate to implement a new release within the agreed upon period, the proposer must promptly notify the NYCPS in writing that they are delaying implementation and provide a reason that is acceptable to the NYCPS. (Medium)	<b>Yes</b>	Appendix N.2.1 - DevOps Strategic Framework.pdf; Appendix P.1 - Security Strategy.pdf (Patching); Appendix X.2 - Communications and Status Reporting Strategy.pdf					Proactive platform patching requirement.
462	RFP-S3.25.28.6	The proposer must incorporate any bug fixes and/or enhancements specifically implemented for NYCPS as part of the next major release of the solution. (High)	<b>Yes</b>	Appendix N.3 - Engineering Approach.pdf; Appendix N.2.2 - DevOps Technical Implementation.pdf (Branching/Release Mgmt)					Customization persistence requirement during upgrades.

### 3.25.29 Stability

463	RFP-S3.25.29.1	Solutions must be designed and developed to run in a stable state irrespective of the modifications made to the solution over a period of time. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Reliability); Appendix N.3 - Engineering Approach.pdf; Appendix R - Testing Strategy.pdf (Regression)					Long-term stability NFR despite changes.
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### 3.25.30 Supportability

464	RFP-S3.25.30.1	The solution design and code shall adhere to the NYCPS Secure Coding Standard as per NYCPS information security requirements for vendors Version	<b>Yes</b>	Appendix P.1 - Security Strategy.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix N.1.2 - SDLC Technical Specifications.pdf					Secure coding standard compliance.
465	RFP-S3.25.30.2	The solution must be designed and developed to create an alert as soon as an error occurs so they can be followed up by NYCPS support teams. (High)	<b>Yes</b>	Appendix Q.2 - Observability and Monitoring Strategy.pdf; Appendix M.1 - System Architecture.pdf (Alerting)					Proactive error alerting for support NFR.

### 3.25.31 Technical Support

466	RFP-S3.25.31.1	The proposer shall provide access to OEM technical support to assist NYCPS engineering staff in resolving technical issues and requests. (High)	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Support Model); Appendix X.1 - Team Structure and Processes.pdf					Access to vendor core technical team for NYCPS engineers.
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### 3.25.32 Testability

467	RFP-S3.25.32.1	All components of the solution (including internal and external interfaces) must be testable by independent testing teams in testing environments (non-production). (High)	<b>Yes</b>	Appendix R - Testing Strategy.pdf; Appendix M.1 - System Architecture.pdf (Design for Testability); Appendix N.2.2 - DevOps Technical					Design for testability NFR.
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				Implementation.pdf (Environments)			
468	RFP-S3.25.32.2	The scope of testing will include unit testing, integration testing, regression testing, business functions testing, security testing as well as performance testing. The proposer needs to submit complete documentation (including but not limited to testing plans and results) to show that a thorough testing process has been followed during execution of the contract. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix O.1.1 - Project Execution Roadmap.pdf (Deliverables)			Comprehensive testing scope and documentation requirement.
469	RFP-S3.25.32.3	The security testing/audit needs to be based on a widely recognized industry standard, for e.g. TOP 20 OWASP Web vulnerabilities as well as security requirements from OTI, NYC3, DIIT and other related city agencies information security policies. Any or all the above testing activities may be performed by NYCPS either directly or through an authorized service provider at NYCPS's discretion. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix P.1 - Security Strategy.pdf; Appendix P.3 - Audit Framework.pdf			Specific standards for security testing; allows NYCPS testing.
470	RFP-S3.25.32.4	It is the responsibility of the proposer to provide necessary environments as well as knowledge transfer required by NYCPS to perform this testing. Proposers should submit their most recent audit findings in this area. The audit results should contain: i. Overview of the most recent security audit findings (must not include specific findings of vulnerabilities but must include an overall summary of findings of general security posture). (High) ii. Summary of recent penetration test(s) – including 3rd party scans of exposed websites, pages, and exposed services (must not include specific findings of vulnerabilities but must include a count by severity of each risk level of all vulnerabilities discovered). (High)	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)		Vendor responsibility for enabling NYCPS testing + Proposal submission requirement (Audit/Pen Test Summaries).
471	RFP-S3.25.32.5	The solution delivered must include unit tests that ensure 100% branch coverage as well as documentation to support their successful completion. (High)	Yes	Appendix R - Testing Strategy.pdf; Appendix N.3 - Engineering Approach.pdf; Appendix N.1.2 - SDLC Technical Specifications.pdf			Unit testing coverage requirement (100% branch).

### 3.25.33 Training (NFR)

472	RFP-S3.25.33.1	The solution should include technical training to monitor, maintain and/or operate the solution with no or minimum intervention from the proposer on a daily basis. (High)	Yes	Appendix T.1 - User Onboarding and Training Strategy.pdf (KT); Appendix O.1.1 - Project Execution Roadmap.pdf (Transition)				Technical training for NYCPS operational self-sufficiency.
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### 3.25.34 Usability

473	RFP-S3.25.34.1	The solution must be accessible and optimally useable on desktops and mobile devices like tablets and cell phones. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability/Accessibility); Appendix M.1 - System Architecture.pdf (Responsive Design)				Cross-device usability NFR.
474	RFP-S3.25.34.2	The solution must support all modern web browsers, including Microsoft Edge, Internet Explorer, Firefox, Chrome, and Safari. The Solution must support the most recent version and the previous two (2) versions of each browser. NYCPS constantly upgrades its approved browsers list. The solution must support all approved browsers within prescribed timeline provided by NYCPS. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR); Appendix R - Testing Strategy.pdf				Browser compatibility NFR (N-2 versions). IE mention likely outdated.
475	RFP-S3.25.34.3	The solution should support state of the art authorized users' experience (UX) design standards followed in the industry. The solution provided must clearly indicate required, optional fields and other required messages to protect authorized users against making errors. The solution must use responsive design for all authorized users' interfaces. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability); Appendix M.1 - System Architecture.pdf (UI/UX Design); Appendix N.3 - Engineering Approach.pdf				User experience quality requirement (modern standards, clarity, responsive).
476	RFP-S3.25.34.4	Solution error messages must be expressed in plain language (no codes), precisely indicate the problem, and constitutively suggest a solution or next steps that authorized users need to take to resolve the error. (High)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability); Appendix N.3 - Engineering Approach.pdf				Error message quality NFR.
477	RFP-S3.25.34.5	The solution must have consistent labeling of authorized user controls. (Medium)	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability); Appendix N.3 - Engineering Approach.pdf (UI Standards)				UI consistency requirement (labels).

478	RFP-S3.25.34.6	Solution must follow established authorized users control standards. (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability); Appendix N.3 - Engineering Approach.pdf (UI Standards)				Adherence to UI control standards.
479	RFP-S3.25.34.7	Solution must be designed such that all content must have 9th grade reading level. The proposer needs to make sure that the solution will be upgraded to meet any new reading level standards developed by NYCPS within prescribed timelines. (Medium)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability/Accessibility); Appendix T.1 - User Onboarding and Training Strategy.pdf (Content)				Content readability requirement.
480	RFP-S3.25.34.8	The solutions must follow the website style guide prescribed by NYCPS. See attachment #4 (High)	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Usability); Appendix N.3 - Engineering Approach.pdf (UI Standards); Appendix M.1 - System Architecture.pdf				Visual design compliance with NYCPS style guide (Att 4).

### 3.26 Vendor Availability and Location Requirements

481	RFP-S3.26.1	The Vendor's project and support teams are required to be available to support and perform services during the following business hours: <ul style="list-style-type: none"> <li>• Project team: 5:00 AM to 8:00 PM (local time)</li> <li>• Ground support: 5:00 AM to 8:00 PM (local time)</li> <li>• Technical support: 5:00 AM to 8:00 PM (local time)</li> </ul>	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Support Hours)				Support coverage hours requirement.
482	RFP-S3.26.2	While the specific time zone of the Vendor's project team is not a limiting factor, it is expected that all project resources align their working hours to meet this requirement.	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf				Working hours alignment requirement.
483	RFP-S3.26.3	In addition, project resources may be required to provide support outside of these standard hours on an as-needed basis, in response to urgent needs, critical issues, or project milestones. These instances will not be the norm and decided upon with the DOE Project Lead/Stakeholder and Vendor's Project Lead.	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (On-call)				Off-hours support requirement for exceptions.
484	RFP-S3.26.4	All project resources, data and data centers must be based within the continental United States.	<b>Yes</b>	Appendix M.1 - System Architecture.pdf (Hosting Location); Appendix P.1 - Security Strategy.pdf; Appendix X.1 - Team Structure and Processes.pdf				Data residency and personnel location requirement (CONUS).
485	RFP-S3.26.5	Work can be conducted either onsite or virtually, as determined	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix O.1.1 -				Work location flexibility requirement (DOE)

		by the DOE. The DOE may request that key personnel attend onsite meetings as necessary.	<b>Yes</b>	Project Execution Roadmap.pdf				decides).
486	RFP-S3.26.6	When onsite presence is required, it will take place at the following locations (or where needed): • 44-36 Vernon Blvd LIC, NY 11101 6th floor • 335 Adams St, Brooklyn NY 11201 Alternate DIIT locations within the five boroughs of New York City, as determined by the DOE.	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf				Specific potential on-site locations.
487	RFP-S3.26.7	Please note that travel expenses will not be reimbursed by the DOE. Vendors are responsible for covering any costs associated with travel to and from DOE locations.	<b>Yes</b>	Appendix Y.1 - Budget Management.pdf				Financial constraint (no travel reimbursement).
488	RFP-S3.26.8	All project resources must be legally entitled to work in the United States. In accordance with Federal law, the DOE reserves the right to request documentation from the Vendor attesting to the legal work eligibility of each consultant assigned to work on the project. The DOE does not discriminate on the basis of national origin or citizenship but requires compliance with applicable employment authorization regulations.	<b>Yes</b>	Appendix X.1 - Team Structure and Processes.pdf; Appendix P.3 - Audit Framework.pdf				Legal work eligibility requirement (US).

### 3.27 Business Continuity

489	RFP-S3.27.1	In the event of unforeseen circumstances, including but not limited to natural disasters, technological failures, or changes in business ownership, the vendor must maintain and implement a comprehensive Business Continuity Plan (BCP) to ensure the continued functionality and availability of the solution provided to NYCPS throughout the contract term. This plan should be designed to proactively address potential risks and minimize service disruptions.	<b>Yes</b>	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix U.1 - Vendor and Third Party Management.pdf				Overall BCP requirement.
490	RFP-S3.27.2	Scope and Critical Functions: Identify and prioritize all critical functions, processes, and business areas essential to the solution as outlined in the Scope of Services and Service Level Agreements (SLAs). This includes	<b>Yes</b>	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf				BCP content requirement (Critical Function Identification).

		but is not limited to customer service operations, data management, technical infrastructure, and communication channels.					
491	RFP-S3.27.3	Risk Assessment and Mitigation: Include a detailed risk assessment to identify potential threats (e.g., environmental, technical, operational, and human factors) and establish mitigation strategies. This should address risks such as system failures, data breaches, and personnel disruptions. A clear framework for evaluating and monitoring emerging risks must also be included.	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf; Appendix P.1 - Security Strategy.pdf			BCP content requirement (Risk Assessment & Mitigation).
492	RFP-S3.27.4	Operational Continuity and Recovery Procedures: Outline specific recovery strategies to ensure minimal service downtime in the event of an incident. This should include, but not be limited to: <ul style="list-style-type: none"> <li>• Data backup and redundancy protocols</li> <li>• Clear escalation paths and response times</li> <li>• Detailed recovery time objectives (RTO) and recovery point objectives (RPO)</li> <li>Alternative service delivery mechanisms, if applicable, to ensure that critical functions remain operational</li> </ul>	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.1 - System Architecture.pdf (DR/Backup); Appendix Q.2 - Observability and Monitoring Strategy.pdf (Escalation)			BCP content requirement (Recovery Strategies, RTO/RPO).
493	RFP-S3.27.5	Communication and Reporting: Define communication protocols to ensure timely and transparent updates to OPT in the event of an incident. This should include real-time reporting on the status of incident resolution, potential impacts to service levels, and proactive communication regarding any necessary actions taken to restore service.	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix X.2 - Communications and Status Reporting Strategy.pdf			BCP content requirement (Incident Communication Plan).
494	RFP-S3.27.6	Testing and Validation: Demonstrate a plan for periodic testing and validation of the Business Continuity Plan to ensure its effectiveness. This should include regular drills, simulation of potential disruptions, and updates to the plan based on lessons learned and evolving business needs.	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix R - Testing Strategy.pdf			BCP lifecycle requirement (Testing & Validation).
495	RFP-S3.27.7	Third-Party Dependencies: Account for third-party dependencies that may impact	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix U.1 -			BCP content requirement (Supply Chain Risk).

		the continuity of services and include mitigation strategies for each identified critical third-party supplier or partner.		Vendor and Third Party Management.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf				
496	RFP-S3.27.8	Change Management: Define processes for maintaining and updating the Business Continuity Plan in the event of changes in business operations, technological advancements, or contract amendments. The plan must be kept current and aligned with any changes in OPT's operational needs or the vendor's service delivery model.	Yes	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix O.2.2 - Project and Change - Risk Management Methodology.pdf				BCP lifecycle requirement (Maintenance & Updates).
497	RFP-S3.27.9	The Business Continuity Plan must be submitted as part of the proposal, and the vendor should be prepared to provide periodic updates or demonstrate its effectiveness upon request by NYCPSC.	No	N/A (Proposal deliverable)	Identified Gap (Proposal Content)			Proposal deliverable requirement (BCP).

### 3.28 System and Web-Based Application Requirements

498	RFP-S3.28.Intro	These requirements are geared for third-party developers who develop applications for the NYCDOE. The requirements ensure that the applications will work correctly in the NYCDOE environment and are supportable by the NYCDOE.	Yes	[General: Architecture, Development, Compliance, Security docs]				Intro statement for specific NYCDOE dev requirements.
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#### 3.28.1 Integrated System Components

499	RFP-S3.28.1.1	Proposers will be required to provide the NYCDOE with all required services, including system features of the proposed OPT Transportation Management System as described in Section 3 – Scope of Services. Proposers must detail in their Program Plan (Appendix E2) how they will develop and/or implement the required features.	No	N/A (Proposal deliverable - Appendix E2)	Identified Gap (Proposal Content)			Proposal requirement linking proposal plan to Scope of Services.
500	RFP-S3.28.1.2	Vendor will be required to comply with NYCDOE policy on systems and security requirements and NY State policy on web-based applications, please refer to Appendix I – Information Security Requirements for Vendors and Appendix J – Requirements for Web Applications.	Yes	Appendix P.3 - Audit Framework.pdf; Appendix P.1 - Security Strategy.pdf; [Referencing Appendices I & J]				Compliance requirement referencing specific Appendices.
501	RFP-S3.28.1.3	The proposed system should be web-based and capable of	Yes	Appendix M.1 - System Architecture.pdf; Appendix M.2 -				Platform/Browser compatibility

		running without error on PC and MAC systems, compatible with Microsoft Edge, Google Chrome, and Apple Safari, at a minimum.		Solution Design Functional and Non Functional Requirements.pdf (NFR); Appendix R - Testing Strategy.pdf				requirement.
502	RFP-S3.28.1.4	The system must provide accommodations to ensure Universal Access. The high-level accessibility requirement is to ensure that the system provides persons of all abilities equal access to the system.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Accessibility); Appendix N.3 - Engineering Approach.pdf				High-level accessibility principle.
503	RFP-S3.28.1.5	The system shall comply with the Web Content Accessibility Guidelines (WCAG) 2.0, Level AA (Intermediate). These guidelines are published by the Web Accessibility Initiative (WAI) of the World Wide Web Consortium (W3C) and are available at: <a href="http://www.w3.org/TR/WCAG20/">http://www.w3.org/TR/WCAG20/</a> . The WCAG 2.0 Level AA checklist is provided in the table below and is also available at: <a href="https://www.wuhcag.com/wcag-checklist/">https://www.wuhcag.com/wcag-checklist/</a> . WCAG 2.0 Checklist Level AA (Intermediate) [Checklist omitted for brevity]	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf; Appendix P.3 - Audit Framework.pdf; Appendix R - Testing Strategy.pdf; Appendix N.3 - Engineering Approach.pdf				Specific accessibility standard (WCAG 2.0 AA). Checklist details in RFP text.

### 3.28.2 Minimum Client Platform Requirements

504	RFP-S3.28.2.1	Applications should be developed to support versions of the following web browsers released within the last two (2) years: A. Microsoft Edge B. Google Chrome C. Apple Safari	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR); Appendix R - Testing Strategy.pdf				Browser version support requirement (last 2 years).
505	RFP-S3.28.2.2	The application must function on machines with the following specifications: A. Microsoft Windows 10 version 21H1 and higher with 4GB RAM and at least two CPU cores B. Apple Macintosh with OS 12 (Monterey) and higher C. iOS 16 and higher D. Android 13 and higher E. Chromebooks running ChromeOS 101 and higher	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR); Appendix R - Testing Strategy.pdf				Minimum client OS/hardware specs.
506	RFP-S3.28.2.3	The application may not use client-side Java or Flash.	Yes	Appendix M.1 - System Architecture.pdf; Appendix N.3 - Engineering Approach.pdf				Technology constraint (no Java/Flash applets).

### 3.28.3 Performance

507	RFP-S3.28.3.1	Performance should be acceptable using wireless or wired connections.	Yes	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix R - Testing Strategy.pdf				Network performance expectation.
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508	RFP-S3.28.3.2	Applications should perform over wireless cellular networks using personal hot spots and broadband cards.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Performance); Appendix R - Testing Strategy.pdf				Cellular network performance requirement.
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### 3.28.4 Solution Documentation

509	RFP-S3.28.4.1	The following information must be provided for the web-based application: Service-level agreements (SLAs) for application and service availability.	<b>Yes</b>	Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Availability); Appendix U.1 - Vendor and Third Party Management.pdf (SLAs)				Documentation requirement (Availability SLAs).
510	RFP-S3.28.4.2	The following information must be provided for the web-based application: Data backup and recovery commitments including Recovery Point Objectives (RPO) and Recovery Time Objectives (RTO).	<b>Yes</b>	Appendix Q.1 - Business Continuity Plan And Operational Excellence.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR BCP)				Documentation requirement (RPO/RTO).

### 3.28.5 Compliance with NY State Policy and NYCDOE Guidelines

511	RFP-S3.28.5.1	Any web-based information and applications development, or programming delivered pursuant to the contract or procurement, will comply with New York State Enterprise IT Policy NYS-P08-005, Accessibility of Web-Based Information and Applications as such policy may be amended, modified, or superseded, which requires that state agency web-based information and applications are accessible to persons with disabilities. Web-based information and applications must conform to New York State Enterprise IT Policy NYS-P08-005 as determined by quality assurance testing. Such quality assurance testing will be conducted by the NYCNYCPS Division of Instructional and Informational Technology Program Management Office and/or the Digital Communications office and the results of such testing must be satisfactory to the NYCDOE before web-based information and applications will be considered a qualified deliverable under the contract or procurement.	<b>Yes</b>	Appendix P.3 - Audit Framework.pdf; Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (NFR Accessibility); Appendix R - Testing Strategy.pdf				NYS Accessibility Policy compliance (NYS-P08-005) + NYCDOE QA testing.
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### 3.28.6 License and Ownership

512	RFP-S3.28.6.1	Proposer must represent and warrant that the license to any software it proposes to provide under any contract entered into as a result of this solicitation conforms in all respect with the software specifications and that it has the authority to license the software.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms)				Legal/Contractual requirement (Licensing Authority).
513	RFP-S3.28.6.2	Proposer must transfer, assign, and convey a nonexclusive, perpetual and irrevocable license for any and all materials delivered under any contract that is entered into as a result of this solicitation to the NYCDOE, free and clear of any liens, claims or other encumbrances, The NYCDOE may use any work product prepared by the proposer in such manner, for such purposes, and as often as the NYCDOE may deem advisable, in whole, in part or in modified form, in all formats now known or hereafter to become known, without further employment of or additional compensation to the contractor.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms/IP)				Broad licensing rights grant to NYCDOE for deliverables.
514	RFP-S3.28.6.3	The NYCDOE may consider other licensing and/or ownership arrangements at its discretion.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms)				Flexibility clause regarding licensing.
515	RFP-S3.28.6.4	The NYCDOE would retain ownership of all data.	<b>Yes</b>	Appendix S.1 - Data Governance and compliance controls.pdf; Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms)				Data ownership clarification.
516	RFP-S3.28.6.5	Upon request by the NYCDOE, the Proposer shall provide a copy of the software license for any software that the Proposer includes in its proposal.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf; Appendix P.3 - Audit Framework.pdf				Transparency requirement (License review).
517	RFP-S3.28.6.6	Any data, reports, evaluation documents, work papers, notes, correspondence, visual and/or sound recordings, and other forms of documentation generated under any contract entered into as a result of this solicitation, as well as any materials the Proposer is required to furnish the NYCDOE, including drafts and reproduction copies thereof, shall be the exclusive property of the NYCDOE.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms/IP); Appendix S.1 - Data Governance and compliance controls.pdf				Broad NYCDOE ownership of generated documentation/materials.

518	RFP-S3.28.6.7	Upon request by the NYCDOE, the Proposer shall deliver all materials to the NYCDOE. Except in connection with the performance of its obligations under any contract entered into as a result of this solicitation, the Proposer shall not publish, cause or allow to be published, or license the use or re-use of all or any portion of the above-expressed documentation and/or recordings without prior written approval from the Chancellor or his/her designee(s). The Proposer may otherwise keep copies of such materials for internal use in connection with performance of any contract entered into as a result of this solicitation only.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms/IP); Appendix S.1 - Data Governance and compliance controls.pdf					Material delivery and usage restriction requirement for vendor.
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### 3.28.7 End-User License Agreement

519	RFP-S3.28.7	Any end-user license agreement, "clickwrap," "click-through," "click and accept," "web-wrap," or other form of agreement requiring the individual user to accept terms in order to use or benefit from the Services herein shall not be enforceable by the Contractor and shall be non-binding and null and void as against any individual user, including, but not limited to, a student, a parent/guardian, a teacher, or any other NYCDOE employee. Contractor agrees that all terms and conditions regarding the Services are contained within the Agreement between the Contractor and NYCDOE.	<b>Yes</b>	Appendix U.1 - Vendor and Third Party Management.pdf (Contract Terms); Appendix M.2 - Solution Design Functional and Non Functional Requirements.pdf (Design consideration)					Legal requirement invalidating individual EULAs. Main contract governs.
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## Section 4 Proposal Requirements

520	RFP-S4.Intro	Your proposal must fully address all of the Scope of Services listed in Section 3, above. Proposals will be evaluated on the basis of their content, not length. Using Appendices E1, E2, F, and G, plus Attachment B (also see Section 6 below), organize your proposal to address the following four (4) sections.	<b>No</b>	N/A (Proposal structure)	<b>Identified Gap (Proposal Content/Structure)</b>				Instruction for overall proposal organization and content linkage.
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### 4.1 Organizational Capacity (Appendix E1)

521	RFP-S4.1	In this section, Proposer must show evidence of adequate human, organizational, technical, and professional resources, and abilities to meet the needs of this RFP. Organizational capacity shall include compliance with NYCDOE and other relevant administrative and operating policies and procedures, in addition to the capacity to provide services. Include, but do not limit to the following:	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Requirement for content in Proposal Appendix E1.
522	RFP-S4.1.1	An organizational chart of the overall company responding to this RFP. Include subcontractor(s) information, if any, within the organizational chart in Appendix E1. Be sure to designate information as subcontractor titles and not as the submitting organization's personnel.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific deliverable (Org Chart) in Proposal Appendix E1.
523	RFP-S4.1.2	A program specific organizational chart showing the specific titles and, if available, employees who will be slated to work on this project. Also, if applicable, include an approximate percentage of the award that will be allotted to any subcontractor(s) contributing to work on the program (see Section 8 for further detail).	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific deliverable (Program Org Chart) in Proposal Appendix E1.
524	RFP-S4.1.3	Resumes and, if applicable, copies of appropriate licenses/certifications of key personnel who will provide the proposed services. Include information for subcontractors, if any, who will be working on the program within the Program Plan in Appendix E2 (see Section 8 below for more information).	No	N/A (Proposal content - Appendix E1/E2)	<b>Identified Gap (Proposal Content)</b>			Specific deliverable (Resumes/Licenses) in Proposal Appendix E1/E2.
525	RFP-S4.1.4	Your organization's maximum capacity, in terms of number of schools and students or staff that your organization can provide services to within a school year and/or summer, based on current staffing levels.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific information request (Max Capacity) in Proposal Appendix E1.
526	RFP-S4.1.5	Personnel available for the various components of proposed services, such as speakers, consultants, on-site mentors, and workshop presenters who are not full-time employees.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific information request (Non-FTE resources) in Proposal Appendix E1.

## 4.2 Demonstrated Effectiveness (Appendix E1)

527	RFP-S4.2	Proposer shall include a description of all prior experience in the execution of the proposed services or similar services and, in addition to the information submitted to meet the Minimum Qualifications required in Section 2, above, include:	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Requirement for content in Proposal Appendix E1.
528	RFP-S4.2.1	Details of Proposer's background, qualifications, and experience in providing these specific or related services as described in Section 3 of this RFP.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific content requirement (Relevant Experience) in Proposal Appendix E1.
529	RFP-S4.2.2	Details on the methods used and objectives, and the results obtained by those methods. Provide objective data, if available. (The NYCDOE reserves the right to verify any experience presented).	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific content requirement (Methods/Results/Data) in Proposal Appendix E1.
530	RFP-S4.2.3	Any experience working in public schools or with a public school system.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific content requirement (Public School Exp.) in Proposal Appendix E1.
531	RFP-S4.2.4	Proposer must submit three (3) letters of reference from organizations that have paid the proposer directly for the same or similar services as detailed in this RFP. Each reference must state the date(s), location(s), and description of the service(s) provided. Please also refer to the requirement under Section 2.3, Minimum Qualifications.	No	N/A (Proposal deliverable - References)	<b>Identified Gap (Proposal Content)</b>			Specific deliverable (References) for Proposal. Links to Min Qual 2.2.
532	RFP-S4.2.5	If any, list of government contracts, including with the NYCDOE, awarded to the proposer in the past ten (10) years. The NYCDOE reserves the right to verify a proposer's performance in the execution of such contracts.	No	N/A (Proposal content - Appendix E1)	<b>Identified Gap (Proposal Content)</b>			Specific information request (Govt Contracts List) in Proposal Appendix E1.

## 4.3 Program Plan / Narrative (Appendix E2)

533	RFP-S4.3.1	The Program Plan must be a clear, detailed, rational, and concise description of the overall program content, structure and methodology on how the Proposer's program will provide the services required in the Scope of Services in Section 3, above.	No	N/A (Proposal content - Appendix E2)	<b>Identified Gap (Proposal Content)</b>			Requirement for content in Proposal Appendix E2 (Methodology linking to Sec 3).
534	RFP-S4.3.2	The Program Plan must show a clear understanding of the services	No	N/A (Proposal content - Appendix	<b>Identified Gap (Proposal Content)</b>			Specific content requirements

		required in this RFP and demonstrate how the proposed plan will meet the goals and objectives of the RFP. The proposal must contain a work plan indicating approximate dates and frequency of the services you will provide. Also, the proposal must include how the proposer will assess and report its successfulness in providing these services.	E2)			(Understanding, Work Plan, Success Metrics) in Proposal Appendix E2.
535	RFP-S4.3.3	Proposers must provide a separate program plan for each component proposed. The supplied proposal form (Appendix E1) includes a table that you must use to indicate the components you are proposing.	No	N/A (Proposal structure - Appendices E1/E2)	<b>Identified Gap (Proposal Content/Structure)</b>	Structural requirement for Proposal Appendix E2 (component-based).
536	RFP-S4.3.Note	Please note: Proposer must include in the proposal whether or not Proposer will be using an automobile during the provision of services. If applicable, evidence of the appropriate motor vehicle liability insurance coverage will be required.	No	N/A (Proposal content - Appendix E2)	<b>Identified Gap (Proposal Content)</b>	Specific information request (Vehicle Use/Insurance) in Proposal Appendix E2.

#### 4.4 Pricing and Cost Budget (Appendices F and G)

537	RFP-S4.4	Proposers must submit a Pricing Form (Appendix F) that provides line-item pricing for the proposed services. The unit prices in this form will be the basis for your invoices. Proposers must also submit a Cost Budget Summary Form (Appendix G), which will provide a breakdown of the cost elements (e.g., labor, materials, etc.) for the proposed prices depicted in Appendix F. Proposers must download each appendix from the NYCDOE vendor portal. It is recommended that both pricing appendices be completed by the Proposer's accounting/finance department. Prior to entering into a contract, the NYCDOE reserves the right to review the records used to calculate the costs associated with the prices depicted in Appendices F and G for the selected proposal.	No	N/A (Proposal content - Appendices F/G)	<b>Identified Gap (Proposal Content)</b>			Requirement for proposal content (Pricing/Cost in Appendices F/G).
538	RFP-S4.4.1.1	Proposers must complete the line-item pricing form in accordance with the instructions in Appendix F.	No	N/A (Proposal content - Appendix F)	<b>Identified Gap (Proposal Content)</b>			Instruction to complete Proposal Appendix F.

539	RFP-S4.4.1.2	The Pricing Form requires unit prices. Unit prices must include all of the costs associated with the services in the proposal for which a Proposer will be charging the NYCDOE. Proposers will not be able to invoice for items not included on the finalized budget.	No	N/A (Proposal content - Appendix F)	<b>Identified Gap (Proposal Content)</b>			Detail on Appendix F content (Unit prices, all-inclusive).
540	RFP-S4.4.1.3	Any materials offered through this contract must be ancillary to the services provided.	No	N/A (Proposal content - Appendix F)	<b>Identified Gap (Proposal Content)</b>			Constraint on selling materials via Appendix F.
541	RFP-S4.4.2.1	Proposers must complete the cost budget form in accordance with the instructions in Appendix G.	No	N/A (Proposal content - Appendix G)	<b>Identified Gap (Proposal Content)</b>			Instruction to complete Proposal Appendix G.
542	RFP-S4.4.2.2	Proposers must complete an Appendix G form for every contract year. Proposers may, however, submit one Appendix G to combine years in which the annual budget amount is the same for multiple years; in which case, Proposers should enter 1) the annual amount, 2) contract years for which the costs are applicable and 3) total amount for all the years in the space provided: Total Amount Proposed for Services. Additionally, Proposers that submit Best and Final Offers may be required to complete an Appendix G for each line item or specific line items depicted in Appendix F.	No	N/A (Proposal content - Appendix G)	<b>Identified Gap (Proposal Content)</b>			Instruction on structure for Proposal Appendix G (per year or combined).
543	RFP-S4.4.2.3	Proposers must include a breakdown of all the costs associated with the services in the proposal for which a Proposer will be charging the NYCDOE; including, but not limited to, labor, materials, rental/equipment, general and administrative costs, and profit, as applicable. Additionally, itemize any services that will not be charged to the NYCDOE in Section F, In-Kind Contribution.	No	N/A (Proposal content - Appendix G)	<b>Identified Gap (Proposal Content)</b>			Content requirement for Proposal Appendix G (Cost breakdown, In-kind).
544	RFP-S4.4.2.4	Appendix G must be detailed and accurately reflect the corresponding totals included in Appendix F. The totals in Appendix G must match the totals in Appendix F.	No	N/A (Proposal content - Appendices F/G)	<b>Identified Gap (Proposal Content)</b>			Consistency requirement between Proposal Appendices F & G.
545	RFP-S4.4.Note	Note: In addition to Appendices F and G, Proposers may also include additional pricing information or budget narrative, if necessary, to	No	N/A (Proposal content - Optional)	<b>Identified Gap (Proposal Content)</b>			Allows optional additional pricing clarification in Proposal.

further clarify pricing/cost  
structure.