Notice of Request for Quotes (RFQ) Released January 31, 2018
CITY OF SANDY Transit Vehicle Information Technology System (ITS)

The City of Sandy Transit Department (Sandy Transit) is seeking price quotes from qualified candidates (Proposer) for the purchase, installation and maintenance of vehicle ITS including the following functions as a minimum: tablets and/or mobile data terminals (MDT) for 11 vehicles, automatic vehicle location (AVL), automatic stop announcement (ASA), and additional capabilities, equipment and functions as described in the Scope of Work section of this request for quotes.

Please send your quote with a complete and thorough breakdown of costs to:

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Scope of Work

1. General

All requirements and specifications in this scope of work are minimum requirements. Any exceptions to these requirements must be addressed in the proposal on an attachment labeled "Exceptions to Minimum Requirements".

1.1 Background

(a) The city of Sandy (City) currently owns and operates the Sandy Area Metro (SAM) system. The City has received a Transit Network Grant to purchase, install and maintain ITS equipment on 11 vehicles. The ITS will require: tablets or mobile data terminals (MDT), automatic stop announcements (ASA) preferably voice and visual, automatic vehicle location (AVL), extensive and customizable reporting, a mobile and web application developed by third party developers and communications capabilities with dispatch. The buses currently communicate to/from the base through the use of a digital radio system.

(b) Currently, destination signs are either Luminator or Hanover. Please specify if your system is compatible with exterior automated destination announcements through the destination signs and PA system.

(c) SAM currently uses SILKE radios for communications.

1.2 General Requirements

The system proposed shall include all hardware, cables/connectors, software, human interface devices, installation, performance testing and commissioning reports, user (administrative, despatcher and driver) training and documentation, maintenance training and documentation, and operation support during at least the warranty period.

Systems and equipment shall be installed on 11 SAM/MHX buses. The computer software systems and any supporting network/server equipment required and installed at the Operations Center shall be acquired, provided, installed and tested while working with the City IT staff. Any computers, servers or network equipment acquired as a part of this system shall be approved by City IT staff before the purchase is made. The tablets/MDTs shall provide a customizable driver interface to allow log in for the bus runs(s), reporting on schedule adherence, two-way messaging with the dispatcher, access to prerecorded announcements that can be activated as needed by the driver, and a maintenance interface to the on-board system. The tablets/MDTs can also be programmed to provide a manual data input used for special demographic counts. The tables/MDTs also allow for driver input on service exceptions for unforeseen circumstances such as train delays, accidents, construction detours, equipment failure, etc.

Include how the AVL information is obtained and how often then the location data is transferred to the base station. This data is also used to track route and schedule compliance and generates an alert if the buses are off route or early, late or very late.

The ASA system shall provide on-board announcements of upcoming stops through both audio and destination signs. The system includes the ability to provide external announcements at selected stops that include the bus route being serviced by the bus.

The computer software system (for computer aided reporting but not dispatch at this time) station shall be located at the city of Sandy Operations Center. The dispatcher workstation shall include a map showing each route, stop location, time point, real-time bus location, driver assignments, schedule adherence status and alerts. Also included is the display of the activation of an on-board panic alarm.

Some key report capabilities are system and driver performance (including route and run compliance and schedule adherence), and a variety of ridership reports, such as boarding, alighting and total. These reports display schedule adherence both numerically, as a percentage and graphically. The system should report runs that are on-time, late, very late and early driver, bus, time of day, stop, run, route, day of the week for any period of time (day, week, month or any portion of these) as selected by the person generating the reports.

The ridership data shall also be reported by time period in similar ways to schedule adherence. A replay feature where a period of time in the past can be “replayed” to provide information that can be used to respond to customer or management inquiries, key reporting for the monthly and annual National Transit Database (NTD) reports including ridership data (total ridership, system miles, passenger trip miles, etc.).

Included in the ridership data provided by the system shall be demographics, ADA lift/ramp activations by route, time and stop and any service exception entered by the driver. Generating the reports will be simple and information can be represented graphically if desired, for easy

interpretation. Most of the reports shall be "canned" and accessed using pull-down menu selections. Reports on a specific driver's performance related to schedule adherence shall be produced through this system. The reports can be available as raw, exportable data (comma, table, or space delimited formats); tables; and pie and bar charts. All reports can be shown graphically on the workstation and can be saved as a file and/or printed out.

1.3 Work to Be Performed by Proposer

The Proposer shall perform all work tasks in the delivery, installation, and testing of the complete system except for those tasks specifically identified as tasks to be performed by the City. The Proposer shall perform the following work:

(a) The Proposer shall deliver the equipment to be installed in accordance with the project schedule (1.6).

(b) The Proposer shall be responsible for all work and expenses relating to the design, delivery, configuration, installation and testing/commissioning to ensure full operation of the system. This work includes development of driver lists, routes, runs, stops, time point, schedules and recorded announcements and any other date required to make the ITS fully functional.
(c) The Proposer shall make on-site visits and surveys, as determined by the City, as necessary to become wholly familiar with the transit vehicle fleet, dispatch locations and computer/network systems and for troubleshooting problems related to installation and commissioning. Also, familiarity is required for any repairs during warranty period of the system other than for items that can be exchanged without requiring on-site support.

(d) The Proposer shall provide an installation and implementation team responsible for installing and implementing the entire system in accordance with the Proposer's schedule, as approved by City.

(e) The Proposer shall supply such materials and supervision as necessary for the proper installation and testing/commissioning of the system. Upon final acceptance of the system by City, the Proposer shall provide full written documentation of the system including system configuration, design, operating and maintenance manual, and system/software training and user's guide.

(f) The equipment and software, subsequent to testing, shall be suitable for operations and complete in every respect.

(g) The Proposer shall make available full and competent engineering services to document and correct problems associated with the performance of the equipment in accordance with the schedule.

(h) In event of a fleet defect as defined in Section 1.46 (d) Warranty and Guaranteed, the manufacturer's representative shall correct the defect within two business days.

(i) The Proposer shall offer a fee schedule that addresses the upgrades, debugging of software and firmware, and repairs of the hardware and other services that would be incurred after the expiration of the warranty period.

1.4 Work to Be Performed By City

City shall perform the following work:

(a) City shall review, approve, disapprove, or make recommendations to the project schedule and work plans and equipment and materials submittals with five working days after submittal.

(b) City shall make vehicles available Monday through Friday, from 6:15 am to 9:00 pm during the installation period in accordance with the contractor's approved schedule that assures no disruption to the delivery of transit service.

(c) City shall make appropriate space available to store parts and associated equipment for a maximum of seventy-two hours prior to installation. No material, tools, labor, or facilities will be furnished by City unless otherwise provided for in the solicitations.

(d) City shall participate with the Proposer in the performance of a design and initial operations test no later than one week after commencement of system operation in revenue service.

(e) City will participate with the Proposer in the performance of a final acceptance test no later than two weeks after the contractor has released the completed system (all vehicles and supporting infrastructure) for operation in revenue service.

1.5 Workmanship

(a) The workmanship employed by the Proposer shall be of the best quality and to the highest standard of commercially acceptable practice for the class of work, and shall result in the installation and equipment having a neat, clean, and finished appearance. The Proposer shall perform all work hereunder in compliance with all applicable federal, state, and local laws and regulations. The Proposer shall use only licensed personnel to perform work required by law to be performed by such personnel.

(b) Approval by City of any submitted plans of the Proposer shall not relieve the Proposer of responsibility for proper, workmanlike, cosmetically acceptable, and safe completion of any work specified herein. All work performed by Proposer or its subcontractors or consultants shall be subject to the inspection and approval of City at all times, but such approval shall not relieve Proposer of responsibility for the proper performance of the services. City shall perform inspections and tests in a manner that will not unduly delay the work.

(c) If any of the services do not conform to contract requirements, City may require the Proposer to perform the services again in conformity with the contract requirements, at no increase in contract amount. When the defects in services cannot be corrected, City many: (1) require the Proposer to take necessary action by an agreed upon timeframe to ensure that future performance conforms to contract requirements and (2) reduce the contract price to reflect the reduced value of the services performed.

(d) If the Proposer fails promptly to perform the services again or to take the necessary action to ensure future performance in conformity with contract requirements, City may: (1) by contract or otherwise, perform the services and charge to the Proposer any cost incurred by City that is directly related to the performance of such service, or (2) terminate the contract for default.

1.6 Delivery Schedule

(a) The Proposer shall submit a detailed delivery schedule for approval by City within thirty days after Notice of Award. Equipment and services should be delivered, installed and operational prior to June 01, 2018. Vehicles shall be out of service on a one-by-one basis, meaning that at no time shall any two of Sandy Transit's revenue service vehicles be simultaneously out of service due to installation by the Proposer.

(b) City is receptive to an accelerated delivery schedule provided such can be accomplished without compromise to the quality of the product or the implementation of the system and has no negative impact on normal Sandy Transit service levels.

1.7 Project Scope

(a) In addition to the computer software systems system described earlier, the system installed in the transit vehicles will be "intelligent vehicle" technology including automatic vehicle location (AVL), customizable tablets or mobile data terminals (MDT), automated stop announcements (ASA). The system may include a panic button in each bus that will provide a silent alarm on the bus and an emergency notification at the dispatch point(s). The system may be able to track ADA lift/ramp. Optionally, the system will include connections to the vehicle's system for telematics, on the vehicle engine, transmission and other key systems. This data shall be exported in an easy-to-use report for use by the vehicle maintenance staff.

(b) The system shall be based on open system architecture, using established Intelligent Transportation System (ITS) and vehicle system communication protocol for all components. The route, run, stops, and schedule data shall be easily exported in General Transit Feed Specifications (GTFS) format to be uploaded to Google Transit. The data communications between the devices should use the Transit Communications Interface Profiles (TCIP) format.

(c) The "intelligent vehicle" technology shall be fully integrated into a single system and the Proposer will ensure that any system components from multiple Proposers will provide the long-term functionality and reliability desired by City.

(d) Data from the vehicle systems will be transferred to and from the central processing servicer (local or remote) via a wireless local area network (LAN), or in real-time using digital data radios or cellular services.

(e) The MDTs shall provide access to and control of the destination sign controller to eliminate the need for the operator to use the keypad on the destination sign controller to force a change to the automatic changes driven by the system. The customizable tablet or MDTs shall provide driver access to prerecorded announcements for ad hoc playing and for two-way messaging between the bus and the dispatch/administration workstations. The MDTs will be used as a single point of login to the system and each driver shall have a unique user ID. Login shall include driver ID and service assignments (routes and runs). Logins shall be recorded and transmitted to the central system.

1.8 Minimum System Requirements

The minimum system requirements are as follows:

(a) The system (s) shall include sensor hardware, cables/connectors, communications hardware, CPU hardware and software, human interface devices, installation, relevant end-user reports, user training and documentation, maintenance training, documentation and operational support.

(b) The system shall provide a server(s) (local at City facilities or remotely hosted by the Proposer) to which each vehicle downloads the collected data into a database. The server(s) shall have sufficient storage space to accommodate all necessary data processing functions, on-line retention of five (5) years of detail data captured by each vehicle. The server(s) and the associated software and data shall be accessible at all time by the computer software system (located at the Ops Center). The AVL and, if available, bus passenger load data shall be made available to third party developers through the provision of a web accessible API port.

(c) The AVL route/stops data in the system shall identify the correct bus stop 100% of the time stops being within one meter of the actual vehicle location when the vehicle is stationary and +10 meters while the vehicle is in motion.

(f) City require AVL data be transferred in real time and prefers some of the other data transfer to in real time.

(g) The Automated Stop announcement (ASA) component of the system shall provide automated audible and visual passenger announcements based on the vehicles' actual location. The system's audible component should be capable of delivering multilingual announcements that are synchronized with the made in English and Spanish language formats. The visual display shall utilize the internal LED destination sign. The announcements shall be made in advance of the stop and based on distance parameters set by City. This system component shall cue and deliver designated announcements with a 100% degree of accuracy and dependability.

(h) The computer software system shall have the ability to simultaneously display statistical summaries in both graphical and tabular form of any user-selected parameters, specific minimum reports are as per subsection (k) below.

(i) The system software shall have automated equipment diagnostics and component (e.g. MDTs, onboard signs, data radio/cellular radio) fault reporting.

(j) The system shall be designed such that each major component is modular and can be easily replaced in the field within 30 minutes of an error being detected and identified.

(k) All reports shall be simple to generate and easy to interpret, and queries shall be easy to create. Reports shall be capable of being produced with a variety of detail, including schedule adherence by: driver; stop location; run; route; time of day; day of week time of day for all runs and routes; week for runs and routes; month for all runs and routes; and summary reports (totals) by day, week, month and route. The system shall generate a monthly, quarterly and annual report on passenger miles traveled suitable for use in FTA NTD reporting. All reports shall be capable of generation using customizable parameters selected by a administrator. The system shall be capable of generation using customizable parameters selected by an administrator. The system shall have a base set of reports to provide the following information:

Stop level:
- Boardings
- Alighting
- Lift use
- Swell time
- Schedule adherence reported in percentage of early, on-time, late and very late departures (parameters to be set by City)

Trip (runs) Level, Route Level, System Level:
- Boardings
- Alighting
- Number of passengers on board from one defined trip to another
- Average peak load for a select time period
- Average maximum boardings for a stop
- Schedule adherence reported in percentage of early, on-time, late and very late departures (parameters to be set by City)

NTD reporting, as follows: total actual vehicle miles, total actual vehicle revenue miles, deadhead miles, total scheduled vehicle miles, total actual vehicle hours, total actual vehicle revenue hours, dead head hours, total scheduled revenue hours, total number of unlinked passenger trips, passenger miles traveled.)

Other Important Information:

The City of Sandy can procure cell data from Verizon separately, please include this consideration in your quote.

Please include a breakdown of cost by year to illustrate the one-time cost of installation and the annual cost of continuance, up to 3 years.

Please be specific regarding the app/web applications possible. Such as stand along app, system listed in an app with all other providers, google maps, etc.

Project and installation complete by June 01, 2018.

City of Sandy will announce the award to Proposer not later than February 23, 2018.

Thank you!!

Please use the pricing matrix included below. Add any information or exceptions.

		(A)	(B)	(C)	(D)
Item #	Description	Quantity	Purchase Unit Price	Total Purchase Price (unit x quantity)	Term (1 time/recurring)
1	CAD Automatic Vehicle Locator (AVL)	11 (required)			
2	All equipment necessary for connection of VLU (include shipping)	11 (required)			
3	Base hardware installation of VLU	11 (required)			
5	Software license: unlimited user accounts, web based dispatch software, real-time arrival predictions, geo-fence administration, reports, reroute planner module, user administration module, service announcements module	1 (required)			
4	MDT or Tablets: driver login, route selection, 2-way messaging, anti-bunching (include shipping)	11 (required)			
	Digital Counting on MDT, 4-5 count types configurable	11			
	Option for real time counts for wheelchairs/bikes	11			
7	Base hardware installation of MDTs or tablets	11			
9	Automated Voice Annunciation (AVA) capability, including audio recording, PA integration and on-board announcements software	11 required			

	license.				
10	Automated Visual Announcement (outside destination sign automated)	11			
	Interior Readers	11			
11	Driver initiated ad-hoc announcements	11			
12	Programmable announcements according to location	11			
13	24/7 tech support, Daily backups, FTP data downloads	11			
14	Cellular Data, Hosting, maintenance	11			
	Cloud Hosting	1			
	Self-Hosting	1			
15	On-site project management, maintenance, support	1			
17	Phone application - customizable local experience, real-time bus tracking, color coded routes, displays user GPS location, real-time bus arrival prediction, public service announcements	1 (required)			
18	Vehicle Connection to Wi-Fi local area network for larger data transfers	11			
19	Provide web-accessible API port to AVL/APC data for 3rd party developers	1			

20	Web app, also accessible on modern phones, custom local experience, real-time bus arrival prediction, public service announcements	1 (required)			
21	Bus/vehicle telematics and maintenance reporting system	11 optional			
22	System administrator training	1 session required			
23	Driver Training	2 sessions required			
24	Maintenance Training	1 session (required)			
25	Manufacturers recommended on-site spare parts inventory	1 (list)			
26	Annual system support after expiration of warranty period	3 years			
27	Public website	1 (required)			
28	Project Completion by June 01, 2018	Required			