



**CITY OF OAK RIDGE
REQUEST FOR PROPOSAL
SPECIFICATIONS
for
FUEL MANAGEMENT SYSTEM**

It is the intent of these specifications to describe a fleet fueling management system to replace the current Gasboy system in use by the City of Oak Ridge.

The system shall control and manage fueling of vehicles at two fueling locations. All hardware, software, and equipment necessary to fuel 400+ vehicles shall interface seamlessly without the need for manual input.

Vendor to include all labor associated with the removal of the old system and installation of the new system complete. Vendor to include up to 8 hours of employee training after the system is fully operational.

Due to the need for 24/7 fueling service the vendor shall coordinate all work with the Public Works Department. Some work may need to be scheduled on weekends and/or off-peak hours.

These are minimum specifications. Any items needed for a complete system that are not listed must be included with your proposal.

Please contact Mike Miller, Streets and Fleet Manager at 865-425-1815 to schedule a site visit.

All proposals must be received by the Public Works Department no later than 4:00 p.m. (local time) on Tuesday September 20, 2016. Proposals must be in a sealed envelope clearly marked "Proposal for Fuel Management System" and submitted to:

City of Oak Ridge
Attention: Susan Fallon, Public Works Department
100 Woodbury Lane
Oak Ridge, TN 37830

or to mailing address:

City of Oak Ridge
Attention: Susan Fallon, Public Works Department
P.O. Box 1
Oak Ridge, TN 37831-0001

Business Summary

Each vendor must include a one page summary of the vendor's operation. The summary at a minimum should include the following:

- Number of years in business
- Number of years as an authorized dealer for the equipment in your proposal
- Nearest service location
- Approximate lead time to start project
- Estimated days to completion.

System Requirements

System manufacturer must have a minimum of ten (10) years of experience in the design and manufacture of fuel management equipment.

The proposed system must conform to ISO 9001 - 2000 standards for quality management systems. System shall be UL and cUL approved.

Fueling Procedures

The system shall allow automated and manual fueling.

In the fully automated mode, all control, authorization and accounting operations will be conducted automatically by the fuel management system with no manual input required by the operator using the fuel facility.

The automated fueling procedure shall be as follows:

- HID reader and Gasboy Fleet Keys shall be available as an option
- A two stage authorization process shall be provided by identifying both the vehicle and the driver prior to refueling
- Both driver and vehicles IDs should be stored in the transaction
- The two stage authorization process should be flexible enough to link the vehicle device either to a specific driver or to a list of drivers

Site Controller

The site controller shall be a stand-alone unit comprising all required peripherals including:

- central processing unit
- display panel
- pump control module
- communication modules
- optional receipt printer

The site controller shall be web enabled to allow independent real-time control, monitoring and reporting via the web using user ID with password and SSL protected link

(https://).

The site controller shall communicate with a central high performance server or dedicated host PC computer for the purpose of centralized control and monitoring of multiple sites.

Refueling shall take place regardless of the connectivity to the host computer. Refueling limits and restrictions shall be 'pushed' from the host computer to all fuel site controllers enabling off-line refueling with limits and restrictions also when communication is not available. A time limit should be provided for off-line activity to block possible 'break' of the limits by refueling in several sites through the off-line mode.

The site controller shall authenticate the data retrieved from the vehicle and check it against the existing set of limits and restrictions.

If all conditions are met, the site controller shall authorize immediate refueling.

The site controller shall control up to 4 mechanical hoses in one terminal. Hose extension controls shall be available in modules of 4 hoses. The site controller must be capable of controlling up to 4 hoses at a single site and through one single terminal, either mechanical or electronic registration.

The site controller shall store up to 10,000 transactions and 10,000 vehicles/devices with the ability to set limitations and restrictions.

The site controller shall be available for refueling 24/7.

Site controller shall work in online and off-line modes, in case of communication failures with the FHO software. When communication is established again, the system shall synchronize data automatically.

The site controller shall have an embedded hardware platform designed to survive the harsh fueling depot environment.

The site controller shall use a solid state Flash disk and RTC (Real Time Clock) with back up, along with surge suppressors for transient and noise immunity. The system shall include a power fail recovery mechanism. The CPU shall have no edge connectors and no hard disk (no moving parts).

The site controller shall have a high level data protection through two separate isolated TCP/IP Ethernet network ports. One port shall be used for site peripherals interface and the second port for external communication to the network (Remote access, host computer and 3rd party systems) protected by SSL security. The outside link could use a local modem connection through PPP protocol for TCP/IP communication, cellular, or dial-in type modems.

The site controller shall have the following additional capabilities:

- Secured remote capabilities for monitoring, management and maintenance activities
- Flexible with all types of communication including TCP/IP, wireless Ethernet bridge modems, satellite communications and dial-up analog modem
- Web enabled reporting and alarms for Tank Level Sensing (TLS) systems (Veeder Root TLS-350 UST Monitoring System protocol)
- Fuel management software for reconciliation reports
- Accessible via Internet browser to control and monitor the system. No requirement to install dedicated software
- Real time web-based dynamic graphical monitoring and control of dispensers
- Remotely open a pump and limit the quantity to a specific transaction.
- Able to update fuel price at a specific time
- Remote maintenance, remote troubleshoot and remote software upgrades of the various components of the system

The following physical, electrical and environmental specifications shall be provided:

- Supply voltage: 100 – 240 VAC
- Power consumption: 2A max
- Operating temperature: -22 F to +158 F (-30 C to +70 C)

Tank Level Sensing (TLS) Interface

The site controller shall support Veeder Root TLS-350 UST Monitoring System protocols. The TLS will be connected to the site controller via TCP/IP communication port or the RS-232 port to allow fuel management capabilities.

The site controller shall have the possibility to define the following communication parameters; Baud rate, Parity, Data bit, Stop bit, Flow control.

The site controller shall collect the following data from TLS equipment:

- 12:00 midnight shift inventory volume for tanks
- Tank inventory level; CSLD (Leak Detection) status – Pass/Fail
- Fuel delivery information; Water Level
- Water levels, Temperature, Alarms (Leak, Overfill, Sump, Sensor, etc.)
- Alarms shall flash continuously on the main screen and could be sent via email.

The Pedestal

The pedestal shall fit in the existing space and be powder coated metal designed for easy installation and service. The paint application for the entire pedestal terminal shall consist of a positive/negative charged ionization process for superior bonding. All materials shall be tested to sustain Oil, Fuel, Sun, Water and Salt.

The pedestal shall allow front door access for maintenance and wiring and shall enable flexible installation on the fueling island.

The pedestal display panel shall consist of:

- Top illumination utilizing an array of high intensity blue LED's
- 4 lines, 20 characters or optional graphic LCD
- LCD operates well in all lightening conditions
- 16 functional keys that shall be rugged and made of metal for higher reliability and longer life (flexible plastic key caps will not be acceptable)
- the key's sensors shall use piezoelectric technology for highest reliability
- Magnetic Card Reader and HID Reader (please specify)

Site Controller Software

The system shall be based on web server technology and enable easy secured (SSL) remote access through the network using a standard PC with an internet browser, without the need for any other software application.

The browser interface shall allow control and monitoring, maintenance activities, report generation with advanced filters and templates, graphical monitoring of fuel levels, on-line pump monitoring and more.

The system shall provide flexibility when searching for data within the system without the need for prior knowledge in SQL or other query languages.

The site controller shall support mechanical and electronic dispensers. All links shall be protected and isolated for maximum reliability.

The system shall store transaction data as well as driver and vehicle records into its database using FLASH disk. Other critical data such as fueling limits and restrictions shall also be stored in the database. The system shall use the following authorization devices:

- Mag Cards (track 2 and 3)
- Keyboard entry authorization
- Optional HID reader

Authorization schemes shall include the following scenarios

- Single device authorization
- Two stage authorization (based on two authorization devices)
- Add-on keyboard entries: PIN code, vehicle ID, odometer reading, engine hours

The system shall have the option to collect data from driver before refueling, such as PIN, Odometer, vehicle ID, etc.

The system shall provide odometer reasonability checks. The site controller shall allow the possibility to work offline with all limits and restrictions. The site controller and the Fleet Head Office software shall allow heritage Gasboy Series 1000 Magnetic cards and Gasboy Fleetkey devices from existing systems to be read and fully integrated into the database of the site controller and FHO software. The 1000 series card and Fleetkey device data -for example, card or key format, fuel limits, fuel authorizations, System ID, PIN key, etc.- shall be read at first use and placed into a Negative list. When the site controller automatically uploads the transaction to the database, a new Positive device list table will be created in the site controller's and FHO's database. Once the device list is created then all future refueling will be fully automatic based upon the Positive list of accepted devices.

System shall have the option to approve or decline refueling according to pre-defined limits and restrictions for the specific unit. Such limitations shall include:

- Limit of daily, weekly and monthly refueling volume or sales amount
- Enable or disable vehicle refueling on specific days (weekdays for example) and/or specific time slots within a day (night time for example)
- Limit the maximum refueling sessions for a specific vehicle per day, week or month
- Block specific stations for a specific vehicle (if vehicle is restricted for operation in a specific zone)
 - Restriction of specific fuel types for refueling of a specific vehicle Host Software

The software shall support multiple fuel site controllers and allow data consolidation, support multiple fleets and multiple departments, synchronize data with all sites. The software shall be installed on the host computer running Windows operating system and SQL database.

The system shall be a centralized web server communicating with all sites to provide centralized data base and on-line network access for fleet managers, key personnel and remote maintenance entities.

The software shall communicate with all sites to provide 24/7 on-line access through the network. The software shall create and control several fleets and departments and support different privilege levels for limited access for different users (for example, a specific Fleet manager shall only be able to manage only his fleet vehicles).

The software shall provide advanced on-line services for multiple sites and multiple fleets in a region.

The host software web interface shall use SSL security.

The software shall provide secure log-in through the Web for each fleet manager, for monitoring and control and report generation including exception reports.

The host software application can interface to other applications via Web Services, import and export of files to FTP and ODBC standard.

The software shall allow Exporting data to different file formats (using a dropdown menu) such as CSV, TXT and XML.

The user interface for all software components shall be a web browser.

Limits and Restrictions

Host software shall allow limits and restrictions to be configured either by an authorized user or imported from a different external system (using the import/export).

The rules shall be transferred to every site controller to enable off-line activity in case of communication failure; hence a fuel site will be able to refuel a vehicle with in its set of limits and restrictions, when communication is down. The limits shall be “pushed” into the site controller at a predefined time or for a predefined period of time. Site controllers can also use the limits in an off-line mode (in case of communication failure).

There shall be a graceful period of time (parametric) for this off-line mode since the vehicle could refuel also in other sites (above its limits) while the sites are disconnected from the host computer.

Customizable vehicle and driver limits and restrictions shall include:

- Limit of daily, weekly and monthly refueling volume in gallons as well as in currency
- Enable or disable vehicle refueling on specific days (weekdays for example) and / or specific time slots within a day (night time for example)
- Limit the maximum refueling sessions for a specific vehicle per transaction, per day, week or month
 - Limit the maximum refueling sessions for a specific vehicle per transaction, per day, week or month
 - Restriction of specific fuel types for refueling of a specific vehicle

Fuel Management System Software

The host computer shall collect the transactions and TLS information from all fuel sites for centralized fuel management activities including required deliveries, forecasting, reconciliation and more for optimal usage of fuel.

The system shall provide the following capabilities:

- Reports regarding fuel consumption with filters of sites, dates, volumes and more
- Customized templates for specific reports
- History of fuel consumption from every product with graphical representation
- Forecasting consumption for every product based on the consumption history with graphical representation

- Reconciliation
- Manual entry or editing of fueling transactions
- Provide unified view of ALL stations with regards to fuel level status
- Provide consolidated view of each specific fuel tank, per station
- Provide a centralized system for maintenance reporting and reporting of different system alarms, per station
- Provide an interface for managing of manual stations (without Fuel Controllers).
- Tanks status screen from TLS system per site with graphical representation of the tanks Alarms (High/Low tanks level, Leak detection, No communication, Etc.)
- Export capabilities to other systems (ERP)

Reporting System

Consolidate data from multiple stations and generate reports, including exception reports, reconciliation reports, trends, forecast, consumption, tank capacity and more.

Custom Reports

The software shall provide a highly flexible custom reporting utility. Data elements can be selected and put in any order by the user to create their own custom report. This report shall have the ability to be saved as a template for later use.

Must have advanced customized reporting capabilities with filters and templates (Web based). The custom reports feature shall enable report generation of transactions performed in the fuel station in various profiles.

The following field names shall be used to generate custom reports tables:

Station, Date, Time, Fleet, Transaction Type, Vehicle #, Product, Quantity, Total Sale, Receipt #, Fleet Code, Pay Mode, Transaction ID, Authorized By, Department, PPV, Odometer, Engine Hour, Pump, Tank, Nozzle, Density, Temperature, Vehicle Type, Ref/Slip #, Driver name, Department code, Card number, Device name.

The custom report shall allow summary by the following fields (Break by):

Date, Plate, Pump, Product, Pay Mode, Station name, Fleet code, Authorized by, driver name, Dept. code, or a selection of any of the above.

The custom reports shall allow sorting by the following fields (Sort by):

Date & Time (Ascending/Descending), Pump, Transaction ID, Product, Amount, (Ascending/Descending), Quantity, Plate, Pay mode, Station name, fleet code, Receipt JD, Driver name, Dept. code or a selection of any of the above fields.

The above powerful capabilities shall allow flexible reporting such as:

Summary Report – summarizing all transactions of a specific fleet of vehicles

Vehicle Report – offering the Fleet Manager a detailed transaction report of vehicles pertaining to the fleet, in three cross sections:

- **Transactions** - providing information regarding each transaction, including the vehicles license plate number, odometer reading, engine hours, fuel type, fuel volume and the transaction ID
- **Consumption** - listing information regarding each vehicle (device) providing a summation of data (volume consumption, fuel cost, other costs) for each vehicle in a specified time frame

Exception Reports - The software shall provide Exception Reports for the Fleet Manager. It must provide the ability to spot any abnormal incidents that occurred within his fleet. The following exception reports are required for each fleet:

- **Volume Exception Report** – shall list noted exceptions relating to the fuel volume consumed in the transactions compared with the related vehicle's fuel tank volume.
- **Mileage Exception Report** – shall list the exceptions related to the elapsed distance of the vehicles, according to odometer readings.
- **Consumption Exception Report** – shall list the exceptions related to the fuel consumption of the vehicles, according to odometer readings and the specified fuel consumption ratio of the vehicle.
- **Not Used Exception Report** – shall list the vehicles which did not carry out any transaction in a specified time frame. The report should include the license plate number, the odometer reading and the date and time of the last transaction performed by the vehicle.

Fuel Management System Reports (Built-in)

Sales Reports:

- Sales by Tanks Report
- Local Account Transactions
- Pump-wise Delivery Report
- Product-wise Dispenser Delivery
- Fuel Sales Trends Graph
- Fuel Volume Forecast Report

Stock Data Reports:

- Tanks by Sites
- Tanks Trends Graph
- Total Wet Stock Report

Reconciliation Report:

- Shift Report
- Environmental Report
- Tank Reconciliation Trends

Maintenance Reports:

- Exception Log Reports
- Alarm Duration Reports

Back-Up

The system shall provide several back-up mechanisms for maximal data protection as follows:

- The database is transmitted periodically to a remote server
- The backup can be for the entire database or differential

Built-in data base back-up mechanism (Customer FTP). All transactions are exported to a Customer FTP site through an Export Module. RAID mechanism at the host computer.

Warranty

- 12 months system Parts and Labor warranty