REQUEST FOR QUOTATION N. 63900029

FOR A

GPS VEHICLE TRACKING SYSTEM

FOR

THE STATE OF WEST VIRGINIA

FEBRUARY 18TH, 2009

INTERFLEET INC.
8 SOUTH TYSON AVENUE
FLORAL PARK, NEW YORK
11001 – 2017

InterFleet
REAL-TIME GPS/AVL

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REAL-TIME GPS/AVL

Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, West Virginia 25305-0130

February 18th, 2009

Dear Sir or Madam,

InterFleet Inc. is pleased to submit a response to the State of West Virginia's Request for Quotation for a GPS Vehicle Tracking System. Our flagship product, InterFleet®, is an advanced and customizable real-time internet-based GPS/AVL fleet management solution with a clear focus on public sector applications. Our field proven solutions can be applied today and evolve with your fleet management operational requirements, whether it's additional units or expanding towards other departments or operations.

Launched commercially in 1998, InterFleet® was the first internet-based GPS/AVL application in North America to provide a live screen displaying live fleet activity. While other AVL solutions were reporting at 5 minute intervals or greater, InterFleet® was cost-effectively providing 6 to 10 reports per vehicle per minute. The success of this philosophy within the public sector market for GPS/AVL is proven through an extensive list of state, provincial and local government clients we service. Some of the key features of InterFleet® include:

- Web based real-time map display for all vehicles in service
- Flexibility to utilize a wide variety of wireless networks
- Permanent historical record of fleet activity
- A range of machine to machine integrations (spreader controllers, driver ID, and more)
- An extensive array of sensor integrations (PTO's, remote panic buttons, etc.)
- XML feeds to legacy applications
- Use of client map data where available
- Wide range of off-the-shelf and custom management reports

InterFleet® is a solution that is largely "off-the-shelf", modular, and that can be implemented and deployed quickly and cost effectively. The end result is a solution that is flexible and easily and readily customizable. Our demonstrated history of evolution with our clients' requirements and changing technology provides you with assurance that the solution proposed can address issues faced by the State of West Virginia not only today but in the future.

We look forward to your reply.

Yours truly,

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Company Profile

Corporate History

InterFleet Inc.'s headquarters is located in New York and is a U.S. subsidiary of Grey Island Systems International Inc. (GIS). Headquartered in Toronto, Grey Island Systems International is a publicly traded company (Toronto Stock Exchange: GIS) focused on Public Sector Fleet Management GPS/AVL Solutions. Our flagship product, InterFleet®, was launched commercially in 1998 and is North America's first and original Real-Time Internet-Based GPS/AVL provider.

Public sector fleets, from EMS to Public Works to Transit, have been the primary focus for InterFleet®, allowing us to capture a dominant share of the market for GPS/AVL related solutions for government fleet operations throughout the U.S. and Canada. The company has developed a number of targeted applications that go far beyond simple web-based tracking, designing personalized solutions for specific client needs. In addition to specialized applications targeted to public works, waste management, and transit agencies, InterFleet Inc. also pioneered Public Information Web Sites displaying live GPS/AVL data with the launch of www.whereismybus.com in 1999 and www.whereismysnowplow.com in 2001.

The acquisition of California-based NextBus® Information Systems in 2005 compliments InterFleet Inc.'s philosophy of real-time web-delivery for all kinds of public sector markets and our approach to the evolution of fleet management. With over 40 implementations across the U.S., the NextBus® Real-Time Passenger Information System is designed to work with buses, trains, and other vehicles that operate on a fixed route, allowing it to deliver accurate arrival information to its passengers. The NextBus® approach to prediction is unique in that it is based on actual vehicle locations and a proprietary mathematical model that takes into account historical travel times under a variety of conditions. In terms of influencing ridership, real-time passenger information has the greatest potential for improving customer service and providing more control to fleet managers over transit operations.

Projects in Over 350 Local and State Government Clients

- NYC Department of Sanitation (Plows & Collections)
- NYC Mayor's Office
- NYC Fire Department
- NYC Parks Department
- Washington Department of Transportation
- Illinois Tollway
- City of Elgin, IL
- City of Indianapolis, IN
- City of Columbus, OH
- Middletown, OH
- Franklin County, OH
- Hennepin County, MN
- City of Huntington, NY
- Livingston County, MI
- City of Alameda, CA
- Downtown Alliance (NYC)
- City of New Haven, CT
- City of Edmond, OK
- City of Huntington, NY
- Long Island Rail Road
- Greater Toronto Airports Authority
- La Guardia and JFK Airports Authority
- City of Pittsfield, MA
- North Hempstead, NY
- Ontario Ministry of Transportation
- City of Peoria, IL
- City of Tallahassee, FL
- Key West Energy
- Yonkers, NY
- City of Toronto
- Nova Scotia Highway Department

References and Current Implementations

City of Indianapolis/Marion County Mr. John Workman Administrator DPW Maintenance Services Division jworkman@indygov.org Tel: (317) 327 – 2372 *Scope: 200+ Snow Operation, Solid Waste, Traffic and Water Vehicles*	**Ontario Ministry of Transportation** Mr. Shaf Khan Head, Fleet Operations Maintenance Office shaf.khan@mto.gov.on.ca Tel: (905) 704 – 2968 *Scope: 150+ Highway Operations Vehicles*
Group 4 Securicor Mr. Jack Sheen National Fleet Manager jack.sheen@ca.g4s.com T: (416) 645 – 5405 *Scope: 280+ Armoured Trucks*	**Long Island Railroad** Mr. John Cosgriff Chief of Fleet Operations jkcosgr@lirr.org Tel: (718) 558 – 3390 *Scope: 600+ Operations Vehicles*
Fire Department New York City (FDNY) Mr. Dave Fields Radio Shop Supervisor Tel: (718) 505 – 3114 *Scope: 623 Fire Trucks*	**City of Tallahassee (FL)** Mr. David Nichols Fleet Manager nicholda@talgov.com Tel: (850) 891 – 5569 *Scope: 246 Vehicles – Public Works, Utilities*
Port Authority of New York Mr. James Dimico Airport Facilities Division Tel: (718) 533 – 3585 *Scope: 150 Operations Vehicles-Pay loaders, Pickups, Melters, Skid Steers*	**City of Huntington (NY)** Mr. Keith Wingate Budget Analyst/Data Processing Manager Tel: (631) 351 – 3111 *Scope: 175 Passenger Cars, Pick-ups, Water Trucks, Dump Trucks, Boats, Sweepers, Spreaders and Garbage Packers*

Project Requirements

AVL Application Requirements

Requirement	Comply
Web and Client based application accessible through the Internet	
Architected from the beginning to be flexible and adaptable, InterFleet®'s core is a highly customizable Internet-based application that provides real-time and historical vehicle location data as well as dispatch map display for all the vehicles in service.	Comply
Quarterly map updates	
InterFleet Inc. offers North American map data as part of the InterFleet® solution. In addition, InterFleet Inc. can utilize the State of West Virginia's map data, address layers and route data if available in shapefile format. Map data provided is added to map servers and this data is layered with the vehicle GPS positions to show accurate, mapable, vehicle location. This functionality also welcomes the use of orthophotos for enhanced mapping detail. Unique to the market, InterFleet® also has the capability of referencing the State of West Virginia's ArcIMS map servers for display of real-time map data. As soon as data is updated in the geodatabase, it is automatically updated on the AVL system. In this way, the most up to date map data will always be displayed in real time on the user interface. The State of West Virginia would simply run a map service through ArcIMS that would be referenced via html.	Comply
Links to aerial imagery for vehicle events	
Links to aerial imagery can be provided through Microsoft Virtual Earth mapping interface. Alternatively, if the State has aerial imagery as part of their GIS data, this may also be used as part of the InterFleet® graphical user interface.	Comply
Ability to display current weather conditions including Doppler Radar	
If the State of West Virginia requires specific road weather information system URLs or other weather service links; these may be referenced into the InterFleet® application to allow the user to open the sites directly without leaving the application window. The InterFleet® system does not currently integrate with a meteorological data supplier to display current weather conditions such as radar as a map layer within the application. The foundation of InterFleet's mapping system is built on a platform allowing for web map services (WMS) layers to merged with base mapping. This would allow for external data mapping, such as weather data, to be potentially displayed within the InterFleet® application if they are being made available as WMS data.	Partial-Comply
Two-way messaging	
The proposed InterFleet® solution can support two-way messaging through the use of a Mobile Data Terminal. This is an optional hardware component.	Comply
Thousands of locations entered, organized and mapped	
The proposed solution offers a landmarking tool, supporting the requirement of thousands of locations entered, organized and mapped. Please see Figure 6 included in the InterFleet® Overview.	Comply

Alerts through email, pagers, and text-phones	
The proposed InterFleet® solution can automate reports and alerts have them sent via email to pagers and text-phones.	Comply
Ability to utilize multiple cell carriers (Verizon, AT&T & Sprint)	
The InterFleet® application was developed from the beginning to be flexible and to interface to a wide variety of wireless networks and not be tied to a specific wireless technology or vendor and can utilize the CDMA, EVDO, EDGE and HSDPA networks. InterFleet® has proven integrations with satellite based communications system and is currently testing various emerging Wi-Max applications in New York City.	Comply
Minimum of one minute breadcrumb trail for asset movement	
The reporting frequency can be modified in order to optimize the data collected while continuing to manage budgetary requirements. Reporting could be as often as every 3 seconds, 5 seconds, 10 seconds or configured for one (1), two (2), five (5), and fifteen (15) minute updates, the solution can be customized for any combination of time and distance. Reporting frequencies can be configured per vehicle or fleet type.	Comply
Route Playback	
The Browse feature of the Ad-hoc Query Tool, allows the user to replay activities of a single vehicle or specified group of vehicles for a user-determined time frame. The system playback feature will also preserve all pan and zoom capabilities of real-time operations.	Comply
On Demand asset polling (no extra charges for pinging)	
The proposed solution offers a polling tool to provide on demand asset polling.	Comply
Geo-fence area for Home Sites	
InterFleet® allows users to enter customer specific landmarks into the system such as waste transfer stations, dispatch facilities or patrol yards (Figure 6). The system can be further customized to set geofences and landmarks to generate alerts or reports when a vehicle enters or leaves a specific area. The alerts can be real-time or generated as part of an exception report. The State of West Virginia zones and boundaries would be ideal locations for geofencing and landmarking.	Comply
Ability to download asset positions and events into Excel	
The InterFleet Status Report provides the ability to download asset positions and into Excel. The InterFleet Ad-Hoc Query tool allows the State of West Virginia to download historical events into Excel.	Comply
Job site import – assign jobsite by vehicle / Group & Fleet	
Job sites may be defined through user defined geofences, or if the job sites exist as GIS data, they may be provided to InterFleet Inc. to incorporate as part of the map data layers within the application. Once these geofences and/or map data is incorporated within the system, they can be utilized through standard InterFleet reports as well as exception reports to show the location of any vehicles through the geofence or other map data.	Comply
Ability to search for assets based on proximity to (Other assets, Job Sites, Home Sites, or Addresses)	
Users have the ability to type in an address and have the map zoom in and denote the address on the screen. The closest vehicle tool will list the closest 10 vehicles and distance to a landmark or address (Figure 5).	Comply

Ability to display and report on Asset Congregation	
The Congregation report allows the user to review Asset Congregation. Please reference Figure 20 for an example.	Comply
Data Logging, supports message and event storage for up to one week while out of network coverage	
The proposed hardware can include an SD card with 2 GB of storage option (redundant on-board data collection – has capability of storing 1 second data for a period of 30 days)	Comply
In-vehicle hardware most store/forward positions and events data when outside of wireless coverage	
The current InterFleet® on-board GPS/AVL unit can be programmed to automatically detect when a cellular signal is lost. Should this occur the GPS/AVL unit will begin store data points until a connection is re-established.	Comply
Real-time speeding alerts	
The Exceptions Monitoring console provides real-time speed alerts on the InterFleet® user interface. These alerts can also be forwarded to a text-phone and/or pager.	Comply
Real-time off hour usage alerts	
The Exceptions Monitoring console provides real-time off-hours usage alerts on the user interface. These alerts can also be forwarded to a text-phone and/or pager.	Comply
Ability to support driver identification as well as vehicle identification	
InterFleet Inc. supports both driver identification as well as vehicle identification. Each vehicle will have a unique identifier that includes the vehicle's identifying number based on agency nomenclature. Vehicle icons can be selected by the State of West Virginia based on vehicle type from a wide selection of .gif images provided by InterFleet® for consideration. Driver ID systems can include an ID card or key fob and reader. Each vehicle can have a reader device installed on the dash and each driver will have a unique identification card or fob. Driver Information shall automatically be transmitted with live vehicle updates. This feature extends the benefit of driver based reports.	Comply
All data must be stored at the vendor's data center for a period of 12 months	
The InterFleet® data centre operates continuously 24 hours a day, 7 days a week, supporting the data collection of numerous vehicle based and user-defined requirements. All data will be stored at the InterFleet® data centre indefinitely. The data centre includes natural gas generator backup and 3 diverse paths to the internet and redundant hard drives. The State of West Virginia is also extended the option of storing data on their site in addition to the InterFleet® data centre. This can be done through quarterly issues of data discs, or via XML data feed.	Comply
Vendor must utilize at least one redundant data center for back-up process and data security	
Within the InterFleet data center exists redundant, independent communication infrastructure which provides redundancy on database population; coupled with back-up procedures on database failover as well as power supply failover in the event of power outage. InterFleet Inc. may extend specific redundancy requirements through data storage options through	Comply

web services which can co-locate data at a InterFleet facility or client facility.	
Option to download data in MS SQL Database	
At the database level, the InterFleet® system includes an encrypted .XML interface from which the agency can write an application to query the database for real-time data. The format of this file will be pre-defined, and verified prior to activation of the data service. In this way, users can access all pertinent vehicle data and have it stored on a separate database should they need to access the information in future. Example of interfaces include: Map Tools, Crystal Reports, Computer Aided Dispatch Systems, Work Order Management systems, etc.	Comply
Driver initiated emergency button, must trigger e-mail alerts to multiple recipients	
To improve the safety of fleet operators, InterFleet® offers a number of emergency alarm capabilities to fit the needs of the State of West Virginia, from a simple panic button on the dash, to a key on an MDT, to a key fob alarm. The key fob emergency alarm allows vehicle operators to send an emergency alarm to dispatch from a remote location through the vehicle's system from up to 2,000 feet from the vehicle. By simply depressing the emergency button on the key fob a message through the MDU which in turn alerts dispatch. From there the proper authorities can be notified. This is currently being implemented on Parking Meter Cash Vehicles, Armored Car and Highway helper fleets as a security feature. Alarms can also be generated automatically from the vehicle. In some armored car applications the truck itself can generate alarms based on certain parameters such as the vehicle moving with the door open, without the lightbar on or without the driver ID entered. Alarms can be prioritized and different actions taken by the system based on the State of West Virginia's requirements. For example, Priority 1 - driver alarms based on key fob activation – authorities are automatically alerted vs. Priority 2 vehicle based alarm dispatchers are notified at the command center for follow-up.	Comply

Fleet Productivity Requirements

Requirement	Comply
Run ranking report for safety, measuring acceleration exerted on the vehicle during various maneuvers such as turns, starts, stops and speeds	
InterFleet Inc. offers speed exception reporting. Anytime a vehicle travels at a speed greater than the speed threshold identified by the State of West Virginia, this is logged into a report for historical reference.	Partial-Comply
Report driver safety scores for each individual driver as a composite score based on factors including turns, speeds, stops and starts.	
With the addition of Driver Identification hardware, Driver based reporting can be provided, including Speed Exception reporting.	Partial-Comply
Stop reports with speed and duration thresholds	
The InterFleet® system provides a Stop Report denoting a vehicle's stops throughout the day. These stops will be georeferenced to an address range (Figure 12). A stop in a geofenced area is highlighted with a special icon as below for stop number two. The stop report provides idle time information as well for each stop and a cumulative total for the user-defined time-frame.	Comply

Geographic representation of tabular data is also provided when selecting the Map It feature at the time of query.	
Idle time reporting	
The InterFleet® solution offers an Idling Exception report, providing a detailed history of those times a vehicle(s) idled for a period in excess of threshold defined by the State of West Virginia. i.e. Greater than 5 minutes.	Comply
Capture duration time to detect entry and exit of sites	
Users will have the ability to query the system for exceptions. These exceptions can be based on geofences of the State of West Virginia boundaries, stop length, and speed. Different types of vehicles can have different exception conditions. These exceptions will be georeferenced to an address range. All exception reports can be sent automatically to management staff via email or text message.	Comply
Track mileage on engine and run time hours	
The proposed InterFleet® solution offers a monthly Activity Summary report that provides: • Time Frame Queried • Vehicle Identification Number • Total Travel Time (hours) • Distance Traveled (miles) • Total Stop Time • Number of Stops	Comply
All inclusive activity reporting	
As a quick view report, InterFleet® offers an Activity Summary Report (Figure 11) that displays the vehicle activity for a specified time period (miles traveled, stop, etc.). The vehicle ID is hyperlinked to a vehicle stop report.	Comply
Run reports for multiple drivers simultaneously	
The InterFleet® solution provides the capability to run reports on a driver or group of drivers simultaneously.	Comply
Speeding reports containing speeds and duration thresholds	
The InterFleet® Speed Exception report provides an overview of those time a vehicle(s) travelled at a speed in excess of the threshold identified by the State of West Virginia. i.e. greater than 65 MPH.	Comply
Visitation reports	
The proposed solution can provide Visitation reports, detailing those times a vehicle or group of vehicles entered a State of West Virginia defined geo-fence (landmark).	Comply
Event reporting including ignition on, ignition off, enter geo-site, exit geo-site, start moving, stop moving and speeding information	
Users will have the ability to query the system for exceptions. These exceptions can be based on geofences of the State of West Virginia boundaries, stop length, and speed. Different types of vehicles can have different exception conditions. These exceptions will be georeferenced to an address range. All exception reports can be sent automatically to management staff via email or text message.	Comply
Non-work hour asset activity reporting	
The After Hours report provides an overview of Non-work hour asset activity.	Comply
User defined upcoming vehicle maintenance reporting	
Vehicle maintenance reporting may be accomplished through mileage or	Comply

operational hours summed in the Activity Summary reports based on user defined date queries; or through exception reporting which allows for user defined thresholds implemented by InterFleet® administrators.	
Drivers hours and mileage reporting	
The proposed InterFleet® solution offers Driver report that provides: • Time Frame Queried • Vehicle Identification Number • Total Travel Time (hours) • Distance Traveled (miles) • Total Stop Time • Number of Stops	Comply
Work/home Sites by site and by vehicle	
Work and home sites which are identified as geofences entered by users through InterFleet's Landmark tool may output reports which will provide data by vehicle (through the InterFleet Stops report) and will indicate when vehicles are within work/home sites, and for how long. There are also exception reports which are geofence driven which through user defined thresholds, will indicate which vehicles have travelled or stopped within a work/home site.	Comply

Integration

Requirement	Comply
SQL Data feed from Vendor's Data Center allowing for customized reporting including trend analysis	
At the database level, the InterFleet® system includes an encrypted .XML interface from which the agency can write an application to query the database for real-time data. The format of this file will be pre-defined, and verified prior to activation of the data service. In this way, users can access all pertinent vehicle data and have it stored on a separate database should they need to access the information in future. Example of interfaces include: Map Tools, Crystal Reports, Computer Aided Dispatch Systems, Work Order Management systems, etc.	Comply
MSMQ messaging capabilities	
The messaging system product utilizes the MSMQ messaging capabilities on the back-end against a customized interface on the front end within InterFleet referred to as the messaging console. The messaging system InterFleet makes available to clients currently incorporates a mobile data terminal (MDT) or Garmin navigational devices (select models) in the vehicle which communicates to and from the InterFleet software's messaging console. The application allows for each vehicle to communicate to the messaging console; and for users to select one or more vehicles to transmit messages to in the fleet.	Comply

Hardware Components

Requirement	Comply
GENERAL SPECIFICATIONS for In Vehicle Display (IVD) and	Comply

On Board Black Box (OBBB) Input Voltage. 9.0-32.0 VDC GPRS. TNC (receptacle) 50 Ω	

Current Consumption

Requirement		Comply
Transmitting with IVD	340 mA (1.6 A peak) at 12 VDC	Comply
Transmitting without IVD	270 mA (1.5 A peak) at 12 VDC	Comply
Not transmitting with IVD	160 mA at 12 VDC	Comply
Not transmitting without IVD	90 mA at 12 VDC	Comply
Not transmitting sleep mode	<10 mA at 12VDC	Comply

Inputs & Outputs

Requirement		Comply
Discreet Inputs	(4) switch closures	Comply
Ignition Sense Off.	<0.8 V	Comply
Ignition Sensor On.	>2.4 V	Comply
Pulse Counting Inputs.	(3) minimum pulse width: 500µs	Comply
Discreet Outputs.	(3) 200 mA low-side drivers	Comply
Sensor Power Output.	(1) 150 mA at 11.8 V± 1.0 V	Comply
Message Formats	MSMQ	Comply
Status LEDs.	GPS (green), GPRS (amber)	Comply

Physical Specifications

Requirement	Comply
Assembly. Top: Injection molded plastic with integrated shield	Comply
Base: Aluminum	Comply
Size. 228 mm X 121 mm x 36 mm (W x D x H) (8.97" W x 4.76" D x 1.42" H)	Comply
Weight. 485 g (1 lb, 1.1 oz)	Comply

Connectors

Requirement	Comply
IVD Port. DB-9 (receptacle)	Comply
Serial Port. EIA-232 RJ-45 (receptacle)	Comply
Power & Discreet I/O Molex Micro-Fit 3.0 16-pin dual low rocking receptacle SIM Carrier. Antennas GPS. SMA (receptacle) 50 Ω	Comply
GPRS Quad Band. TNC (receptacle) 50 Ω	Comply

GPS Specifications

Requirement	Comply
Receiver. L1 frequency, C/A code (SPS)	Comply
8-channel continuous tracking receiver	Comply
Update Rate. Once per second maximum	Comply
Accuracy	
Position. < 10 meters (50% CEP)	Comply
Velocity. < 0.5 meter/second	Comply
First Acquisition	
Cold start <180 seconds (90%)	Comply
Warm start <45 seconds (90%)	Comply
Reacquisition after signal loss. <2 seconds (90%)	Comply
Datum. WGS-84	Comply

GPRS Specifications

Requirement	Comply
Global. Internal GSM/GPRS Module, Multislot Class 12	Comply
Quad Band GSM 850/900/1800/1900 MHz	Comply
SIM. 3V	Comply
Regulatory Approvals. FCC, PTCRB	Comply

Documentation of Proposed Methodology

InterFleet® System Features

Automatic Vehicle Location

- GPS, GPRS, CDMA 1x, (based on the State of West Virginia's reference)
- Optional Dual Modem Redundancy
- Integration with On-Board Sensors and On-Board Systems including Driver Identification Hardware and Mobile Data Terminal (optional)

Live Data

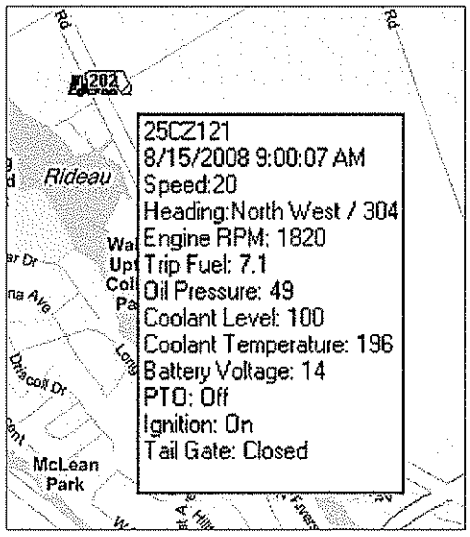
- Web based Map Displays with local streets map and real-time vehicle location with respect to streets
- Latitude/Longitude
- Geofencing
- Information pulled from on-board systems and sensors, i.e.: swipe cards, PTOs
- Real-time communications between drivers, supervisors and the State of West Virginia dispatch via MDT (optional)
- Playback feature to review historical activity

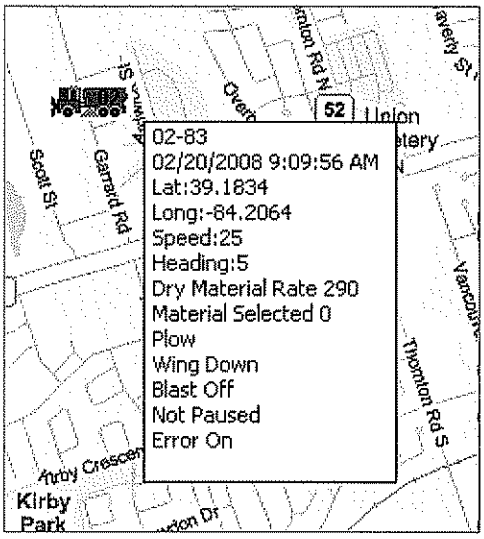
Extensive Management Reports

- Activity Summary Reports, Stop Reports, Status Reports
- Ad-Hoc Query Tool
- Drill down capability for more detailed information
- Special printable format and Excel spreadsheet format
- AVL data stored on-line for a minimum of 1 year

Public Works Reporting Tools and Functionality

- Start, finish and idle time
- Sweeper and PTO activation reports
- Total distance patrolled
- Route completion reporting



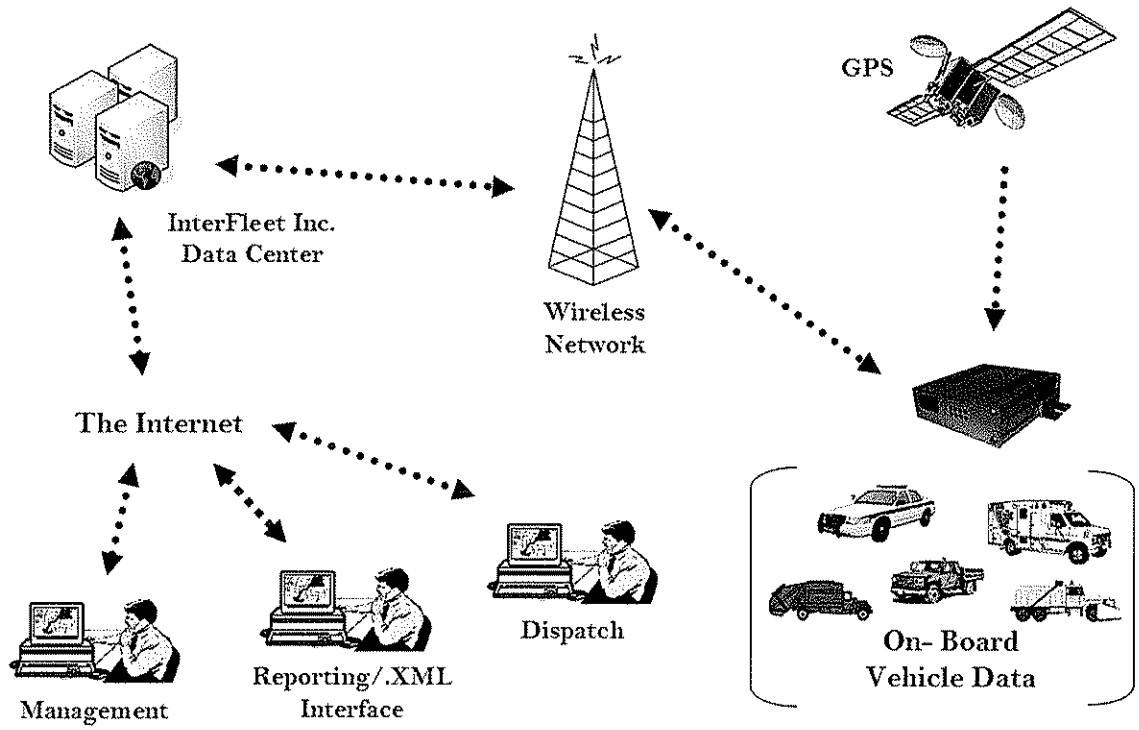


InterFleet® System Overview

Architected from the beginning to be flexible and adaptable, InterFleet's core is a highly customizable Internet-based application that provides real-time and historical vehicle location data as well as dispatch map display for all the vehicles in service. In InterFleet's methodology, a vehicle automatically reports or sends a data packet to the wireless data network. These data packets will contain the vehicle ID, GPS fixes (e.g. speed, direction and location) and vehicle telematic data such as selected input data and/or sensor readings (hydraulic controllers, spreader controller information, broom-up/down, lights and sirens etc.)

Once in the network, the data packet is immediately routed to the InterFleet® database. Whether a user is logged in or not, this database continues to be populated with data sent from reporting vehicles. When user's login, their browsers are continually updated with vehicle movements to the database and are refreshed, users can watch live fleet activity.

One of InterFleet's successes has been optimizing the amount of data sent in each packet. Packet sizes typically range from 70 to 150 bytes depending on the application. With this knowledge, clients can tailor the reporting frequency of each vehicle to meet a particular data plan that corresponds to the business issue at hand.



InterFleet® is much more than AVL. As an example, it can monitor vehicle conditions in real-time in addition to automatically logging the data for operations reports. Similar management reports created from this data add a new level of understanding of how the fleet is used and how it responds to changes in operating procedures. InterFleet® can support windows notebooks and handheld computers for all types of mobile data communications.

Live Data & Tools

Map and Vehicle Movement Updates

Unique to InterFleet®, the browser-based application separates the map layer and vehicle layer. This patented technology allows vehicle data to be updated without the need to refresh the entire screen.

The InterFleet® system displays all standard GPS data when viewing both live and historical data. This information includes: date, time, direction of travel, speed of travel, as well as any telematic information being retrieved.

Mapping & Route Display

Map functions include:

- Zoom in and Zoom out
- Centre
- Drag Zoom
- Display of Vehicles located in 200 mile radius
- Display of Vehicle Positions (all or subgroups)
- Display of Landmarks/zones

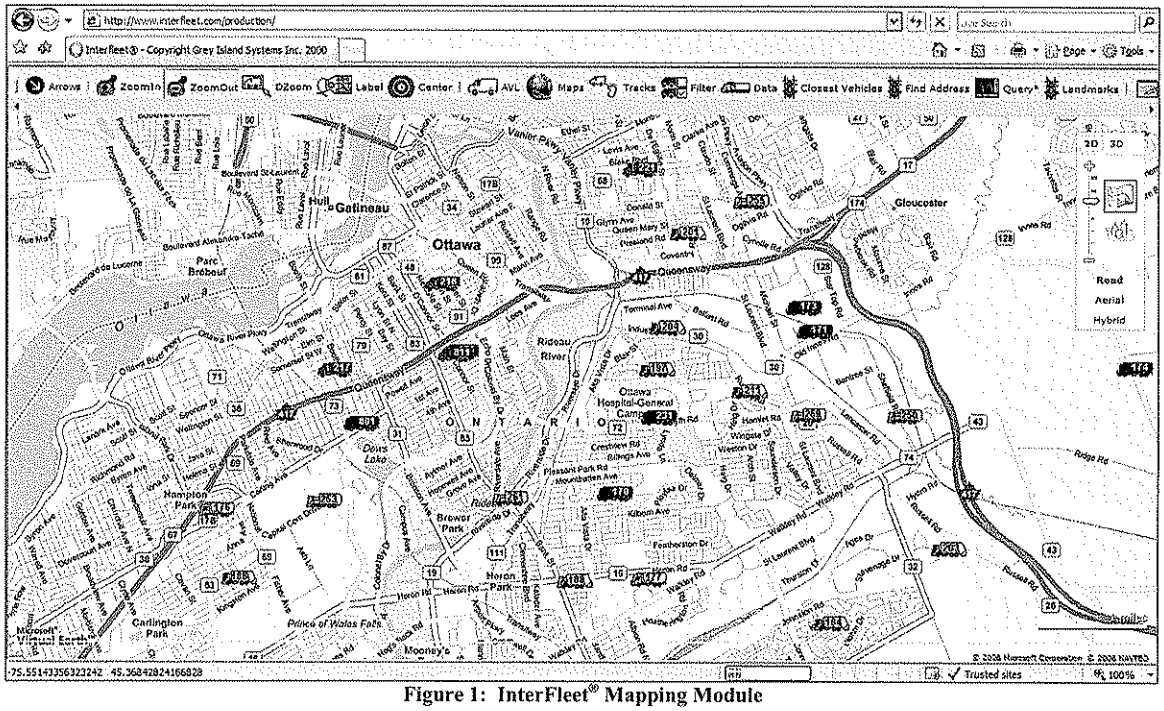


Figure 1: InterFleet® Mapping Module

The InterFleet® system can utilize the State of West Virginia's map data, address layers, and route data if available in shapefile format. Map data provided is added to map servers and this data is layered with the vehicle GPS positions to show accurate, map able vehicle location. This functionality also welcomes the use of digital orthophotos for enhanced mapping detail.

Real-Time Maps – Use of Agency ArcIMS Servers

InterFleet® has the capability of referencing the State's ArcIMS map servers for display of real-time map data. As soon as data is updated in the geodatabase, it is automatically updated on the AVL system. Users would simply run a map service through ArcIMS that would be referenced via html.

Microsoft Virtual Earth

In addition to standard North American Map Data and utilizing State owned Map Data, the InterFleet® application offers Microsoft Virtual Earth as an additional mapping tool.

Vehicle Identification

Each vehicle will have a unique identifier that includes the vehicle's identifying number based on agency nomenclature. Vehicle icons can be selected by the State of West Virginia based on vehicle type from a wide selection of .gif images provided by InterFleet® for consideration.

Display of Vehicle Information

When the cursor is placed over the vehicle icon, the last fix information from that vehicle will be automatically displayed in a pop-up window. Each vehicle has unique information displayed in this window based on the telematic information being retrieved. All information, including vehicle ID, time, date, direction, speed, and other sensor data, is displayed in this window. This data is also displayed when the cursor is placed over breadcrumbs left during both live and historical vehicle playback.

XML Interface (Optional)

InterFleet® includes an encrypted .XML interface from which the agency can write an application to query the database for real-time data. The format of this file will be pre-defined and verified prior to activation. In this way, users can access all pertinent vehicle data and have it stored on a separate database should they need to access the information in future. Example of interfaces include: Map Tools, Crystal Reports, Computer Aided Dispatch Systems, etc.

Tracks

The Tracks feature enables each vehicle to leave a breadcrumb trail as it travels across the screen. This feature can be activated in both live and historical data playback and maps the path the vehicle travelled. Each 'breadcrumb' represents a vehicle fix at 100-metre intervals and displays all vehicle data when the cursor is placed over the breadcrumb.

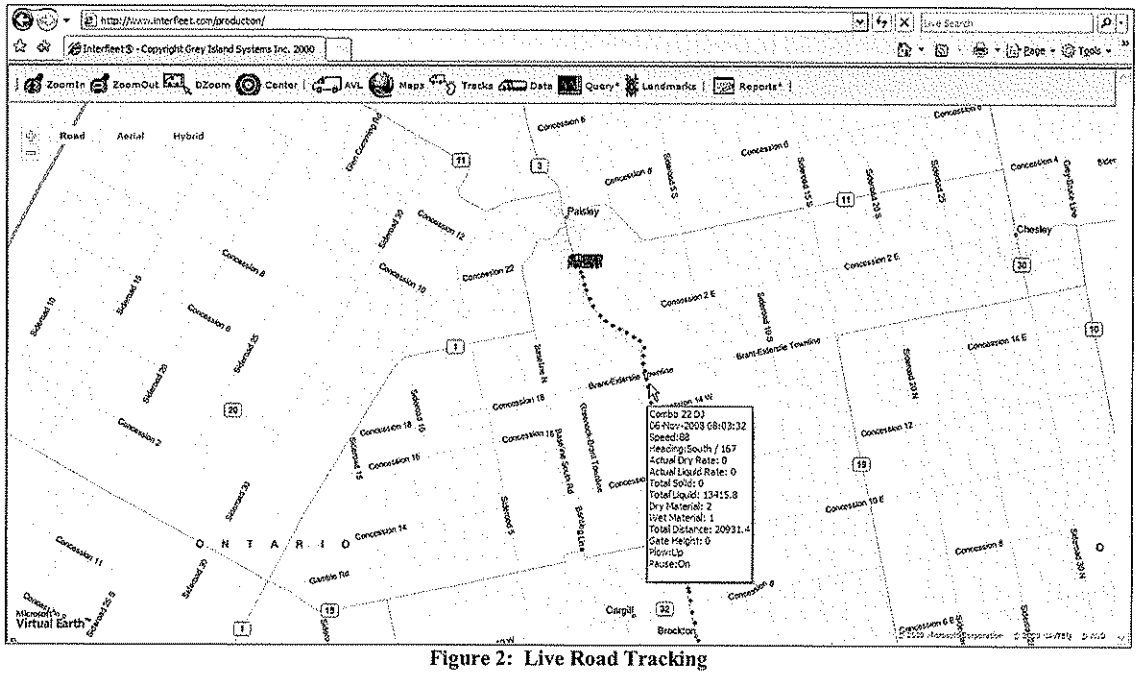


Figure 2: Live Road Tracking

Automatic Vehicle Location

The "AVL" tool allows a user to select a vehicle from a drop down menu, which contains a list of the entire fleet. When a vehicle is selected, the system will then re-centre itself to that vehicle's current location on the map where the vehicle is then highlighted with current or most recent data displayed for ease of reference.

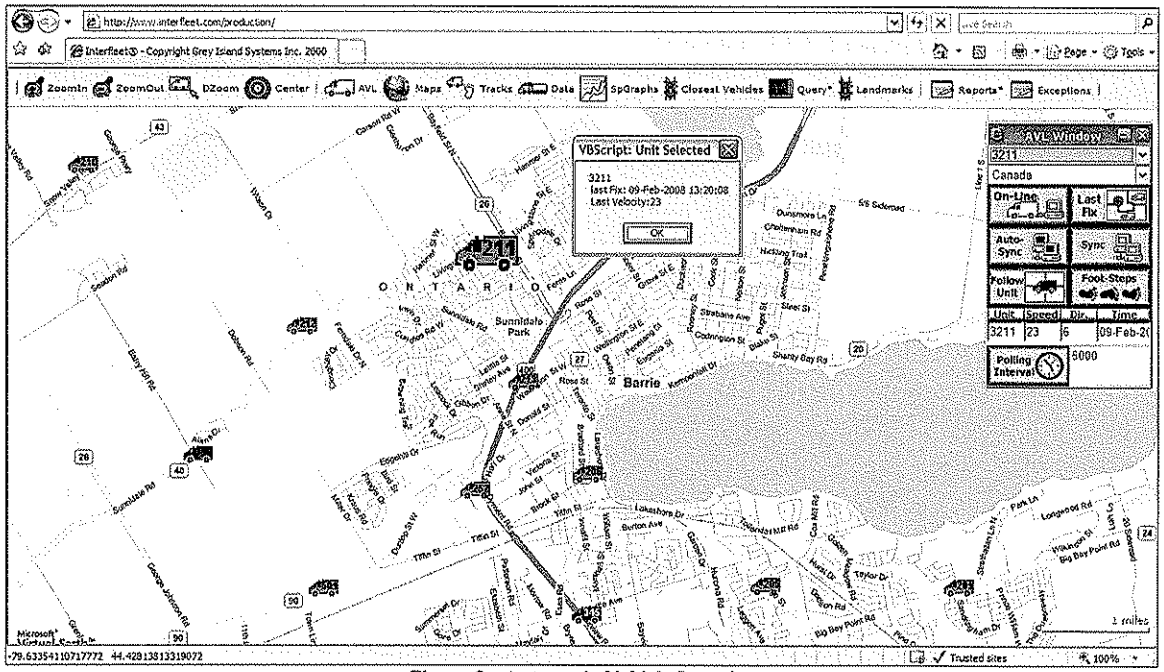


Figure 3: Automatic Vehicle Location

Vehicle Filter Tool

The Vehicle Filter tool allows the user to filter vehicles from the viewing area, i.e. vehicles that are not operating on a shift or vehicles unavailable due to maintenance.

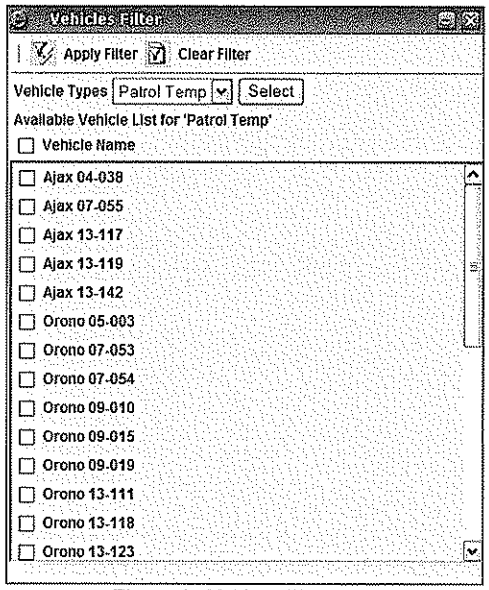


Figure 4: Vehicle Filter Tool

Find Address & Closest Vehicle

Users have the ability to type in an address and have the map zoom in and denote the address on the screen. The tool will also list the closest 10 vehicles and distance to a landmark or address.

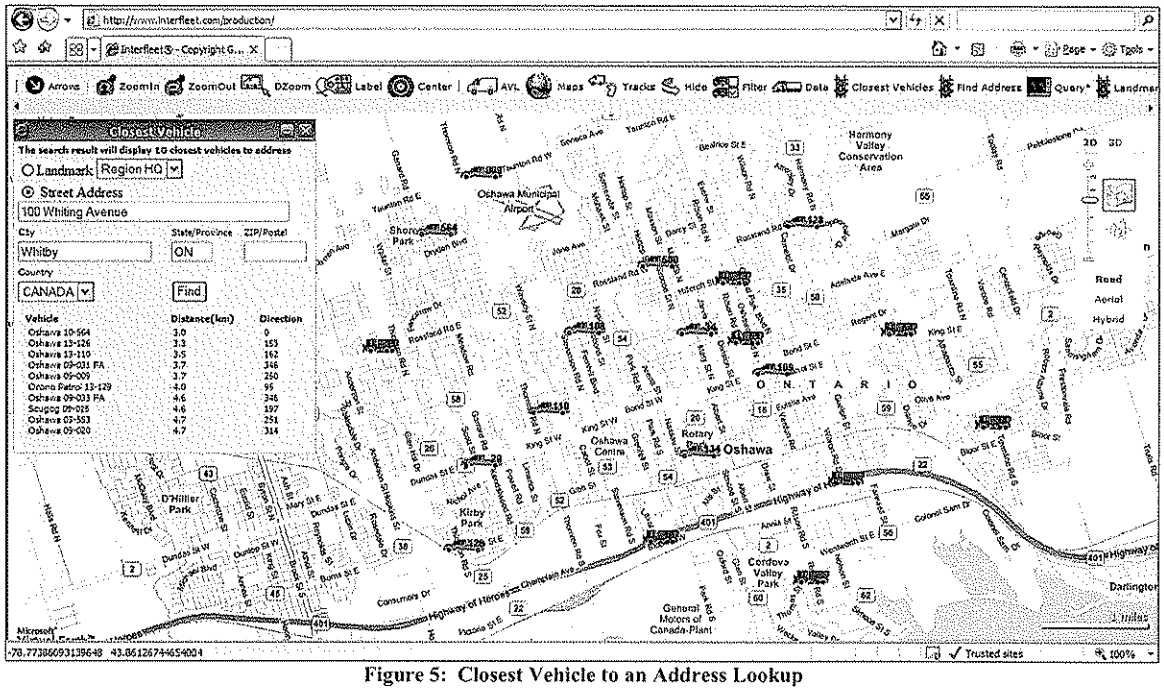


Figure 5: Closest Vehicle to an Address Lookup

Geofencing and Landmarks

InterFleet® allows users to enter customer specific landmarks into the system such as waste transfer stations, dispatch facilities or patrol yards. The system can be further customized to set geofences and landmarks to generate alerts or reports when a vehicle enters or leaves a specific area.

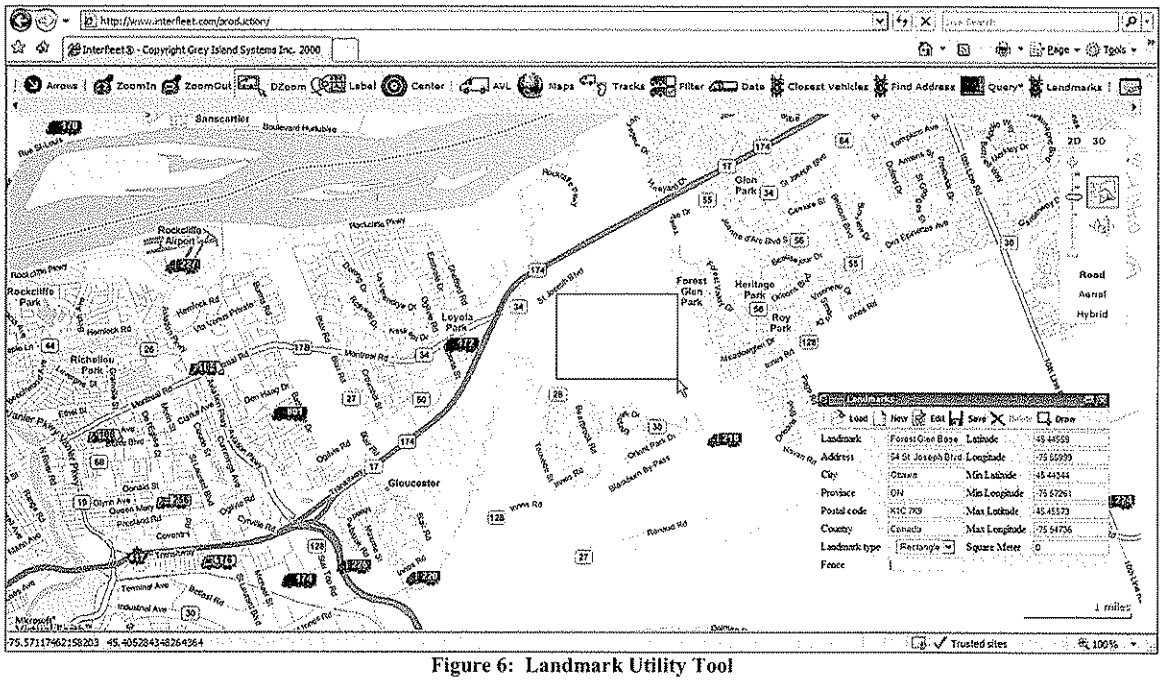


Figure 6: Landmark Utility Tool

Historical Data Queries

Ad-Hoc Query Tool

The Query Tool was designed with the intention of providing the user with an informal method of accessing historical information. It functions on the premise that the user defines all of the query criteria. (i.e. vehicles, date range, time frame, speeds, sensor status, etc.)

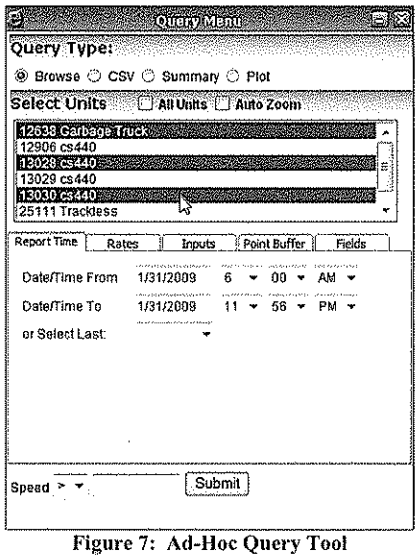


Figure 7: Ad-Hoc Query Tool

Query Playback - Browse Feature

The Browse feature of the Ad-hoc Query Tool, allows the user to replay activities of a single vehicle or specified group of vehicles for a user-determined time frame. The system playback feature will also preserve all pan and zoom capabilities of real-time operations.

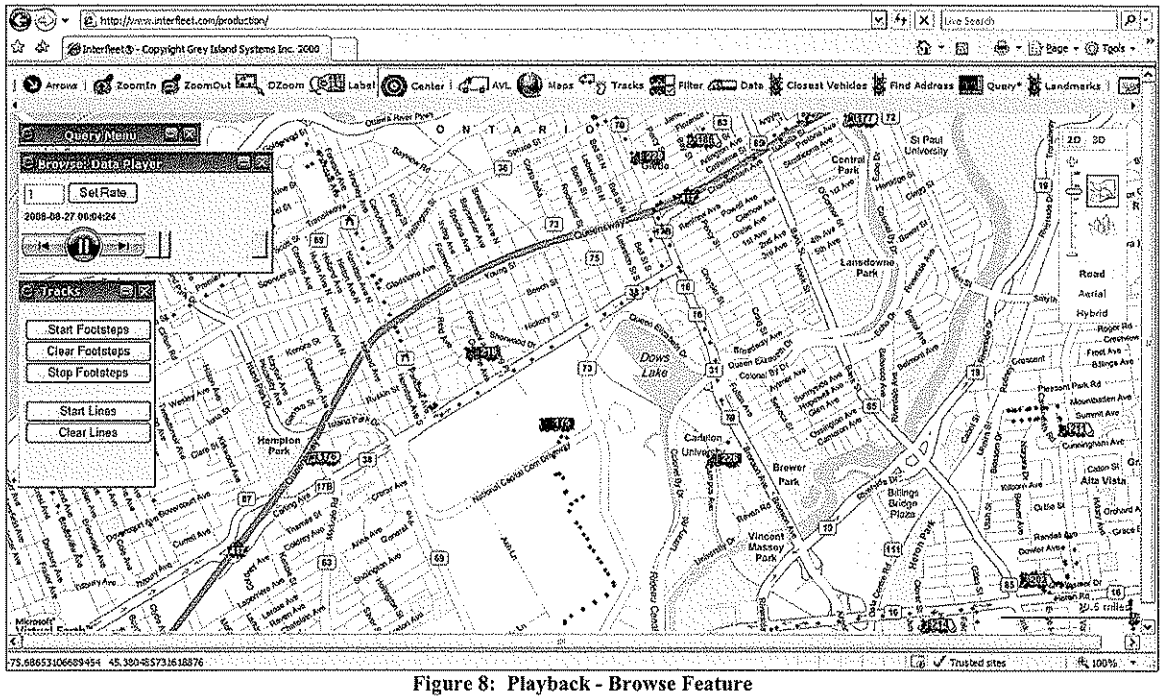


Figure 8: Playback - Browse Feature

Query Playback - CSV Report

The CSV feature of the Ad-Hoc Query Tool allows the user to view the raw data for a vehicle or specified group of vehicles for a user-determined time frame. Information includes: Vehicle ID, Vehicle Address, Latitude and Longitude Coordinates, Velocity, Direction in degrees, Date and Time, Inputs (True/False), and Rates. The data will be opened in another Microsoft Explorer window on Microsoft Excel.

VEHICLE NAME	VEHICLE ADDRESS	LATITUDE	LONGITUDE	VELOCITY	DIRECTION	DATE & TIME	RATE1	RATE2
Ajax 04-038	2940453	43.903	-78.88886	40	340	8/26/2008 6:59:46 AM	10.3	14.6
Ajax 04-038	2940453	43.90363	-78.88969	51	273	8/26/2008 7:00:01 AM	10.5	14.7
Ajax 04-038	2940453	43.90366	-78.89195	57	257	8/26/2008 7:00:11 AM	10.5	13.8
Ajax 04-038	2940453	43.90343	-78.89319	11	283	8/26/2008 7:00:21 AM	10.5	14.8
Ajax 04-038	2940453	43.90435	-78.89365	57	342	8/26/2008 7:00:31 AM	10.5	16.5
Ajax 04-038	2940453	43.9059	-78.89424	64	343	8/26/2008 7:00:41 AM	10.3	15.1
Ajax 04-038	2940453	43.90751	-78.89498	66	341	8/26/2008 7:00:51 AM	10.5	13.5
Ajax 04-038	2940453	43.90895	-78.89566	50	342	8/26/2008 7:01:01 AM	10.4	13.4
Ajax 04-038	2940453	43.90948	-78.89587	0	109	8/26/2008 7:02:02 AM	10.4	13.8
Ajax 04-038	2940453	43.9095	-78.89669	50	253	8/26/2008 7:02:23 AM	10.4	12.5
Ajax 04-038	2940453	43.90901	-78.8988	68	254	8/26/2008 7:02:33 AM	10.5	12.8
Ajax 04-038	2940453	43.90855	-78.90109	64	253	8/26/2008 7:02:43 AM	10.5	13.3
Ajax 04-038	2940453	43.90806	-78.90332	64	253	8/26/2008 7:02:53 AM	10.6	12.6
Ajax 04-038	2940453	43.90758	-78.90565	70	253	8/26/2008 7:03:03 AM	10.6	12.8
Ajax 04-038	2940453	43.90705	-78.90793	64	251	8/26/2008 7:03:13 AM	10.6	12.7
Ajax 04-038	2940453	43.9066	-78.90993	57	252	8/26/2008 7:03:23 AM	10.7	12.4
Ajax 04-038	2940453	43.90611	-78.91197	64	250	8/26/2008 7:03:33 AM	10.7	12.8
Ajax 04-038	2940453	43.90558	-78.91421	66	252	8/26/2008 7:03:43 AM	10.7	12.1
Ajax 04-038	2940453	43.90506	-78.91639	61	252	8/26/2008 7:03:53 AM	10.8	12.2

Figure 9: Playback - CSV Report

Query Playback - Plotting Feature

The plot feature of the Ad-Hoc Query Tool allows the user to plot historical activity for a vehicle or group of vehicles for a user-determined time frame. Activity can be plotted in lines, points or text. Lines for example provides the path taken by each vehicle queried for, start and end locations are indicated by green and red pushpins while stops are marked by red circles. Points on the other hand plots arrows for each vehicle report on the map, much like breadcrumbs.

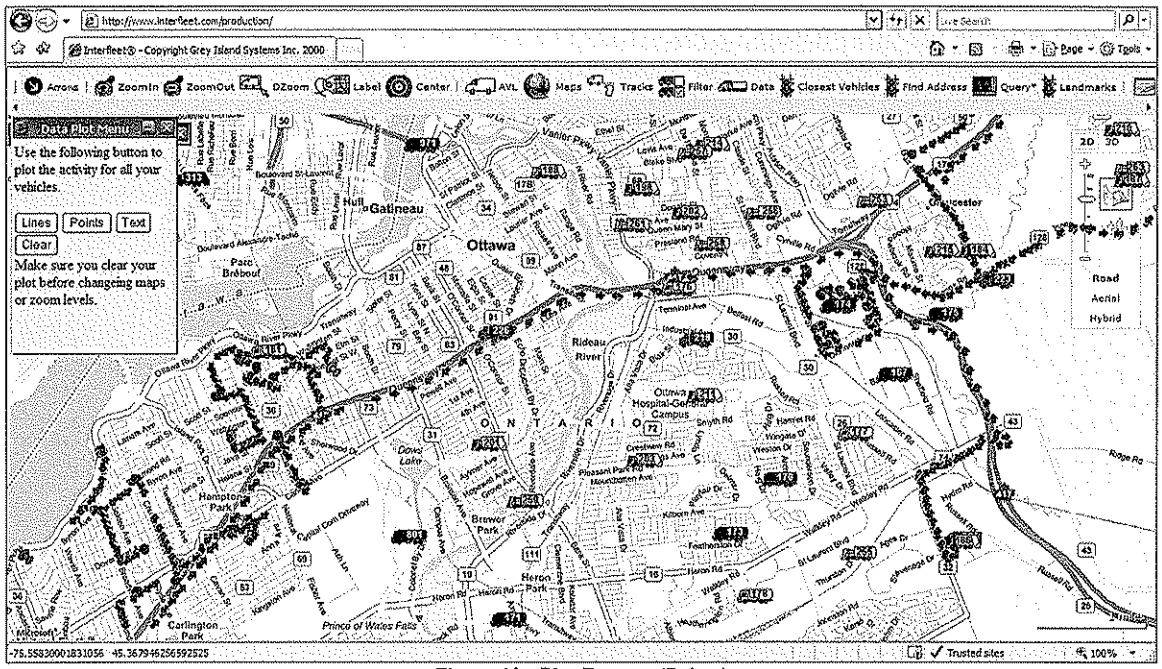
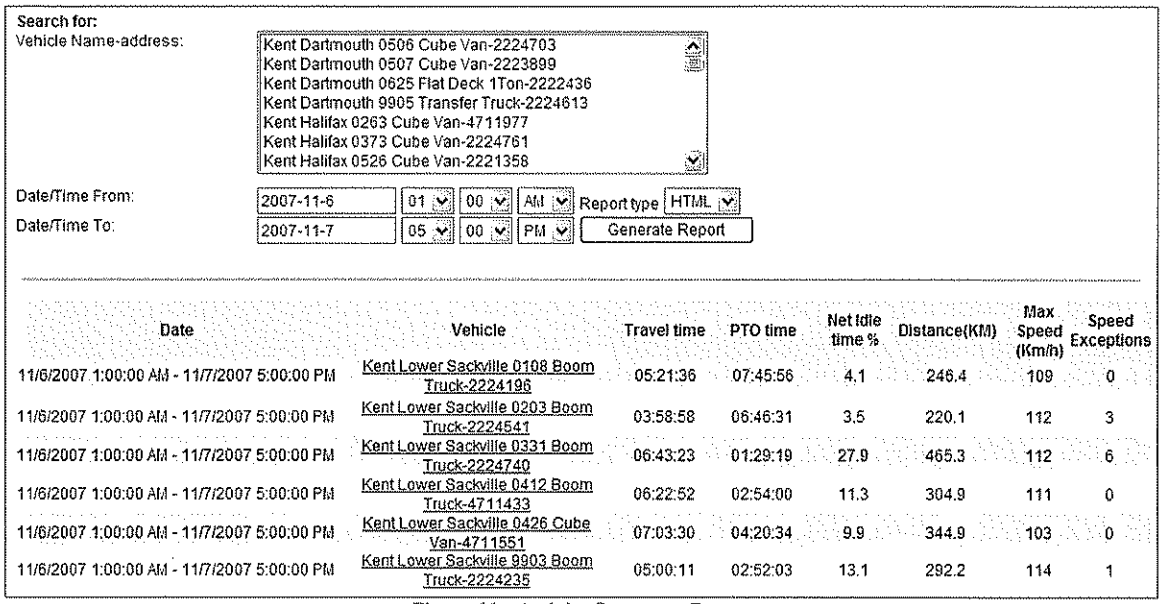


Figure 10: Plot Feature (Points)

Management Reports

Activity Summary

As a quick view report, InterFleet® offers an Activity Summary Report that displays vehicle activity for a specified time period. The vehicle ID is hyperlinked to a vehicle stop report.



Date	Vehicle	Travel time	PTO time	Net Idle time %	Distance(KM)	Max Speed (Km/h)	Speed Exceptions
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 0108 Boom Truck-2224196	05:21:36	07:45:56	4.1	246.4	109	0
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 0203 Boom Truck-2224541	03:58:58	06:46:31	3.5	220.1	112	3
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 0331 Boom Truck-2224740	06:43:23	01:29:19	27.9	465.3	112	6
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 0412 Boom Truck-4711433	06:22:52	02:54:00	11.3	304.9	111	0
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 0426 Cube Van-4711551	07:03:30	04:20:34	9.9	344.9	103	0
11/6/2007 1:00:00 AM - 11/7/2007 5:00:00 PM	Kent Lower Sackville 9903 Boom Truck-2224235	05:00:11	02:52:03	13.1	292.2	114	1

Figure 11: Activity Summary Report

Stop Report

The InterFleet® system provides a Stop Report denoting a vehicle's stops throughout the day. These stops will be georeferenced to an address range. A stop in a geofenced area is highlighted with a special icon as below for stop number two. The stop report provides idle time information as well for each stop and a cumulative total for the user-defined time-frame. Geographic representation of tabular data is also provided when selecting the Map It feature at the time of query.

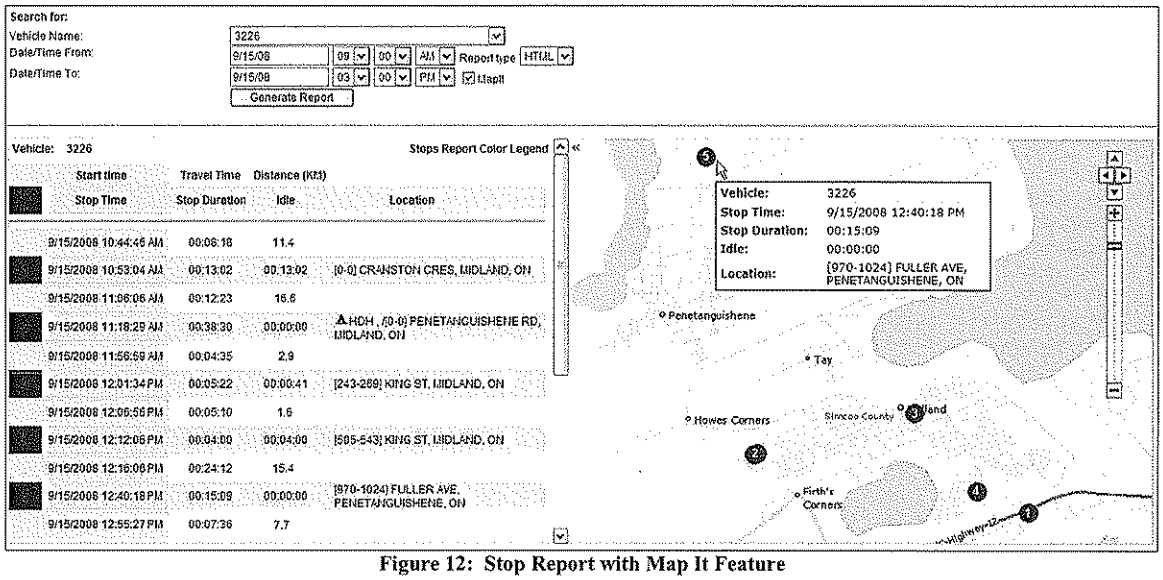


Figure 12: Stop Report with Map It Feature

Vehicle Status Report

The Vehicle Status Report included in the InterFleet® system displays vehicle ID, status (moving or stopped), time, and location of last fix information. The last fix data is color coded and organized by the legend identified in the report.

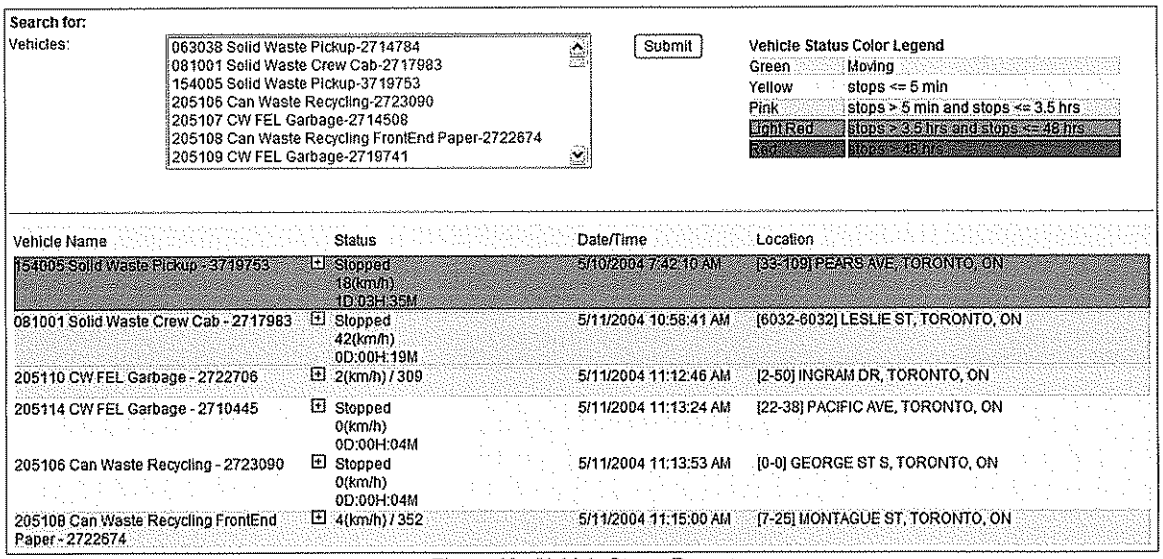


Figure 13: Vehicle Status Report

Fuel Consumption Report

The Fuel Consumption Report displays vehicle ID, initial start time and final stop time for the time period queried, the number of trips within that time period, and total fuel consumed. The Fuel Consumption Report requires Engine Control Modules in the vehicles to integrate to vehicle engines.

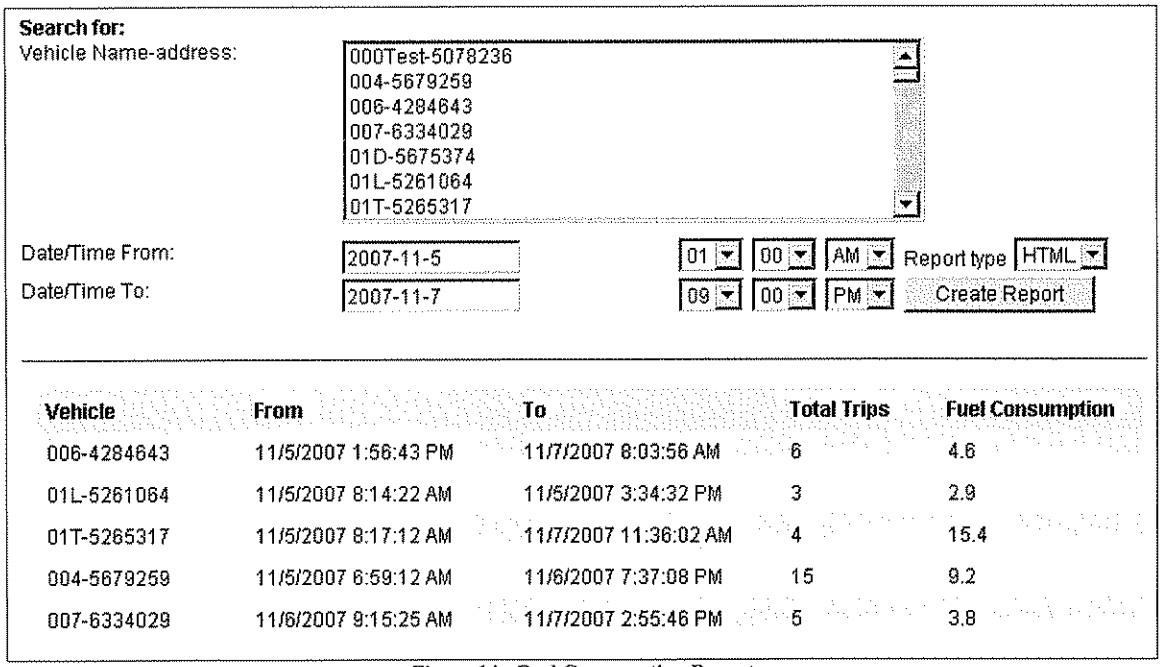
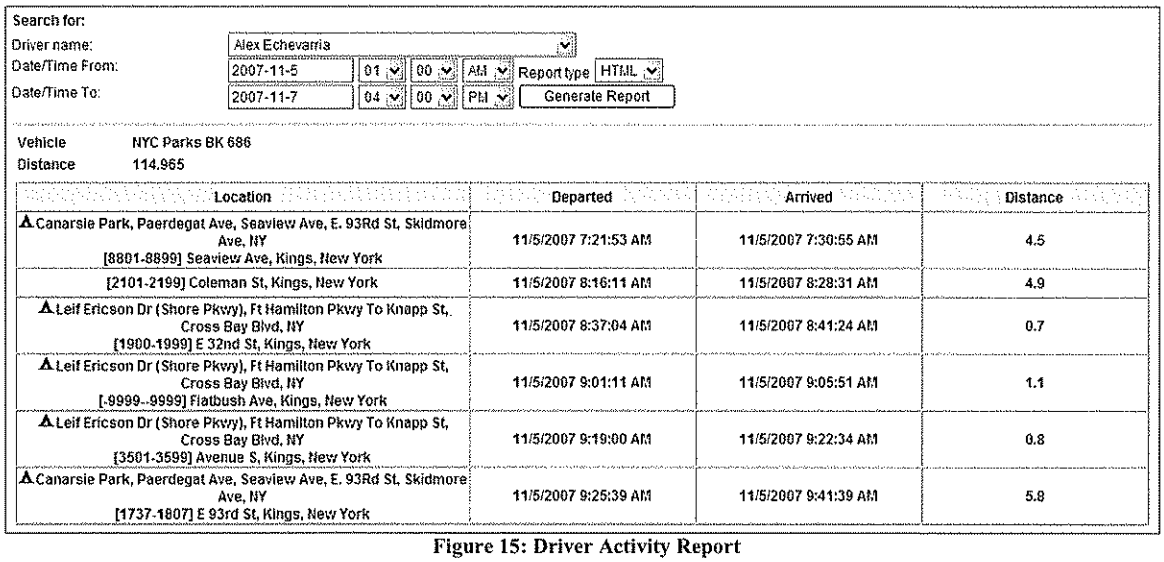


Figure 14: Fuel Consumption Report

Driver Activity Report

The Driver Activity Report is based on Driver ID Information and can either be correlated to vehicle used and vehicle information or simply provide driving distances in mileage and driver hours. Driver ID Kits are required in all vehicles. Driver ID Kits can use either Key Fobs or Card Swipes.



Search for:
Driver name: Alex Echevarria
Date/Time From: 2007-11-5 01 00 AM Report type HTML
Date/Time To: 2007-11-7 04 00 PM Generate Report

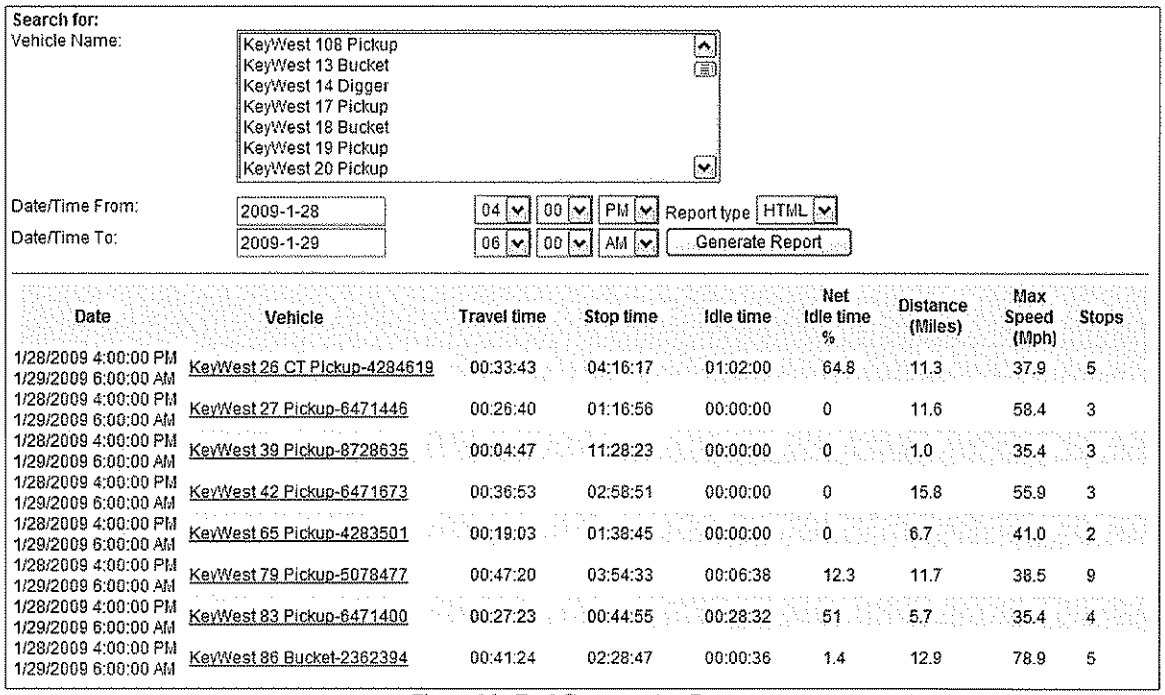
Vehicle NYC Parks BK 686
Distance 114.965

Location	Departed	Arrived	Distance
⚠Canarsie Park, Paerdegat Ave, Seaview Ave, E. 93Rd St, Skidmore Ave, NY [8801-8899] Seaview Ave, Kings, New York	11/5/2007 7:21:53 AM	11/5/2007 7:30:55 AM	4.5
[2101-2199] Coleman St, Kings, New York	11/5/2007 8:16:11 AM	11/5/2007 8:28:31 AM	4.9
⚠Leif Ericson Dr (Shore Pkwy), Ft Hamilton Pkwy To Knapp St, Cross Bay Blvd, NY [1900-1999] E 32nd St, Kings, New York	11/5/2007 8:37:04 AM	11/5/2007 8:41:24 AM	0.7
⚠Leif Ericson Dr (Shore Pkwy), Ft Hamilton Pkwy To Knapp St, Cross Bay Blvd, NY [-9999--9999] Flatbush Ave, Kings, New York	11/5/2007 9:01:11 AM	11/5/2007 9:05:51 AM	1.1
⚠Leif Ericson Dr (Shore Pkwy), Ft Hamilton Pkwy To Knapp St, Cross Bay Blvd, NY [3501-3599] Avenue S, Kings, New York	11/5/2007 9:19:00 AM	11/5/2007 9:22:34 AM	0.8
⚠Canarsie Park, Paerdegat Ave, Seaview Ave, E. 93Rd St, Skidmore Ave, NY [1737-1807] E 93rd St, Kings, New York	11/5/2007 9:25:39 AM	11/5/2007 9:41:39 AM	5.8

Figure 15: Driver Activity Report

After-Hours Activity Report

The After-Hours Activity Report tracks Driver Activity after hours or on weekends. It will appear like an Activity Summary report, providing the same information, simply filtering data to activity after defined work hours and weekends.



Search for:
Vehicle Name:
KeyWest 108 Pickup
KeyWest 13 Bucket
KeyWest 14 Digger
KeyWest 17 Pickup
KeyWest 18 Bucket
KeyWest 19 Pickup
KeyWest 20 Pickup
Date/Time From: 2009-1-28 04 00 PM Report type HTML
Date/Time To: 2009-1-29 06 00 AM Generate Report

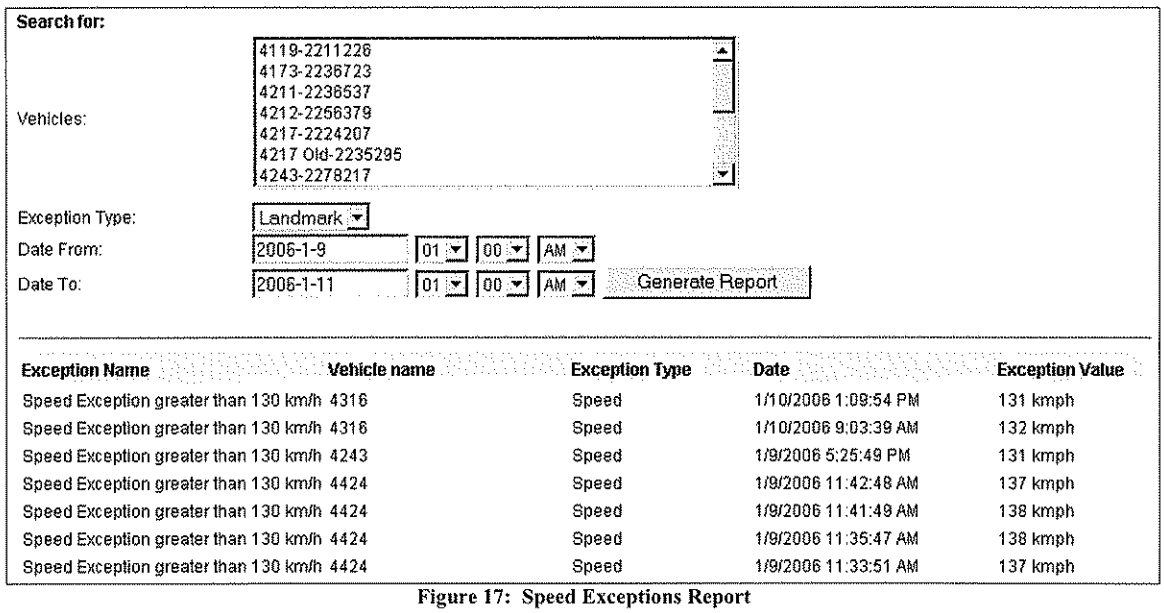
Date	Vehicle	Travel time	Stop time	Idle time	Net Idle time %	Distance (Miles)	Max Speed (Mph)	Stops
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 26 CT Pickup-4284619	00:33:43	04:16:17	01:02:00	64.8	11.3	37.9	5
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 27 Pickup-6471446	00:26:40	01:16:56	00:00:00	0	11.6	58.4	3
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 39 Pickup-8728635	00:04:47	11:28:23	00:00:00	0	1.0	35.4	3
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 42 Pickup-6471673	00:36:53	02:58:51	00:00:00	0	15.8	55.9	3
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 65 Pickup-4283501	00:19:03	01:38:45	00:00:00	0	6.7	41.0	2
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 79 Pickup-5078477	00:47:20	03:54:33	00:06:38	12.3	11.7	38.5	9
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 83 Pickup-6471400	00:27:23	00:44:55	00:28:32	51	5.7	35.4	4
1/28/2009 4:00:00 PM 1/29/2009 6:00:00 AM	KeyWest 86 Bucket-2362394	00:41:24	02:28:47	00:00:36	1.4	12.9	78.9	5

Figure 16: Fuel Consumption Report

Exceptions Reporting

Exception Reports

Users will have the ability to query the system for exceptions. These exceptions can be based on geofences of the State of West Virginia boundaries, stop length, and speed and are referenced to an address range. All exceptions can be sent automatically to management staff via E-Mail.

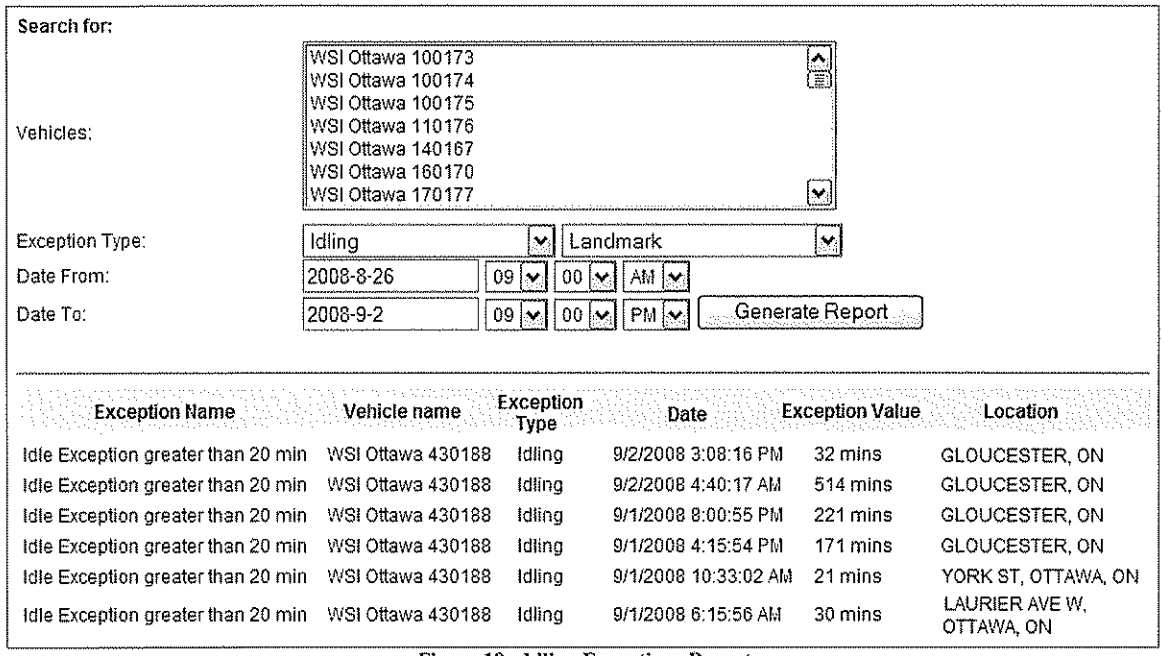


Exception Name	Vehicle name	Exception Type	Date	Exception Value
Speed Exception greater than 130 km/h	4316	Speed	1/10/2006 1:09:54 PM	131 kmph
Speed Exception greater than 130 km/h	4316	Speed	1/10/2006 9:03:39 AM	132 kmph
Speed Exception greater than 130 km/h	4243	Speed	1/9/2006 5:25:49 PM	131 kmph
Speed Exception greater than 130 km/h	4424	Speed	1/9/2006 11:42:48 AM	137 kmph
Speed Exception greater than 130 km/h	4424	Speed	1/9/2006 11:41:49 AM	138 kmph
Speed Exception greater than 130 km/h	4424	Speed	1/9/2006 11:35:47 AM	138 kmph
Speed Exception greater than 130 km/h	4424	Speed	1/9/2006 11:33:51 AM	137 kmph

Figure 17: Speed Exceptions Report

Idling Exception Reports

Reports capture lack of vehicle activity for established time frame in corresponding landmarks. Locations are identified using the Landmark Tool.



Exception Name	Vehicle name	Exception Type	Date	Exception Value	Location
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/2/2008 3:08:16 PM	32 mins	GLOUCESTER, ON
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/2/2008 4:40:17 AM	514 mins	GLOUCESTER, ON
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/1/2008 8:00:55 PM	221 mins	GLOUCESTER, ON
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/1/2008 4:15:54 PM	171 mins	GLOUCESTER, ON
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/1/2008 10:33:02 AM	21 mins	YORK ST, OTTAWA, ON
Idle Exception greater than 20 min	WSI Ottawa 430188	Idling	9/1/2008 6:15:56 AM	30 mins	LAURIER AVE W, OTTAWA, ON

Figure 18: Idling Exceptions Report

Zone Exception Report

The Zone Exception Reports will notify management staff when vehicles enter or leave specified landmarked locations or boundaries. Landmarks are created using the Landmarks tool. Zones can also be used in conjuction with Speed and Idling Exception Reporting. All alerts will appear in the Exception Console as well as in the Zone Exception Report.

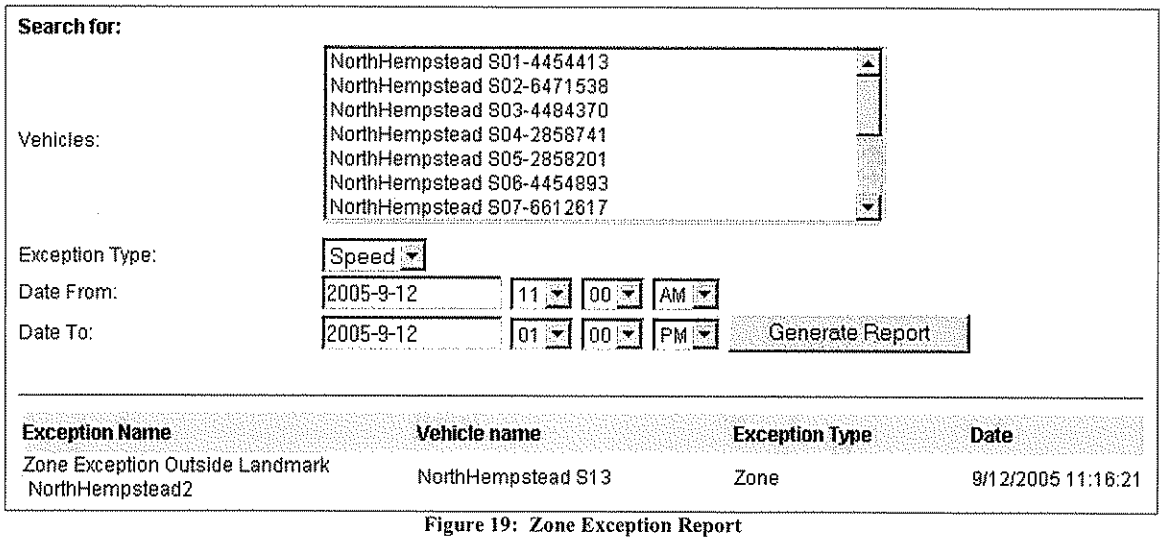


Figure 19: Zone Exception Report

Congregation Report

The Congregation Report will alert management of occasions when vehicles congregate. Congregation thresholds are defined as vehicles stopping within a pre-determined distance from one another over a pre-determined amount of time. These pre-determined distances and time thresholds have to be the same for all vehicles within the fleet.

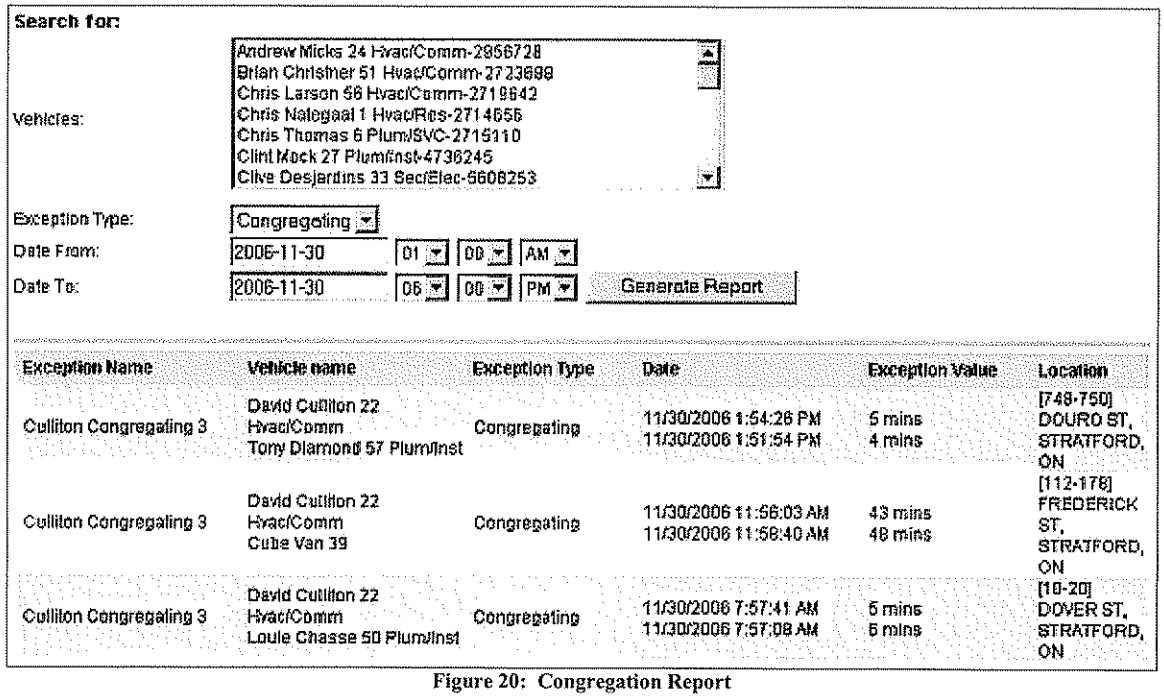


Figure 20: Congregation Report

Exception Monitoring Console

The InterFleet® system provides a tabular report displaying current exceptions updated in real-time. Details of each exception are displayed, including Date and Time, Vehicle ID, Exception Type, Exception Name, and Exception Value. Location information is provided when the exception is selected on the report. Exceptions can include stop duration, exceeding speed thresholds, excessive idling, congregation, landmark exceptions, and they can be paired with sensor data as well as geofences and landmarks.

Row	Date	Vehicle	Exception Type	Exception Name	Exception Value
1	8/27/2008 1:33:41 PM	WSI Ottawa 280223	Stop	Stop greater than 30 minutes outside landmark	3092 mins
2	8/27/2008 1:33:36 PM	WSI Ottawa 210228	Stop	Stop greater than 30 minutes outside landmark	38640 mins
3	8/27/2008 1:32:31 PM	WSI Ottawa 160170	Stop	Stop greater than 30 minutes outside landmark Timmies 10th line	192607 mins
4	8/27/2008 1:13:43 PM	WSI Ottawa 470199	Zone	Zone Exception Dollarama Orleans	On
5	8/27/2008 12:59:45 PM	WSI Ottawa 430188	Zone	Zone Exception dollarama Merivale	On
6	8/27/2008 12:59:06 PM	WSI Ottawa 200217	Landmark	Landfill Offload Delay greater than 20 min NAVAN RD LANDFILL	
7	8/27/2008 12:55:50 PM	WSI Ottawa 200227	Landmark	Landfill Offload Delay greater than 20 min NAVAN RD LANDFILL	
8	8/27/2008 12:51:00 PM	WSI Ottawa 270221	Landmark	Landfill Offload Delay greater than 20 min NAVAN RD LANDFILL	
9	8/27/2008 12:37:26 PM	WSI Ottawa 210218	Landmark	Landfill Offload Delay greater than 20 min NAVAN RD LANDFILL	
10	8/27/2008 12:28:33 PM	WSI Ottawa 100173	Landmark	Landfill Offload Delay greater than 20 min NAVAN RD LANDFILL	
11	8/27/2008 12:09:29 PM	WSI Ottawa 420187	Zone	Zone Exception Dollarama Orleans	On
12	8/27/2008 12:07:49 PM	WSI Ottawa 170177	Stop	Stop greater than 30 minutes outside landmark	38 mins
13	8/27/2008 12:07:42 PM	WSI Ottawa 100175	Stop	Stop greater than 30 minutes outside landmark	33 mins

Exception Details

Date:	8/27/2008 12:59:06 PM	Vehicle name:	WSI Ottawa 200217
Exception name:	Landfill Offload Delay greater than 20 min	Exception Type:	Landmark
Value:	30 mins		
Location:	NAVAN RD LANDFILL		

Figure 21: Exception Monitoring Console

Optional Operations Reports

Public Works Operational Reports

Central to the InterFleet® application is the development of operations reports for each agency fleet. (Figures 21a-c). InterFleet Inc. will work with the State of West Virginia to customize a report to display and calculate pertinent information such as operational miles and hours within State boundaries and sub zones. All reports are exportable to ASCII text, Microsoft Excel and Access formats. At a minimum, the customized report would include:

- Vehicle/ Engine ID/ Address
- Hours of Operation within boundaries (engine run hours)
- Miles of Operation within boundaries
- Percent Operation within boundaries

DSNY Salt Usage Report
from 1/27/2004 01:00:00 AM To 1/28/2004 01:00:00 AM

Vehicle Name	District	Key Time	Time Comp.	Total Time	Miles Spread	Dead Head	Miles Total	Percent Spread	Hours Spread	Salt Used (tons)	Number of Loads	PreWet Used (gals)	Blast #	Error	Application Rate Dry	Application Rate PreWet
DSNY 38AA301	BK1	4:26	0:54	20.28	63.14	29.12	92.26	68.40%	4.53	17.98	1.12	26.12	0	YES	555	6
DSNY 38AA302	SI3	8:59	0:59	16	110.55	54.08	164.63	67.10%	4.17	47.12	2.94	267.05	21	YES	853	6
DSNY 38AA303	BX4	5:28	0:50	19.22	63.58	72.05	135.63	46.90%	2.46	31.77	1.99	139.22	0	YES	1,000	6
DSNY 38AA304	BK11	7:29	0:59	17.3	91.71	42.8	134.5	68.20%	4.82	44.98	2.81	23.38	0	YES	983	6
DSNY 38AA305	SI1	8:12	0:59	16.47	33.34	92.31	125.65	26.50%	1.92	13.2	0.83	79.22	0	NO	800	6
DSNY 38AA306	BX10	7:21	0:59	17.38	42.93	22.28	65.21	65.80%	2.87	15.04	0.94	15.49	0	YES	702	6
DSNY 38AA307	QE11A	1:01	0:54	23.53	46.67	66.91	113.59	41.10%	3.41	20.14	1.26	120.84	0	YES	844	6
DSNY 38AA308	SI2	9:30	0:13	14.43	67.97	40.16	98.12	59.10%	3.94	29.14	1.82	42.42	7	YES	1,030	6
			Totals:	509.89	419.71	929.59	443.17%	28.12	219.37	13.71	713.74	28				

Cost @34.40/Ton:	7,546.33	
Cost @0.80/Gallon:		570.99

Total Cost	8,117.32
Avg Cost Per Vehicle	1,014.67
Total Cost for 350	355,132.75

Figure 22a: Winter Maintenance/Salt Usage Report

Vehicle Name: Crupi Sweeper C-52

Report period: From yyyy/mm/dd 3/10/2005 1:00 to yyyy/mm/dd 5/10/2005 1:00

Date (MM/DD/YYYY)	Time Started	Time Completed	Right Side Sweeping Time	Left Side Sweeping Time	Both Sides Sweeping Time	Total Time Swept	Dead Head Time	Right Side Sweeping Distance	Left Side Sweeping Distance	Both Sides Sweeping Distance	Total Mi Swept	Dead Head Miles	Total Mi Travelled	Average Sweeping Speed	Idle Time
3/10/2005	6:49	19:12	0:00	0:00	4:58	4:58	4:57	0	0	28.18	28.18	79.48	107.66	7.8	2:27
4/10/2005	2:42	19:48	0:12	0:01	2:20	2:34	12:23	0.77	0.08	10.44	11.29	39.15	50.44	6.59	2:09
		Totals:	0:12	0:01	7:19	7:32	17:20	0.77	0.08	38.62	39.47	118.63	158.1	7.2	4:36

Figure 22b: Customized Sweeper Operations Report

Search for:

Vehicle Name-address: Enersource Demo-2827597

Date/Time From: 2005-6-9 01 00 AM Report type HTML

Date/Time To: 2005-6-14 01 00 AM Generate Report

Date	PTO Start	PTO Stop	PTO Stop Duration	Location
2005/06/09	09:51:21	10:11:25	00:20:04	[7170-7244] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	10:12:15	10:35:47	00:23:32	[0-0] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	10:37:52	11:19:06	00:41:14	[7062-7168] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	11:21:52	11:41:25	00:19:33	[7062-7168] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	12:35:44	12:39:50	00:04:06	[7382-7588] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	12:45:29	13:03:27	00:17:58	[7382-7588] TOMKEN RD, MISSISSAUGA, ON
2005/06/09	13:04:22	13:34:49	00:30:27	[7382-7588] TOMKEN RD, MISSISSAUGA, ON
2005/06/10	08:14:41	10:21:11	02:06:30	[0-0] TOMKEN RD, MISSISSAUGA, ON
2005/06/10	10:23:53	11:30:09	01:06:16	[7170-7244] TOMKEN RD, MISSISSAUGA, ON
2005/06/10	11:30:37	12:06:33	00:35:56	[7170-7244] TOMKEN RD, MISSISSAUGA, ON
2005/06/13	08:51:04	10:33:51	01:42:47	[0-0] TOMKEN RD, MISSISSAUGA, ON
2005/06/13	10:36:47	11:17:48	00:41:01	[7062-7168] TOMKEN RD, MISSISSAUGA, ON
2005/06/13	11:19:55	11:39:51	00:19:56	[7062-7168] TOMKEN RD, MISSISSAUGA, ON
2005/06/13	12:26:48	13:54:38	01:27:50	[691-875] GANA CRT, MISSISSAUGA, ON

Summary

Total PTO Usage 10:37:10

Figure 22c: PTO Report

Search for:

Date From * 2005-2-28

Date To * 2005-2-28 (yyyy-mm-dd) Submit

Vehicle Name /Date	Address Location	Input	Assign
Whitby Patrol 175 - 3175074			
2/28/2005 8:30:16 AM	[0-0] MCKINNEY DR (,)	Debris: On	☐
2/28/2005 8:30:18 AM	[0-0] MCKINNEY DR (,)	Cracks: On	☐
2/28/2005 8:30:20 AM	[0-0] MCKINNEY DR (,)	SurfaceDisc: On	☐
2/28/2005 8:30:22 AM	[0-0] MCKINNEY DR (,)	Bridge: On	☐
2/28/2005 8:30:24 AM	[0-0] MCKINNEY DR (,)	Snowice: On	☐
2/28/2005 8:30:26 AM	[0-0] MCKINNEY DR (,)	Sign: On	☐
2/28/2005 8:30:28 AM	[0-0] MCKINNEY DR (,)	Pothole Paved Rd: On	☐
2/28/2005 8:30:30 AM	[0-0] MCKINNEY DR (,)	Pothole Non Paved Rd: On	☐
2/28/2005 8:30:32 AM	[0-0] MCKINNEY DR (,)	Pothole - Shoulder: On	☐
2/28/2005 9:44:03 AM	[0-0] MCKINNEY DR (,)	Sign: On	☐
2/28/2005 10:02:55 AM	[1201-1251] BROCK ST S (,)	Pothole Paved Rd: On	☐
2/28/2005 10:06:16 AM	[1415-1415] BYRON ST S (,)	Pothole Non Paved Rd: On	☐
2/28/2005 10:09:23 AM	[0-0] NORDEAGLE AVE (,)	Sign: On	☐
2/28/2005 10:17:44 AM	[605-605] HALLS RD S (,)	Pothole Non Paved Rd: On	☐

Figure 22d: Road Maintenance Report

Route Completion Reporting

The Route Completion Report is a mapping integration report. Each road segment (cross-street to cross-street) must be split and classified accordingly. Classifications will detail the number of passes required in order to consider the segment complete. Example: Major Arterials require 4+ passes with spreader 'on' for completion.

Emergency Reporting and Functionality

Emergency Alarms

The InterFleet® solution can be configured to generate alarms based on unauthorized operating conditions of a vehicle. Once an alarm is received at the data center, response personnel can be paged, emailed, etc. InterFleet® has a number of vehicles using the system in this way for safety and security of personnel and valuables.

For driver and crew safety, InterFleet Inc. offers a Security alerts feature. Emergency Service personnel can be provided with a small handheld device, where in the case of an emergency, can be activated by the push of a button. When the panic button is activated, the module will automatically relay both audible and visual alerts to dispatch/control advising them of the emergency, the emergency location, and the vehicle/driver involved.

This feature is especially valuable with police, armored car, and emergency medical service fleets and parking authority vehicles when transporting cash, pharmaceuticals and other valuables.

In the event of an alert, a screen pop is generated. In the event of one or more alerts, the alerts will be displayed from most recent to least recent.

CIA-Critical

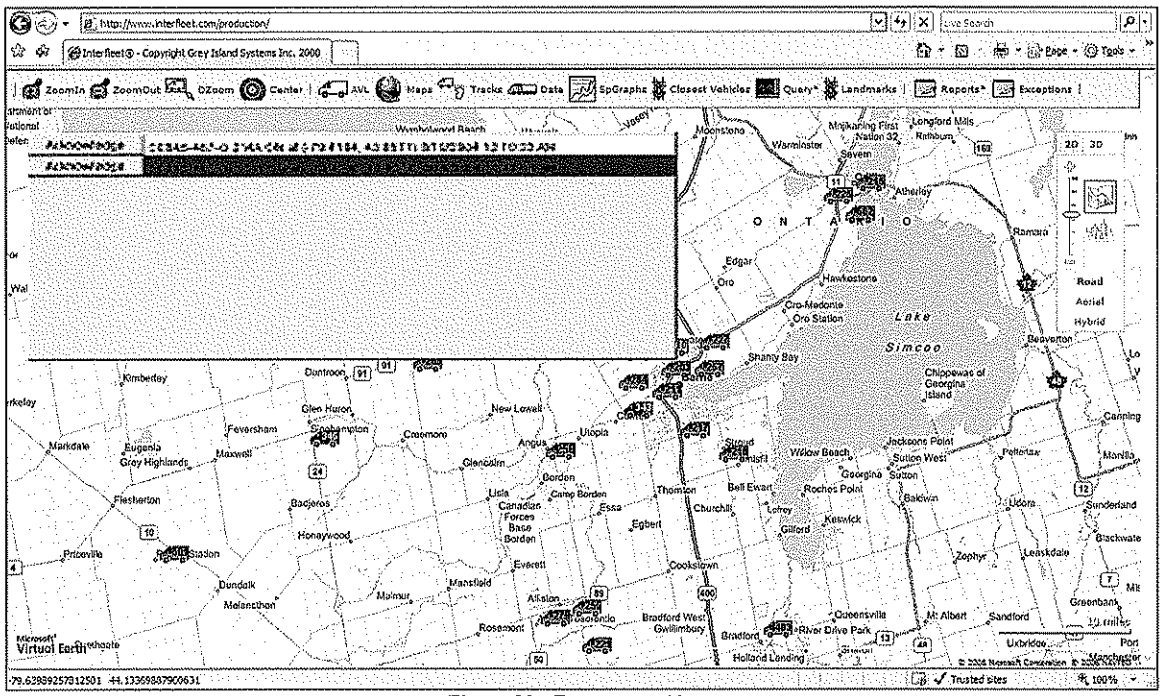


Figure 23: Emergency Alerts

This feature can be customized to meet the requirements of the State of West Virginia.

Hardware Components

Vehicle System

A mobile data processing unit (MDU) is installed in each of the vehicles. The MDU includes a wireless modem, 16 channel WAAS GPS receiver and sensor input capability. It is a Straightforward 12-volt installation with combined GPS and cellular surface mount antenna. Upon vehicle ignition, the vehicle will automatically report to the system Upon vehicle ignition, the vehicle will automatically report to the system. No operator input is required to begin transmitting position and sensor data. The unit is easily mounted covertly under the dash or seat. Parameters of the unit can be changed using remote access, and thus technician input is rarely required.

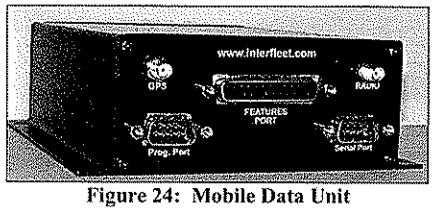


Figure 24: Mobile Data Unit

Reporting Frequency

The reporting frequency can be modified in order to optimize the data collected while continuing to manage budgetary requirements. Reporting could be as often as every 3 seconds, 5 seconds, 10 seconds or configured for one (1), two (2), five (5), and fifteen (15) minute updates, the solution can be customized for any combination of time and distance. Reporting frequencies can be configured per vehicle or fleet type.

Discrete Sensors

A noted strength of the InterFleet® system is the ability to interface to a wealth of external discrete sensors and simply needs a 12v input to determine the status of a sensor. Discrete sensors are those that provide an up/ down, on /off status (door open/ closed). The InterFleet® solution provides much more than vehicle tracking.

- Fork Actuator Front/Side (Solid Waste)
- Box up/down
- Blade up/down
- Wing up/down
- Ripper up/down
- Gate Setting
- Brooms up/down
- Water on/off
- Spreader on/ off
- Plow up/down
- Paint Gun on/off
- Panic Buttons
- Passenger Counters
- Lights and Sirens on/ off
- Vactor on/ off
- Door open/ close

Other Serial Interfaces

The MDU can also interface to other serial devices to pull data from them including Roadwatch or Control Products (Road/Air temperature sensors), On-Board Cameras, and Engine Control Monitors (ECM).

Engine Control Module (Optional)

For OBD II interfaces, the InterFleet® solution offers engine control module integration to the SAE standard J1708/1587, J1939, and J1850 networks. Such information may include but not be limited to:

- Engine Speed
- RPM
- Coolant Temperature
- Fuel Level
- Trip Fuel
- Oil Pressure
- Battery Voltage

Engine Hours and Odometer are strictly dependent on the vehicles ability to provide this data. If the actuals are unavailable InterFleet® can calculate virtual Odometer and Engine Hours based on the reporting of the vehicle and GPS distance.

Mobile Data Terminal (Optional)

The InterFleet® hardware can integrate with a variety of Mobile Data Terminals facilitating communication between dispatch and the vehicle operators. InterFleet Inc. can provide the State with a user interface that allows dispatch to select from canned or free formed messages to send to a vehicle operator. The vehicle operator in turn can select from a variety of canned messages to communicate with dispatch. All messages shall be logged into a console for historical reference.

Swipe Card (Optional)

Driver ID systems include an ID card and a reader. Each truck will have a reader device installed on the dash and each driver will have a unique identification card. Driver Information shall automatically be transmitted with live vehicle updates. This feature extends the benefit of driver based reports.

Key Fob and Other Emergency Alarms (Optional)

To improve the safety of fleet operators, InterFleet® offers a number of emergency alarm capabilities to fit the needs of the State, from a simple panic button on the dash, to a key on an MDT, to a key fob alarm. The key fob emergency alarm allows vehicle operators to send an emergency alarm to dispatch from a remote location through the vehicle's system from up to 2,000 feet. By simply depressing the emergency button on the key fob a message through the MDU which in turn alerts dispatch. From there the proper authorities can be notified. This is currently being implemented on Parking Meter Cash Vehicles, Armored Car and Highway helper fleets as a security feature.

Alarms can also be generated automatically from the vehicle. In some armored car applications the truck itself can generate alarms based on certain parameters such as the vehicle moving with the door open, without the lightbar on or without the driver ID entered. Alarms can be prioritized and different actions taken by the system based on the State of West Virginia requirements. For example, Priority 1 - driver alarms based on key fob activation – authorities are automatically alerted vs. Priority 2 vehicle based alarm dispatchers are notified at the command center for follow-up.

Wireless Communications

The InterFleet® application was developed from the beginning to be flexible and to interface to a wide variety of wireless networks and not be tied to a specific wireless technology or vendor and can utilize the CDMA, EVDO, EDGE and HSDPA networks. InterFleet® has proven integrations with satellite based communications system and is currently testing various emerging Wi-Max applications in New York City.

Out of Coverage (Optional)

The current InterFleet® on-board GPS/AVL unit can be programmed to automatically detect when a cellular signal is lost. Should this occur the GPS/AVL unit will begin store data points until a connection is re-established. A 2GB SD Card supports this functionality.

Data Center

The InterFleet® data centre operates continuously 24 hours a day, 7 days a week, supporting the data collection of numerous vehicle based and user-defined requirements. All data will be stored at the InterFleet® data centre indefinitely. The data centre includes natural gas generator backup and 3 diverse paths to the internet and redundant hard drives. The State of West Virginia is also extended the option of storing data on their site in addition to the InterFleet® data centre. This can be done through quarterly issues of data discs, or via XML data feed.

Client Computers

The InterFleet® solution is a browser based client application. No special software or licenses are required on the client computer in order to run the complete InterFleet® application. Clients require only Internet Explorer 5.5 or greater and a high-speed internet connection for any personnel using the InterFleet® system. For redundancy, InterFleet® offers 2 distinct sites to access the data.

Administration

Password and access capabilities are configurable to meet the State of West Virginia's specific requirements. Privileges are based on assigned username and password. Logon will be approved only after authorization and authentication process of the entity/person is completed. User logon and password determines what vehicles are displayed on the user interface. Users can segment different subfleets with different logons so that only the vehicles that are under the users' responsibility are displayed on the user interface. Multiple authorized end-users will be able to access the information simultaneously from multiple locations.

Username and passwords entered will determine the functionality available on the user interface. The system allows an easy modification of the number of vehicles monitored. The equipment allows an easy modification of number of monitored characteristics and number of installed sensors per vehicle.

Warranty and Support

Hardware Warranty

All hardware is warranted for one year from date of system installation. Optional 2, 3 and 4 year extended warranty is available for valuable consideration.

Hardware/Software Support

As a first tier of support, InterFleet® trains its customer to diagnose basic problems with the systems such as cut or frayed power or antenna cables. If a problem cannot be diagnosed with basic troubleshooting, InterFleet Inc. has a 24 x 7 x 365 call center with a toll free number for issues. Troubleshooting and technical support are included in the InterFleet® Service fee. All issues are identified and promptly responded to ensuring minimal service interruption.

Purchasing Affidavit

Please see following page for the Purchasing Affidavit.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

VENDOR OWING A DEBT TO THE STATE:
West Virginia Code §5A-3-10a provides that: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

PUBLIC IMPROVEMENT CONTRACTS & DRUG-FREE WORKPLACE ACT:
If this is a solicitation for a public improvement construction contract, the vendor, by its signature below, affirms that it has a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code***. The vendor **must** make said affirmation with its bid submission. Further, public improvement construction contract may not be awarded to a vendor who does not have a written plan for a drug-free workplace policy in compliance with Article 1D, Chapter 21 of the ***West Virginia Code*** and who has not submitted that plan to the appropriate contracting authority in timely fashion. For a vendor who is a subcontractor, compliance with Section 5, Article 1D, Chapter 21 of the ***West Virginia Code*** may take place before their work on the public improvement is begun.

ANTITRUST:
In submitting a bid to any agency for the state of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the state of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the state of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the state of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.

I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership or person or entity submitting a bid for the same materials, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

LICENSING:
Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf.

Under penalty of law for false swearing (***West Virginia Code*** §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

Vendor's Name: INTERFLEET INC.
Authorized Signature: _____ Date: 02/06/09

Addendum Acknowledgement

Please see following page for the Addendum Acknowledgement

State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
639000029	4

ADDRESS CORRESPONDENCE TO ATTENTION OF:
MICHAEL AUSTIN
304-558-2402

VENDOR
RFQ COPY
TYPE NAME/ADDRESS HERE
INTERFLEET INC.
8 S TYSON AVENUE
FLORAL PARK, NY
11001-2017

SHIP TO
DIVISION OF HIGHWAYS
PLANNING DIVISION
BUILDING 5, ROOM A848
1900 KANAWHA BOULEVARD EAST
CHARLESTON, WV
25305-0430

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
01/22/2009				

BID OPENING DATE: 02/04/2009 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

NO. 1 .....✓

NO. 2 .....✓

NO. 3 .....

NO. 4 .....

NO. 5 .....

I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF TH ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.

VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.

.....
SIGNATURE

INTERFLEET INC.
COMPANY

02/06/09
DATE

REV. 11/96

NOTICE

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

NATURE | TELEPHONE | DATE

E | FEIN | ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

Cost Sheet

Please see the following for the Cost Sheet & Pricing Information.

Cost Sheet

Item	Estimated Quantity	Description	Unit Price	Amount
1.	100	**GPS Vehicle Tracking System** InterFleet MDU + Antenna Includes Installation	$630	$63,000
			Month	**Year**
2.	100	**Monthly Service Plan** (25 x unit) Cingular 3MB Plan (1 min. updates)	$2,500	$30,000

For more detailed pricing on Optional Integrations, please see the following page, "Project Budget Overview."

InterFleet INC.
REAL-TIME GPS/AVL

INTERFLEET PROJECT BUDGET OVERVIEW
FOR
STATE OF WEST VIRGINIA

Pricing quoted herein is exclusive of Associated Travel Costs and Applicable Taxes

Quantity	Item	Per Unit	Installation	Extended Cost
	AVL Hardware			
100	InterFleet GPS/AVL Unit & Tri Band Antenna	$ 495.00	$ 135.00	$63,000.00
	Messaging Terminals (Optional)			
1	Messaging Terminal *	$ 465.00	$ 75.00	$540.00
	Driver Identification Hardware (Optional)			
1	Driver Identification Hardware (Key Fob) *	$ 200.00	$ 100.00	$300.00
	** Driver identification can also be accomplished through Driver ID entry into Mobile Data Terminal*			
	Additional Sensory Interface (Optional)			
1	Spreader Controller Data Cable	$ 50.00	*waived*	$ 50.00
1	Plow Up/Down (Per Sensor)	$ 220.00	$ 225.00	$ 445.00
1	Wing Up/Down (Per Sensor)	$ 220.00	$ 225.00	$ 445.00
1	Light Bar Sensors	$ 60.00	$ 75.00	$ 135.00
1	PTO (Cycle Sensor)	$ 60.00	$ 75.00	$ 135.00
1	Air and Road Temperature Sensor	$ 60.00	$ 75.00	$ 135.00
1	Engine Control Monitors (Light and Medium Vehicles)	$ 175.00	$ 75.00	$ 250.00
1	Engine Control Monitors (Heavy Duty Vehicles)	$ 400.00	$ 75.00	$ 475.00
	Implementation			
1	InterFleet Website Set-Up	$ 1,500.00	N/A	$ 1,500.00
1	Onsite InterFleet Training (Per Session)	$ 1,000.00	N/A	$ 1,000.00
	InterFleet & Wireless Monthly Fee			
100	InterFleet Service & Cingular Wireless Plan *	$ 25.00	N/A	$2,500.00

** 3 MB Plan on Cingular Wireless which provides* ***1 Minute Updates***