iTrack
Tutorial and Guide

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1) Introduction

This Tutorial will walk you through initial login and the various capabilities of the iTrack system, including Mapping, Reporting and Administrative capabilities. The intention of this tutorial is to be a step-by-step guide, showing how each of the various features and capabilities of the software are accessed and exercised in order to learn how it can be of benefit to you and your business. You can follow along with iTrack Site at http://www.iTrack.com.sg

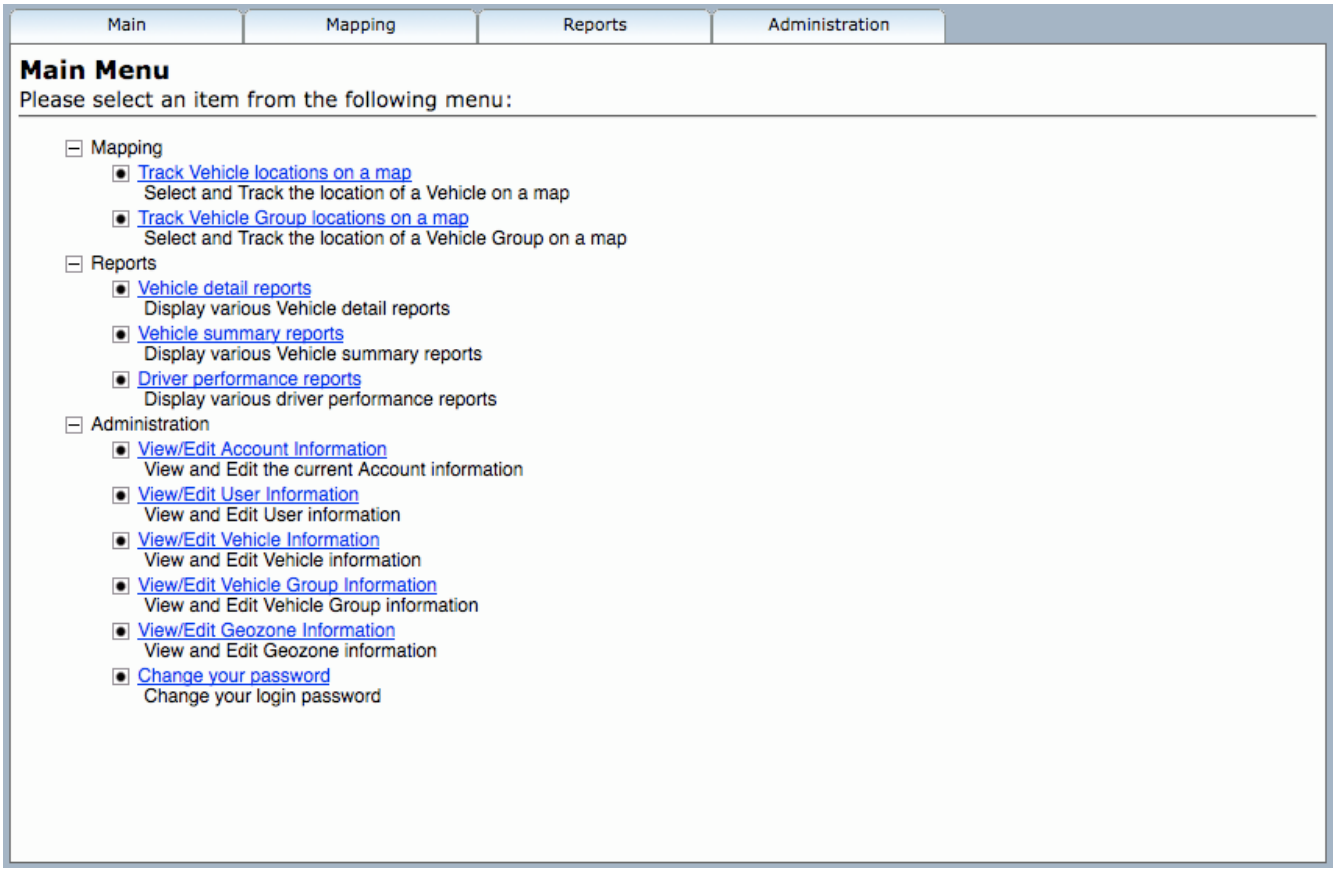
2) Login

The iTrack login tab can be found at the URL http://www.iTrack.com.sg
Select Login and you will be presented with a Login window as shown below:

Please Login

Login using your account, user and password provided. This will display the main navigation menu, shown on the next page.

3) Main Menu



As you can see, the functions are broken down into 3 main categories, **Mapping**, **Reports** and **Administration**. Each of the tabs corresponds to the appropriately named category of functions.

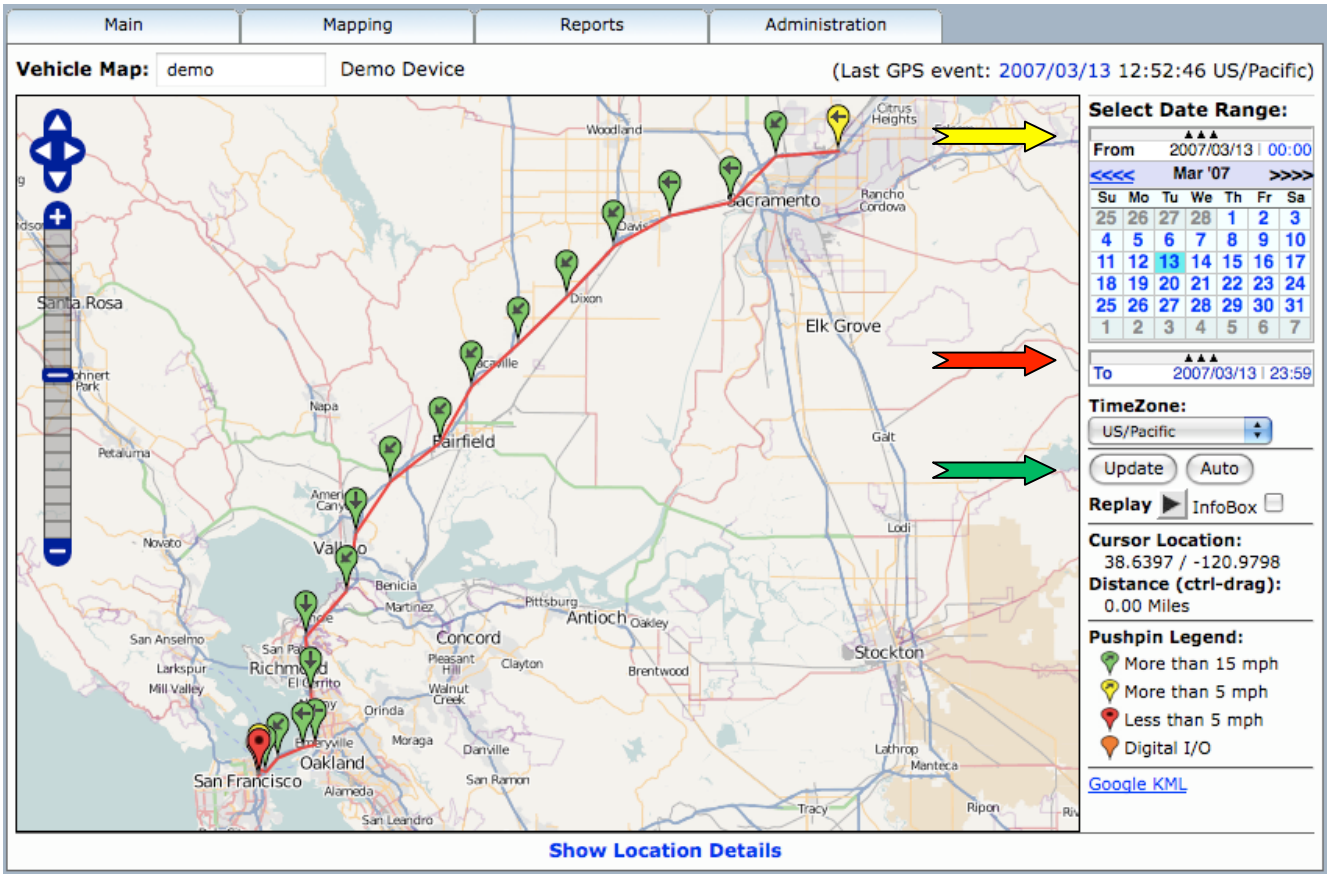
Navigation may be accomplished in one of two ways:
From the Main tab, select *Main Menu* and the screen displayed above will be presented. From there, you may select whichever section of the application is of interest.
Alternatively, you may use the individual tabs (Mapping, Reports, Administration) to select functions within those specific categories. For instance, from the *Reports* tab, you may select *Vehicle Detail Reports*, *Vehicle Summary Reports*, or *Driver Performance Reports*.

4) Mapping

4.1) Vehicle Map

Now that we know how to navigate, let's get started with the Mapping functionality. Click on the link for *Track Vehicle Locations on a Map* as highlighted above and the following screen will be displayed.

NOTE: Your map may be different depending on the date range selected.



Here we have the basic map view, with map **zoom** controls on the left.

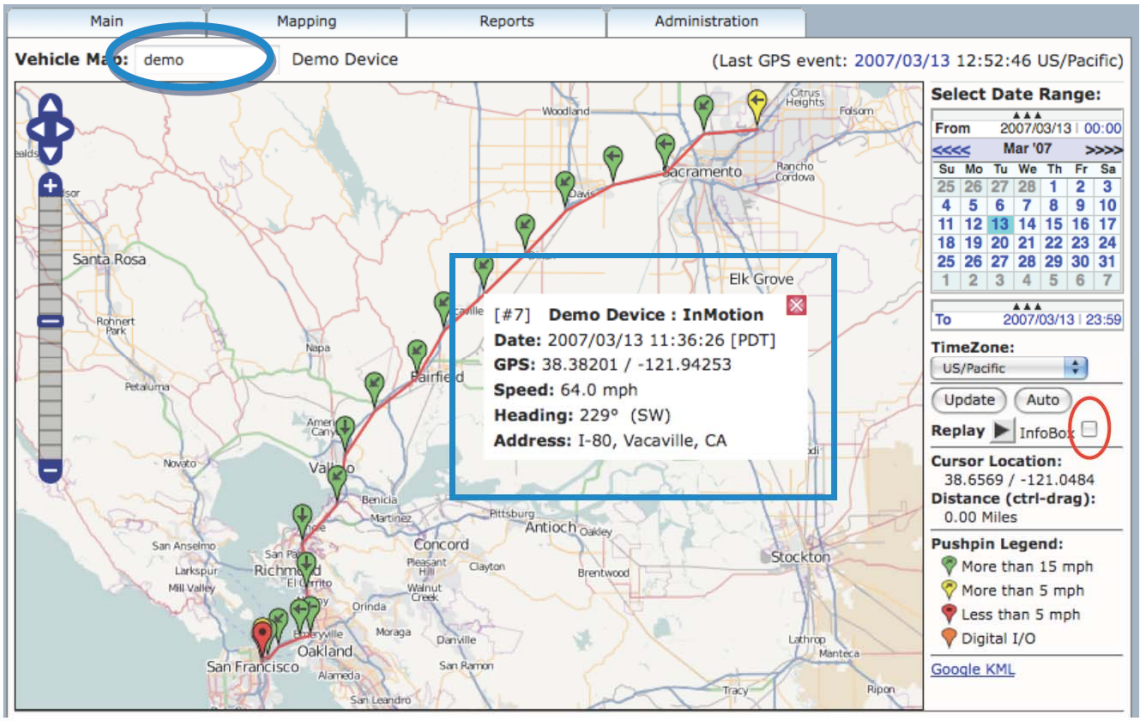
On the right hand side, we have the date range controls allowing you to select the period of time for which you'd like to review activity for a particular vehicle/asset. Currently displayed is the starting date or "From" calendar (**yellow** arrow). The right and left arrows just above the calendar will change the month and then you can select the particular day of the month you want. To select a different end date, click on the 3 triangles below the calendar (**red** arrow) and the "To" calendar will roll up to replace the "From" calendar. Follow the same procedure here to select your end date and then click the Update button (**green** arrow) to redraw the vehicle/asset history on the map for the selected date range.

Moving a bit further down the right hand side, you'll notice the word **Replay** -- click on the arrow

just to the right of it and it will begin a replay of the timeframe shown on the map, starting with the first point and continuing through until the final point has been plotted. This is a useful mechanism for quickly seeing the path a vehicle has taken throughout a chosen period of time.

One final note about the basic map display -- if you look in the white space just above the calendar on the right hand side, you'll notice a line that denotes the Last GPS event, telling you the last time this vehicle reported its position to the database. On the left hand side of that white space is a box with the asset's name. Clicking in the box brings up a list of assets, any of which can be chosen just by clicking on that asset name.

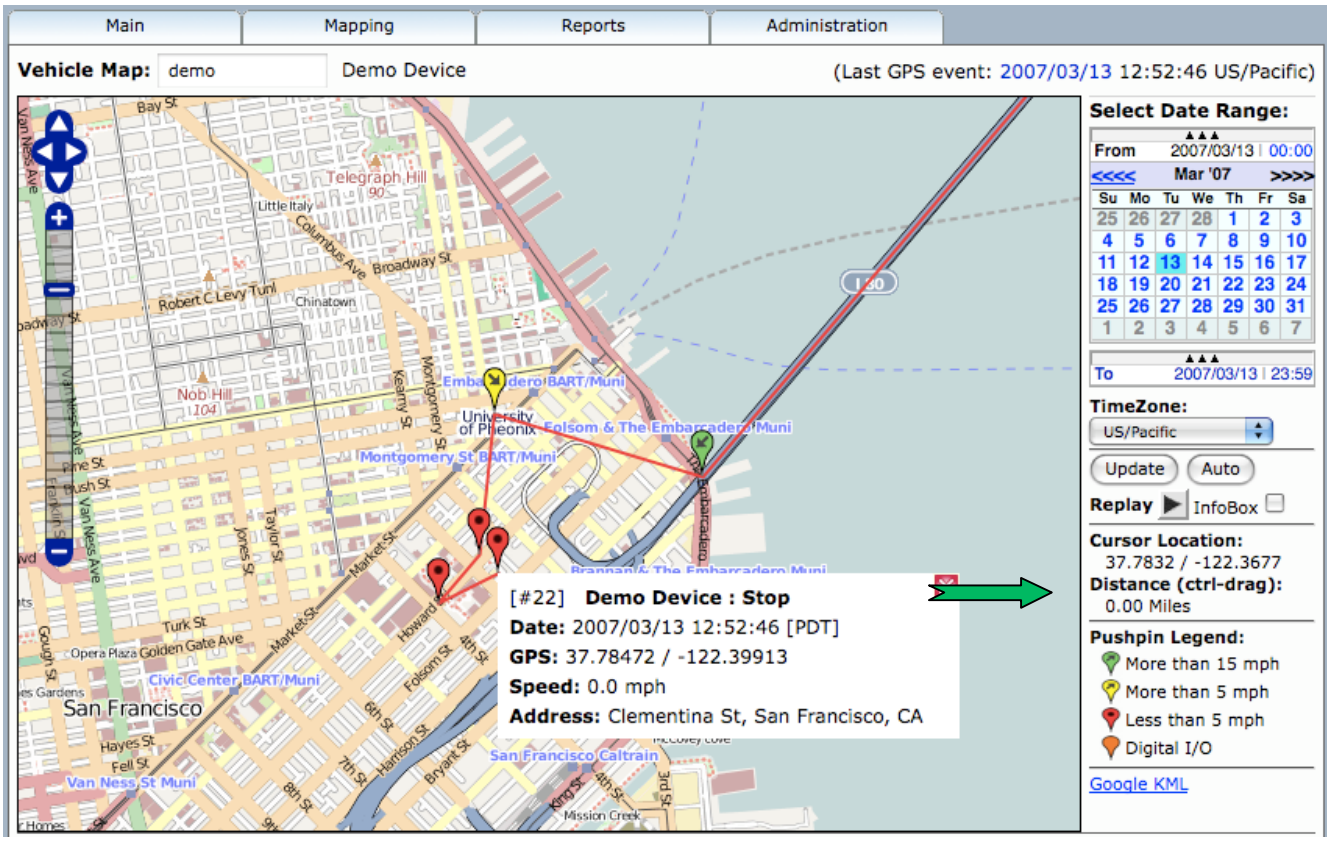
Zooming in on the data in the left hand portion of the map, you can see greater detail of the map and the individual pushpins.



Placing your cursor over any pushpin will bring up an InfoBox as shown above. The InfoBox includes by default the data point (#7), the device name (Demo), its status (*InMotion*), ***Date***, ***Time***, ***GPS Latitude/Longitude***, ***Speed***, ***Heading***, and ***Address*** (if available).

As an interesting side note, if you check the *InfoBox* checkbox before clicking the *Replay* button, then each Pushpin will have an InfoBox attached to it as the trail of Pushpins is painted on the map.

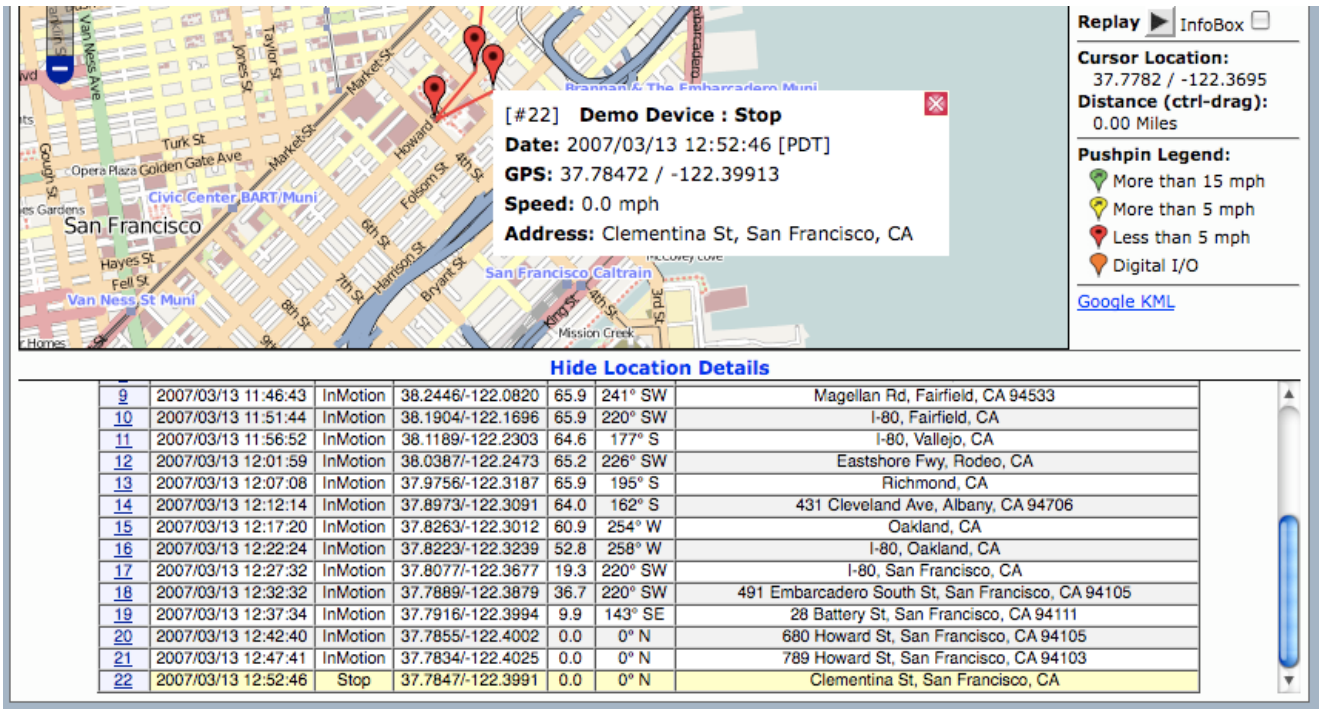
Note that on lower-left of the screen, there appears to be a red pushpin in San Francisco. Let's zoom in on that area.



Placing the cursor on the red pushpin, we see that the status is reported as "Stopped" and Speed is reported as zero. Additionally, here the system reports a reverse-geocoded street address.

Another useful feature of the mapping function is the ability to determine the straight-line distance between any two points on the map. This can be useful for determining the distance between a vehicle's current location and any known location on the map -- ideally sticking to straight lines along known roads to maximize accuracy. This function is utilized by clicking on the starting point, holding down the CTRL button and dragging the cursor to the end point, as denoted by the **green** arrow. Note that the distance is displayed here as well.

We have two ways of diving deeper into the details. The first is obviously to continue to zoom tighter into that portion of the map. The second is to utilize the Location Details, by clicking the *Show Location Details* link at the bottom of the map.

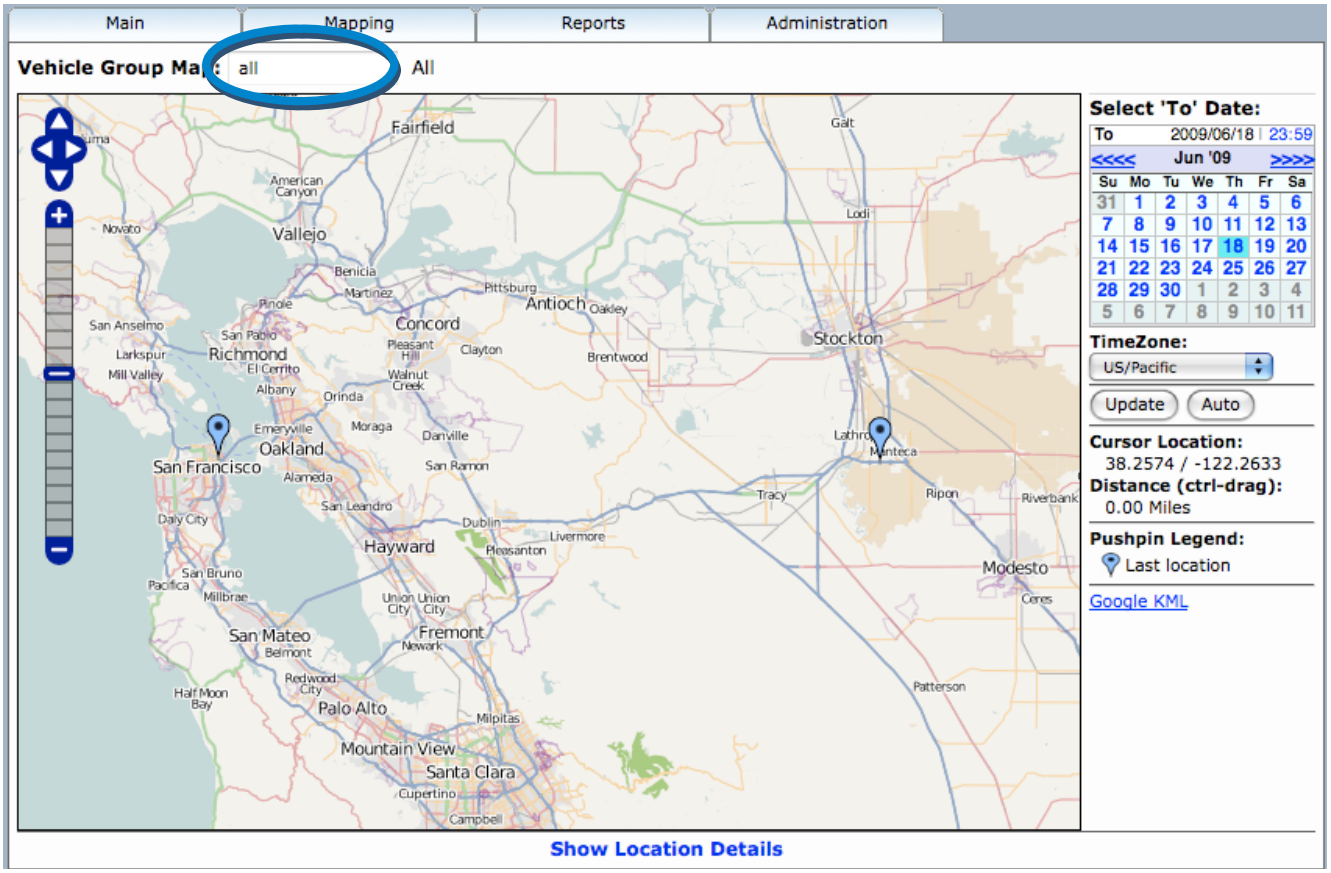


9	2007/03/13 11:46:43	InMotion	38.2446/-122.0820	65.9	241° SW	Magellan Rd, Fairfield, CA 94533
10	2007/03/13 11:51:44	InMotion	38.1904/-122.1696	65.9	220° SW	I-80, Fairfield, CA
11	2007/03/13 11:56:52	InMotion	38.1189/-122.2303	64.6	177° S	I-80, Vallejo, CA
12	2007/03/13 12:01:59	InMotion	38.0387/-122.2473	65.2	226° SW	Eastshore Fwy, Rodeo, CA
13	2007/03/13 12:07:08	InMotion	37.9756/-122.3187	65.9	195° S	Richmond, CA
14	2007/03/13 12:12:14	InMotion	37.8973/-122.3091	64.0	162° S	431 Cleveland Ave, Albany, CA 94706
15	2007/03/13 12:17:20	InMotion	37.8263/-122.3012	60.9	254° W	Oakland, CA
16	2007/03/13 12:22:24	InMotion	37.8223/-122.3239	52.8	258° W	I-80, Oakland, CA
17	2007/03/13 12:27:32	InMotion	37.8077/-122.3677	19.3	220° SW	I-80, San Francisco, CA
18	2007/03/13 12:32:32	InMotion	37.7889/-122.3879	36.7	220° SW	491 Embarcadero South St, San Francisco, CA 94105
19	2007/03/13 12:37:34	InMotion	37.7916/-122.3994	9.9	143° SE	28 Battery St, San Francisco, CA 94111
20	2007/03/13 12:42:40	InMotion	37.7855/-122.4002	0.0	0° N	680 Howard St, San Francisco, CA 94105
21	2007/03/13 12:47:41	InMotion	37.7834/-122.4025	0.0	0° N	789 Howard St, San Francisco, CA 94103
22	2007/03/13 12:52:46	Stop	37.7847/-122.3991	0.0	0° N	Clementina St, San Francisco, CA

The values for each of the columns are as follows (reading from left to right): ***Pin #***, ***Date/Time***, ***Event Status***, ***GPS (lat/long)***, ***Speed***, ***Heading***, and ***Address***. Reading down the Date/Time column, you can see that this vehicle/device is configured to report a fresh GPS reading to the server.

4.2) Vehicle Group Map

Now that we're done with the individual vehicle mapping capabilities, let's look at what can be done in terms of mapping group assets. From the *Mapping* tab, select *Vehicle Group Map* to display all the entire fleet.



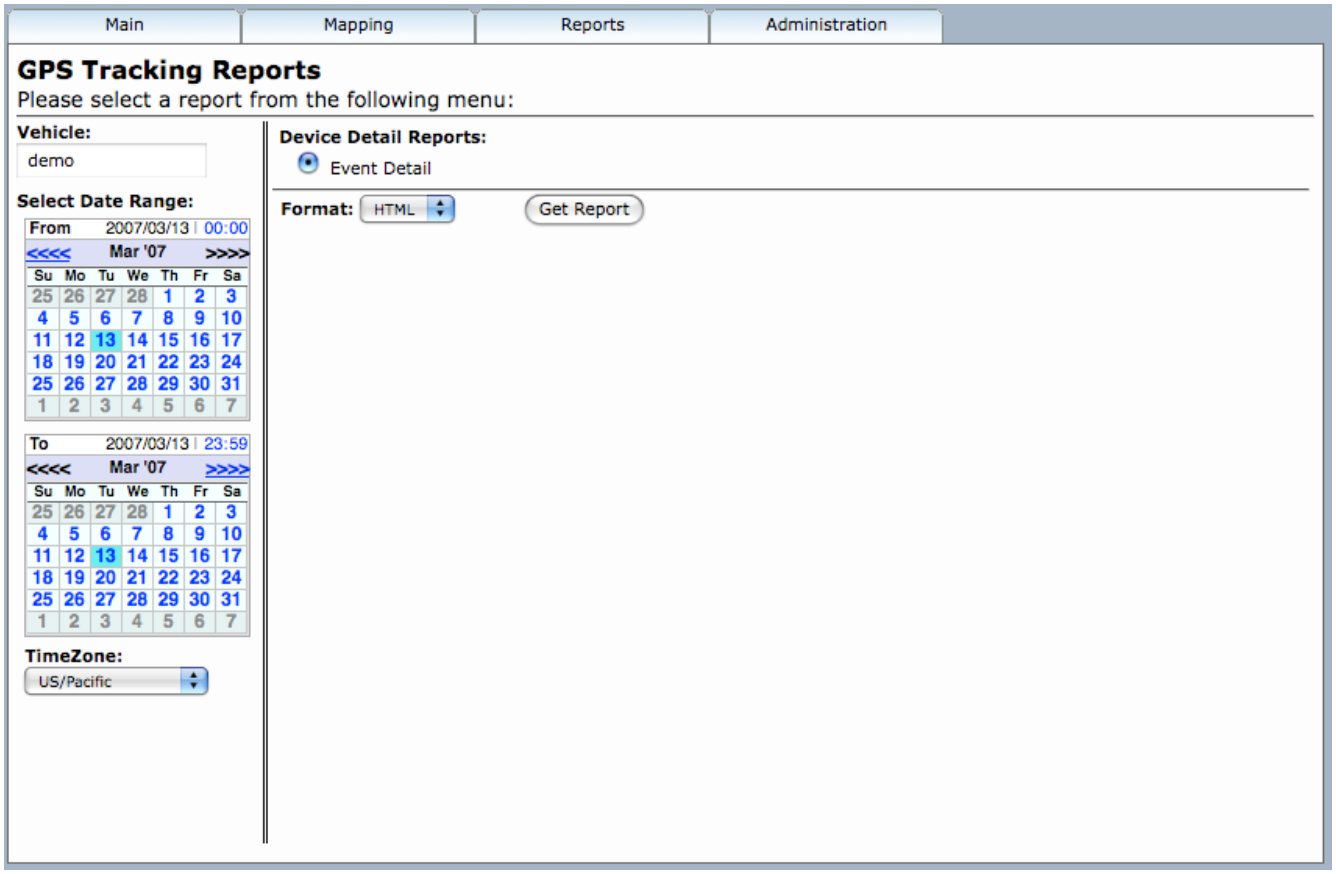
All the navigation controls are the same as the individual *Vehicle Map*, Fleet positions can be viewed in date-specific configurations by changing the calendar and detailed information on any asset can be accessed by placing the cursor over any "pushpin" to display.

5) Reporting

5.1) Detail Reports

Detail reports are vehicle or device specific and are structured to pull information from the database in pre-defined formats that are relevant to the type of report requested. It is important to understand that while the fields (columns) presented in the following reports are what we have found to be most useful for the majority of users.

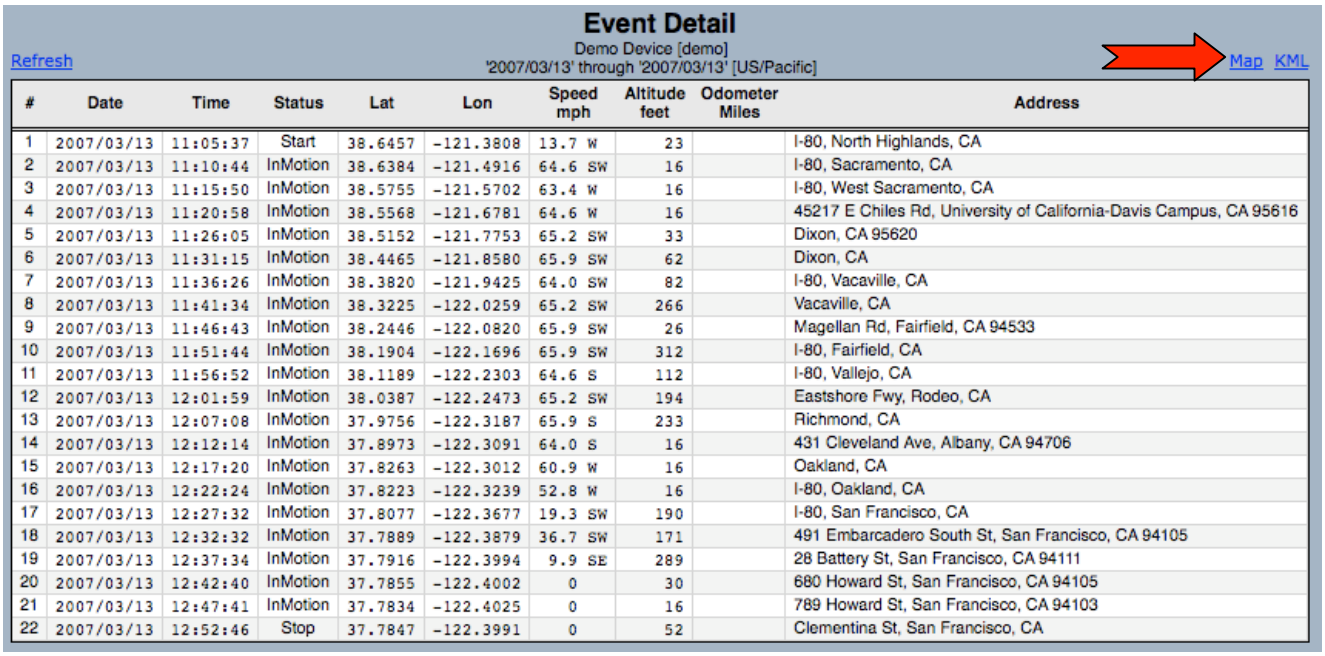
The *GPS Tracking Reports – Device Detail Reports* Screen can be accessed from the *Reports* tab and appears as shown below.



Here we have the same nature of controls as on the *Vehicle Map* screen, allowing us to specify for which vehicle we want the report, the date range for the report and then which report we want to see. This particular report menu shows only the *Event Detail* report.

Event Detail Report

All received events are reported in the *Event Detail* report. In this application, location is reported every 5 minutes and events that are reported are Start, Stop, and InMotion. In a more complex application, other Status indications might include Digital I/O State (such as ignition on/off), Dormancy or Terminal Arrival/Departure. Each event reports ***Time***, ***Date***, ***Status***, ***Latitude***, ***Longitude***, ***Speed***, ***Heading***, ***Altitude***, ***Odometer*** (if available), and ***Address***.



Event Detail

Refresh

Demo Device [demo]
'2007/03/13' through '2007/03/13' [US/Pacific]

Map KML

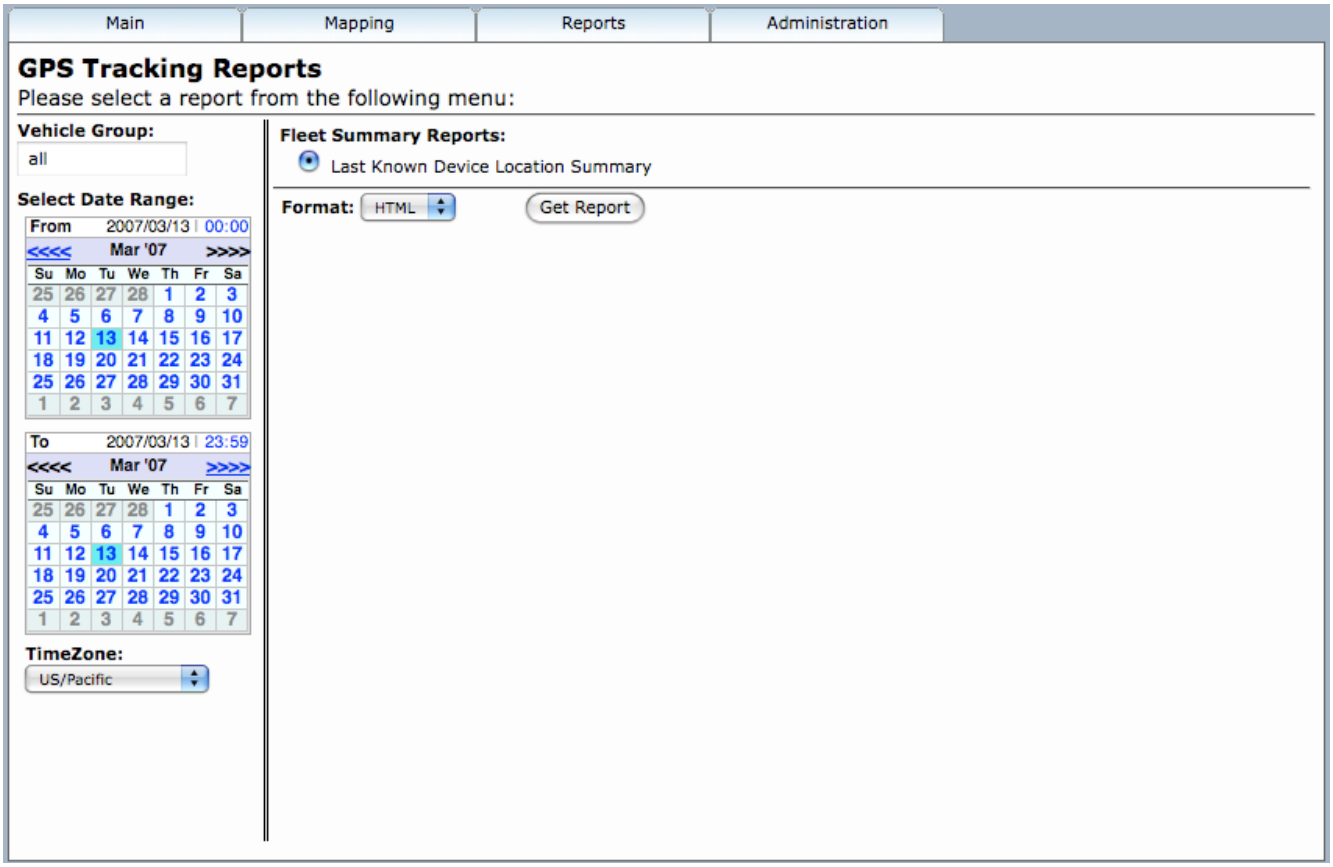
#	Date	Time	Status	Lat	Lon	Speed mph	Altitude feet	Odometer Miles	Address
1	2007/03/13	11:05:37	Start	38.6457	-121.3808	13.7 W	23		I-80, North Highlands, CA
2	2007/03/13	11:10:44	InMotion	38.6384	-121.4916	64.6 SW	16		I-80, Sacramento, CA
3	2007/03/13	11:15:50	InMotion	38.5755	-121.5702	63.4 W	16		I-80, West Sacramento, CA
4	2007/03/13	11:20:58	InMotion	38.5568	-121.6781	64.6 W	16		45217 E Chiles Rd, University of California-Davis Campus, CA 95616
5	2007/03/13	11:26:05	InMotion	38.5152	-121.7753	65.2 SW	33		Dixon, CA 95620
6	2007/03/13	11:31:15	InMotion	38.4465	-121.8580	65.9 SW	62		Dixon, CA
7	2007/03/13	11:36:26	InMotion	38.3820	-121.9425	64.0 SW	82		I-80, Vacaville, CA
8	2007/03/13	11:41:34	InMotion	38.3225	-122.0259	65.2 SW	266		Vacaville, CA
9	2007/03/13	11:46:43	InMotion	38.2446	-122.0820	65.9 SW	26		Magellan Rd, Fairfield, CA 94533
10	2007/03/13	11:51:44	InMotion	38.1904	-122.1696	65.9 SW	312		I-80, Fairfield, CA
11	2007/03/13	11:56:52	InMotion	38.1189	-122.2303	64.6 S	112		I-80, Vallejo, CA
12	2007/03/13	12:01:59	InMotion	38.0387	-122.2473	65.2 SW	194		Eastshore Fwy, Rodeo, CA
13	2007/03/13	12:07:08	InMotion	37.9756	-122.3187	65.9 S	233		Richmond, CA
14	2007/03/13	12:12:14	InMotion	37.8973	-122.3091	64.0 S	16		431 Cleveland Ave, Albany, CA 94706
15	2007/03/13	12:17:20	InMotion	37.8263	-122.3012	60.9 W	16		Oakland, CA
16	2007/03/13	12:22:24	InMotion	37.8223	-122.3239	52.8 W	16		I-80, Oakland, CA
17	2007/03/13	12:27:32	InMotion	37.8077	-122.3677	19.3 SW	190		I-80, San Francisco, CA
18	2007/03/13	12:32:32	InMotion	37.7889	-122.3879	36.7 SW	171		491 Embarcadero South St, San Francisco, CA 94105
19	2007/03/13	12:37:34	InMotion	37.7916	-122.3994	9.9 SE	289		28 Battery St, San Francisco, CA 94111
20	2007/03/13	12:42:40	InMotion	37.7855	-122.4002	0	30		680 Howard St, San Francisco, CA 94105
21	2007/03/13	12:47:41	InMotion	37.7834	-122.4025	0	16		789 Howard St, San Francisco, CA 94103
22	2007/03/13	12:52:46	Stop	37.7847	-122.3991	0	52		Clementina St, San Francisco, CA

You'll notice the small word *Map* (**red** arrow) just above the upper right corner of the report. Clicking on this link will launch a sub-window with a *Vehicle Map*, displaying all of the points shown in the *Event Detail* report.

5.2) Summary Reports

Unlike *Device Detail Reports*, *Fleet Summary Reports* are focused for the entire fleet. They are not relevant only to a specific vehicle, as they present information that is only useful when viewed across a group of vehicles or assets.

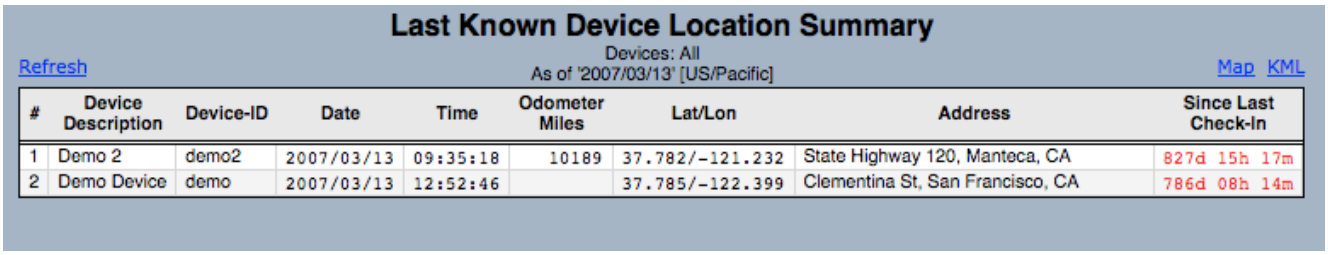
The *GPS Tracking Reports – Fleet Summary Reports* Screen can be accessed from the *Reports* tab and appears as shown below.



The structure of the report selection mechanism here is identical to that found on the top level *Device Detail Report* screen. The date selector is the same as what we've seen throughout all of these screen shots and then there's the list of available reports off to the right. Note just above the calendars is the Group Selector field, select all.

Last Known Device Location Summary

The *Last Known Device Summary* is designed to present the user with the simple report with current status on each of the vehicles in the selected group. Here the important information contained in the report is ***Device Description***, ***Device-ID***, ***Date***, ***Time***, ***Odometer Miles*** (if available), ***Latitude***, ***Longitude***, ***Address*** and time ***Since Last Check-In***.



Last Known Device Location Summary

Refresh

Devices: All
As of '2007/03/13' [US/Pacific]

Map KML

#	Device Description	Device-ID	Date	Time	Odometer Miles	Lat/Lon	Address	Since Last Check-In
1	Demo 2	demo2	2007/03/13	09:35:18	10189	37.782/-121.232	State Highway 120, Manteca, CA	827d 15h 17m
2	Demo Device	demo	2007/03/13	12:52:46		37.785/-122.399	Clementina St, San Francisco, CA	786d 08h 14m

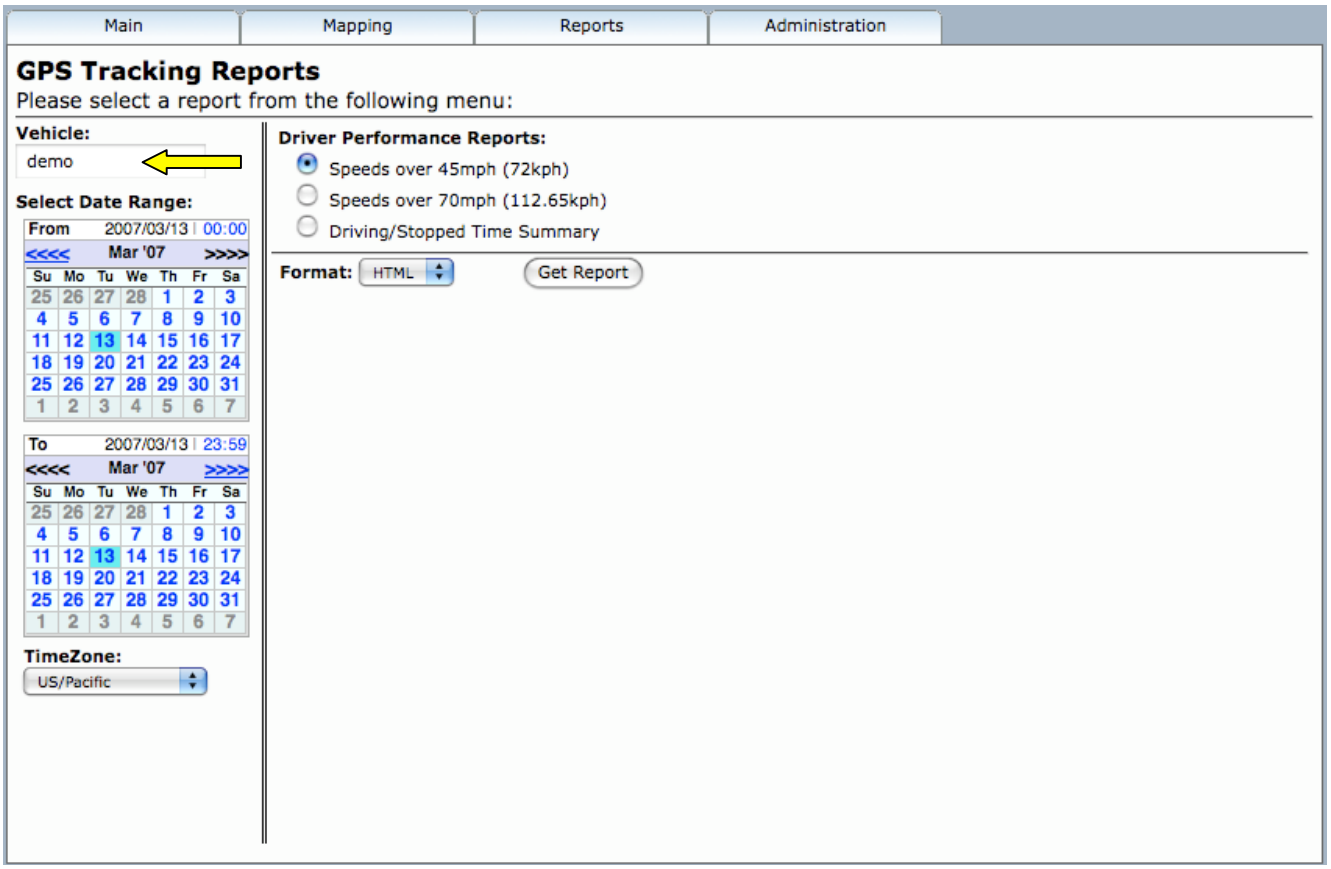
The ***Since Last Check*** In field is the amount of time that has passed since the device has last checked in with the server. This may not necessarily mean that this is the time the device last sent an event, only the last time the device communicated with the server (at which time it may, or may not have sent an actual event).

As was the case with the *Device Detail Reports*, we can click on the Map link and get a pop-up sub-window that will display each of these vehicles on a *Vehicle Group Map*.

5.3) Performance Reports

The primary focus of *Driver Performance Reports* is to provide the fleet manager with meaningful information that pertains to the utilization of his/her fleet assets. Are the vehicles being driven in a safe manner (i.e. adhering to relevant speed limits)? Are vehicles being used effectively or is excessive time being taken at stops? These are the types of questions that can be answered by reviewing the information available in the *Driver Performance Reports*.

The *GPS Tracking Reports – Driver Performance Reports* Screen can be accessed from the *Reports* tab and appears as shown below.



The date selector is the same as what we've seen throughout all of these screen shots and then there's the list of available reports off to the right. Note just above the calendars is the Vehicle selector field (**yellow** arrow), where the individual vehicle or asset can be selected.

As before, we'll start at the top of the list on *Speeds over 45mph (72kph)* and step through the list.

Speeds over 45mph (72kph)

The *Speeds over 45mph (72kph)* report is designed to give the fleet manager information on a vehicle basis, showing if, when and where that specific vehicle exceeded the defined speed threshold. It should be noted that the speed threshold is modifiable to whatever level is deemed relevant to the end user's needs. The report presents ***Date***, ***Time***, ***Status***, ***Latitude***, ***Longitude***, ***Speed***, ***Heading*** and ***Address*** in the tabular format.

Speeds over 45mph (72kph)

Refresh

Demo Device [demo]
'2007/03/13' through '2007/03/13' [US/Pacific]

Map KML

#	Date	Time	Status	Lat	Lon	Speed mph	Address
1	2007/03/13	11:10:44	InMotion	38.638	-121.492	65 SW	I-80, Sacramento, CA
2	2007/03/13	11:15:50	InMotion	38.575	-121.570	63 W	I-80, West Sacramento, CA
3	2007/03/13	11:20:58	InMotion	38.557	-121.678	65 W	45217 E Chiles Rd, University of California-Davis Campus, CA 95616
4	2007/03/13	11:26:05	InMotion	38.515	-121.775	65 SW	Dixon, CA 95620
5	2007/03/13	11:31:15	InMotion	38.447	-121.858	66 SW	Dixon, CA
6	2007/03/13	11:36:26	InMotion	38.382	-121.943	64 SW	I-80, Vacaville, CA
7	2007/03/13	11:41:34	InMotion	38.323	-122.026	65 SW	Vacaville, CA
8	2007/03/13	11:46:43	InMotion	38.245	-122.082	66 SW	Magellan Rd, Fairfield, CA 94533
9	2007/03/13	11:51:44	InMotion	38.190	-122.170	66 SW	I-80, Fairfield, CA
10	2007/03/13	11:56:52	InMotion	38.119	-122.230	65 S	I-80, Vallejo, CA
11	2007/03/13	12:01:59	InMotion	38.039	-122.247	65 SW	Eastshore Fwy, Rodeo, CA
12	2007/03/13	12:07:08	InMotion	37.976	-122.319	66 S	Richmond, CA
13	2007/03/13	12:12:14	InMotion	37.897	-122.309	64 S	431 Cleveland Ave, Albany, CA 94706
14	2007/03/13	12:17:20	InMotion	37.826	-122.301	61 W	Oakland, CA
15	2007/03/13	12:22:24	InMotion	37.822	-122.324	53 W	I-80, Oakland, CA

Here we can see each instance when the selected vehicle exceeded the 45mph threshold. The next report is similar in nature, with the same structure and fields reported. The only difference is that the speed threshold.

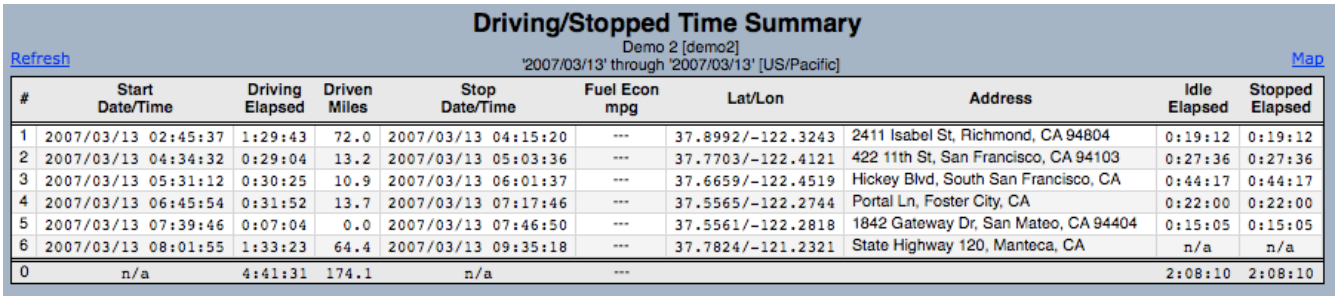
Speeds over 70mph (112.65kph)

As you can tell from the above report, there are no speeds in excess of 70mph, so this report contains no events.

Both of these speed violation reports are useful for determining if a specific vehicle is being regularly operated in excess of safe speeds or speeds deemed appropriate according to company policy. With concrete data substantiating the behavior, it is then possible to effect corrective action with the driver BEFORE an incident occurs on the road.

Driving/Stopped Time Summary

For the purposes of this report, we have selected Device “demo2” as it has made several stops during its deliveries. There is a lot of information to absorb in the *Driving/Stopped Time Summary* report. It is designed to give the fleet manager detailed information (on a vehicle basis), showing how much time was spent driving, how long the transit time was between stops and how much distance was covered. Additionally, the report shows how much time the vehicle spent stopped, what the duration of the stops were and how many stops there were and what the locations were. The fields presented in the report are ***Start Date***, ***Start Time***, ***Driving Elapsed***, ***Miles Driven***, ***Stop Date***, ***Stop Time***, ***Fuel Economy*** (if equipped), ***Latitude***, ***Longitude***, ***Address***, ***Idle Elapsed time***, and ***Stopped Elapsed time***.



Driving/Stopped Time Summary

Refresh — Map

Demo 2 [demo2]
'2007/03/13' through '2007/03/13' [US/Pacific]

#	Start Date/Time	Driving Elapsed	Driven Miles	Stop Date/Time	Fuel Econ mpg	Lat/Lon	Address	Idle Elapsed	Stopped Elapsed
1	2007/03/13 02:45:37	1:29:43	72.0	2007/03/13 04:15:20	---	37.8992/-122.3243	2411 Isabel St, Richmond, CA 94804	0:19:12	0:19:12
2	2007/03/13 04:34:32	0:29:04	13.2	2007/03/13 05:03:36	---	37.7703/-122.4121	422 11th St, San Francisco, CA 94103	0:27:36	0:27:36
3	2007/03/13 05:31:12	0:30:25	10.9	2007/03/13 06:01:37	---	37.6659/-122.4519	Hickey Blvd, South San Francisco, CA	0:44:17	0:44:17
4	2007/03/13 06:45:54	0:31:52	13.7	2007/03/13 07:17:46	---	37.5565/-122.2744	Portal Ln, Foster City, CA	0:22:00	0:22:00
5	2007/03/13 07:39:46	0:07:04	0.0	2007/03/13 07:46:50	---	37.5561/-122.2818	1842 Gateway Dr, San Mateo, CA 94404	0:15:05	0:15:05
6	2007/03/13 08:01:55	1:33:23	64.4	2007/03/13 09:35:18	---	37.7824/-121.2321	State Highway 120, Manteca, CA	n/a	n/a
0	n/a	4:41:31	174.1	n/a	---			2:08:10	2:08:10

This report can provide full detail on time spent driving, and time spent at stops. This allows the fleet manager to pinpoint where stops are taking longer than necessary or unnecessary stops are being made. Additionally, by reviewing drive time and distance between known destinations, it can be determined whether vehicles are being used in the most efficient manner.

The last 2 columns in the report are ***Idle Elapsed time*** and ***Stopped Elapsed time***. Unless the in-vehicle device is equipped with ignition sense, the values in these two columns will always be the same. But with the ability to determine that the ignition is on while speed is zero, this report can also provide the fleet manager with valuable data on excessive idling. Excessive idling can be a large cost center, frequently unknown but easy to correct with the appropriate data available. This is just one more piece of information the *Driving/Stopped Time Summary* provides.

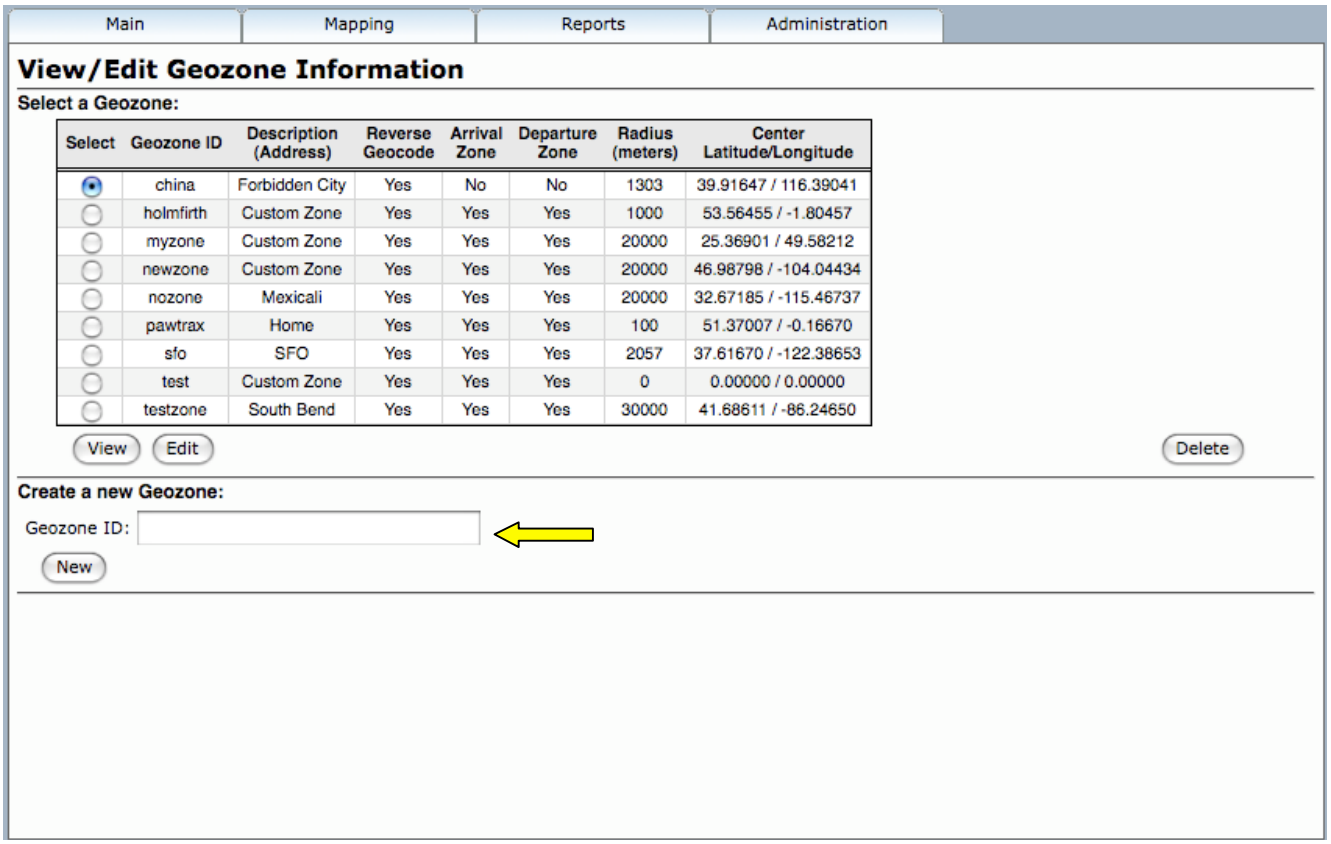
6) Administration

6.1) Geozone Admin

One of the more powerful administrative tools is the *Geozone Admin* function. A Geozone can be defined around any reference location. Definition is simple and once complete, movement of vehicles in and out of that Geozone will populate the *Event Detail* report with the specific description of the Geozone used a custom reverse geocoded address. By selecting *Geozone Admin* from the *Administration* menu, the ***View/Edit Geozone Information*** screen will be displayed, as shown below.

In the table below, the following pieces of information are displayed -- ***Geozone ID, Description (Address), Reverse Geocode, Arrival Zone, Departure Zone, Radius (meters)*** and ***Center*** in ***Latitude/Longitude***.
The information in this table contains the following fields:

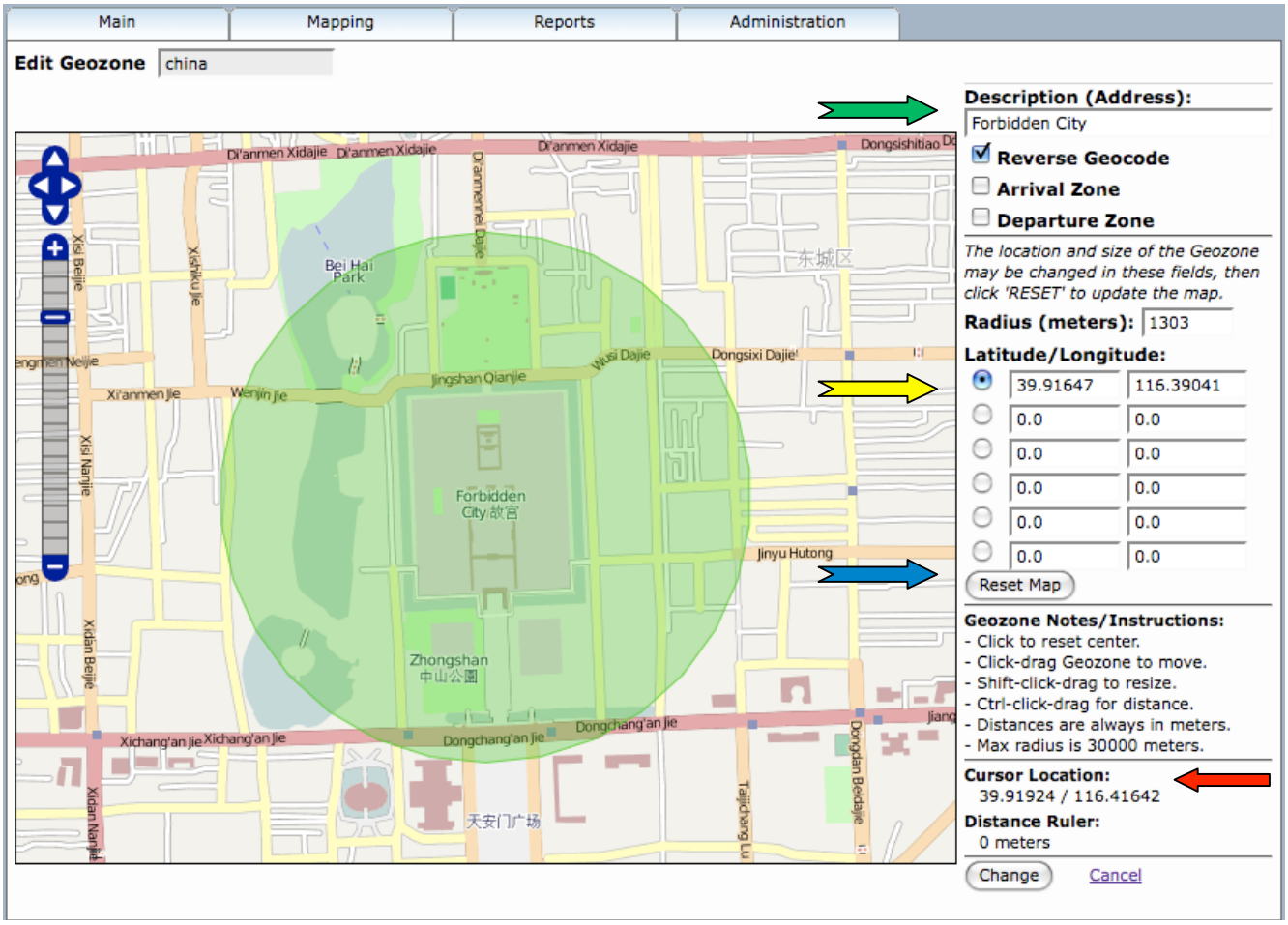
- ***Reverse Geocode*** indicates that reverse geocoding is turned on if set to 'Yes'. Reverse geocoding is used to map a GPS coordinate to a known street address.
- ***Arrival Zone*** set to 'Yes' indicates that an Arrival Event will be created when a vehicle enters that Geozone (requires additional configuration and support).
- ***Departure Zone*** set to 'Yes' indicates that a Departure Event will be created when vehicle exits that Geozone (requires additional configuration and support).
- ***Radius*** and ***Center*** define the position and size of each of the Geozones that are currently defined.



If new Geozones need to be created, that is done with the field in the middle of the page (**yellow** arrow) under *Create a new Geozone*. Just make sure to keep the ID confined to a single word with

no capital letters or special characters.

Select a Geozone and then click the *Edit* button to display the edit screen.



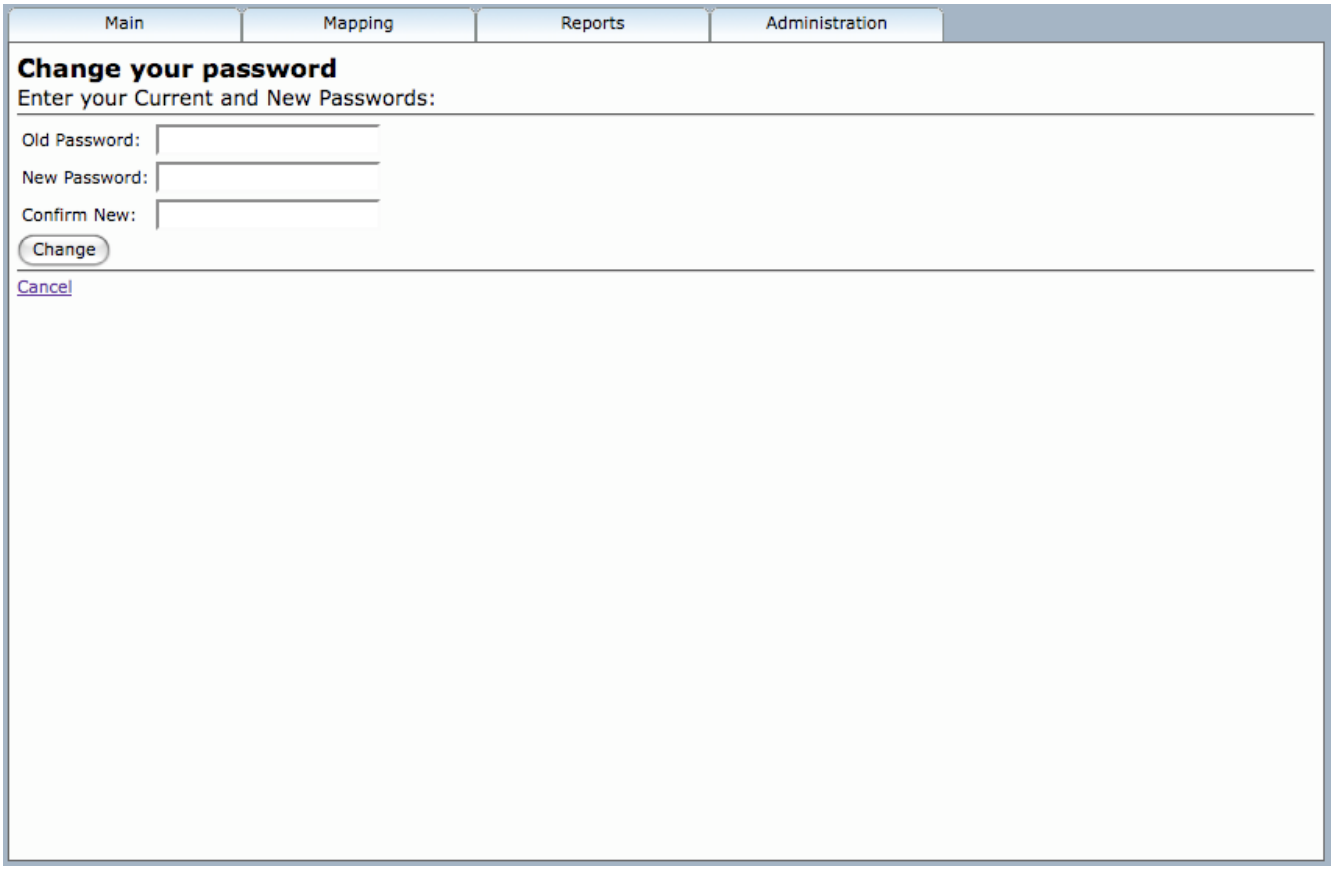
This shows the Geozone edit window showing a sample location with a point-radius Geozone. Using the map zoom controls, you can pinpoint the location of interest where you would like to center your Geozone. When the cursor is centered over the ideal location, there will be a Latitude/Longitude reading of that location right under the Cursor Location label (**red** arrow). The center of the Geozone will be indicated in the selected Latitude/Longitude row (**yellow** arrow).

Next we need to define the radius for the Geozone, and in this case we've chosen 1303 meters. If any field values are manually changed, we need to click the *Reset Map* button (**blue** arrow) to update the Geozone and map on the screen. At this point, you'll see the Geozone display as a green circle (as shown above), centered on the Latitude/Longitude coordinate you specified and with your defined radius. Before finishing the edit function, make sure to give your Geozone a text description in the field at the upper right hand corner of the edit window (**green** arrow). This description will be used as the custom reverse-geocoded address when vehicle are inside this Geozone.

NOTE: Just below the *Reset Map* button, there is a set of instructions to make positioning and sizing of your Geozone just a little bit easier.

When all edits are complete, click the *Change* button to save your changes. As before, the *Cancel* link will cancel any edits you have made.

6.2) Password Admin

The simplest and most familiar of all administrative functions is setting and changing of passwords. Password Admin is where that is performed and is very straightforward. By selecting *Password Admin* from the *Administration* menu, the ***Change your password*** screen will be displayed, as shown below.

Enter your old password in the first field and then your new password in each of the next two fields. When done, click *Change* to save your changes and you're done.