Appendix to Roadway Striping Productivity Data Analysis for INDOT Greenfield and Crawfordsville Districts, SPR-3650

User Manual for Smart Hub Website
1. Login to Website

Access to the GT Website is provided with the following link:

http://login.gaugetelematics.com/Account/LogOn?ReturnUrl=%2f

When the above link is clicked on, the following window pops up:

![Login Window](image1.png)

This is the access window to the GT Website; any user needs to input his/her user name and password to sign into the website.

When signed in to the website, the following window pop ups:

![Default Window](image2.png)

This is the default window of GT website. At the far left corner of the website, starting from left to right, the following user tabs appear: a) Dashboard, b) Reports, c) Assets, d) Maintenance, e) Map, f) Sites, g) Tasks, h) Company, i) My Info and j) Log out. These are the main user tabs for Gauge Smart Hub servers.
2. GT Website User Tabs

2.1 Dashboard

When dashboard tab is clicked on, the following window pops up. This is the place where customized dashboards can be created. In order to create a new dashboard, users need to click on the drop down menu, which is just below the dashboard tab, and choose “New Dashboard” sub-tab.

Once the new dashboard is created, adding gadgets allows the user to customize their dashboard. In order to start adding gadgets, the “+” icon, which is at the top right corner of the website next to the “Options” tab, should be clicked on.

When “+” tab is clicked on, the following window pops up. This is the window which has different gadgets: 1) Your Asset’s Current Location, 2) Asset Mix, 3) Top Speeders, 4) Your Asset List, 5) On-Road Total Miles, 6) On-Road Drive Time, 7) Off-Road Idle, 8) Off-Road Utilization, 9) Off-Road Usage Comparison, 10) Off-Road Asset Ranking, 11) Off-Road Total Miles, 12) Alerts, 13) Battery Health, 14) Service Due, and etc.

- The 1st gadget is the “Your Assets’ Current Location” gadget

Gadgets can be added to dashboards by dragging down to dashboard area. For example, when “Your Assets’ Current Location” gadget is dragged down to the new dashboard area, the following window pops up:
The above website screenshot is another screenshot of “Your Asset’s Current Location” gadget. You can see the location of all your assets in a Google generated map. There is an option at the bottom right corner of this gadget called “Full Map”. When that option is clicked on, GT server takes the user to the “Map” main tab.

- The 2nd gadget is the “Asset Types” gadget
When this gadget is dragged down to the new dashboard area, the following window pops up.

This is the window where the number and types of assets can be seen in a pie chart graph. There is an option at the bottom right corner of this gadget called “Reports”. This option takes the user to the “Reports” main tab.

- The 3rd gadget is the “Top Speeders” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.
This is the window where average and top speed of each asset can be seen in a bar chart. There are two options in this gadget. The first one is the “Date Option” which is located at the top left corner of the gadget. This option lets the user see their assets’ average and top speed for a desired period of time. Please see the below figure for date option details.

The second one is the “Reports” option which is located at the far right bottom corner of the gadget. This option takes the user to the “Reports” main tab.

- The 4th gadget is the “Your Asset List” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.
This is the window where all assets can be seen in a list. There are two options in this gadget. The first one is the “Asset Categories” option, which is located at the top left corner of the gadget. This option lets users choose an asset category they would like to see. Please see the below figure for details of asset category options.

The second one is the “Assets” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Assets” main tab.

- The 5th gadget is the “Weather” gadget ➔ Currently disabled.
- The 6th gadget is the “On-Road Total Miles” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.
This is the window where all on-road assets’ total mileages can be seen in a bar chart for a given period of time. As seen on above window, there are two options in this gadget. The first one is the date option which is located at the top left corner of the gadget. This option lets users see their assets’ total mileages for a desired period of time. For example, during last year, Crawfordsville Stake Bed CC traveled 3040.42 miles. Please see the below figure for details of the date option.

The second one is “Reports” option which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 7th gadget is the “On-Road Drive Time” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.

This is the window where all on-road assets’ total drive time can be seen in a bar chart for a given period of time. There are two options in this gadget. The first one is the date option, which
is located at the top left corner of the gadget. This option lets the user see their assets’ total drive time for a desired period of time. For example, during last year, Crawfordsville Dump Truck was used 6517.50 hours. Please see the below figure for details of date option.

The second one is located at the bottom right corner of the gadget, called “Reports”. This option takes the user to the “Reports” main tab.

- The 8th gadget is the “Off-Road Idle” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.

Idling data from the final JTRP (SPR-3650) – INDOT PROJECT report does not match with the values from the idling gadget tool on the website because the idling sensors were not configured at the beginning of the 2012 striping season to collect specific idling data in conjunction with striping operation. The current idling data in Task 3 of the final report is based on an algorithm that calculates from various driving distances and parking times.
Regarding the above idling gadget window, this is the window where all off-road assets’ total idle time can be seen in a bar chart for a given period of time. There are two groups of options in this gadget. The first one is located in the top left corner of the gadget. This group has 4 sub-groups which are namely; date option, hours or percentage option, category option and sites option. This group of options lets users see their assets’ total idle time for a desired time period, site and category. The second one is the “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 9th gadget is the “Off-Road Utilization” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.

Utilization data from the final JTRP (SPR-3650) – INDOT PROJECT report does not match with the values from the off-road utilization gadget tool because the final report utilization calculations are based on total number of operation days during one striping season; however, data from this gadget is based on operational hours per day.

Regarding the above off-road utilization gadget window, this is the window where all off road assets’ total utilization versus idle time can be seen in a bar chart for a given period of time. There are two groups of options in this gadget as well. The first one is located at the top left corner of the gadget. This group has 4 sub-groups which are namely; date option, hours or percentage option, category option and sites option. This group of options lets the user see their assets’ total asset utilization time versus idle time for a desired time period, site and category. The second one is the “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 10th gadget is the “Off-Road Usage Comparison” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.
This is the window where all off-road assets’ total usage comparison graphs are shown for a given period of time. There are two groups of options in this gadget. The first one is located at the top left corner of the gadget. This group has 3 sub-categories which are namely; date option, hours or percentage option and sites option. This group of options lets the user see usage comparison of each asset for a desired time period, site and hours. The second one is the “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 11th gadget is the “Off-Road Asset Ranking” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.

This is the window where overall off-road vehicle utilization summary is presented in descending order for a given period of time. There are two groups of options in this gadget. The first one is located at the top left corner of the gadget. This group has 3 sub-categories which are namely; date option, category option and sites option. This group of options lets the user see an overall utilization summary of each asset for a desired time period, site and hours. The second
one is the “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 12th gadget is the “Off-Road Total Miles” gadget
When this gadget is dragged down to the new dashboard area, the following window pops up.

![Off-Road Total Miles](image)

This is the window where total mileages of all off-road vehicles are summarized in a bar chart for a given period of time. There are two options in this gadget. The first one is located at the top left corner of the gadget. This option lets user see overall mileage summary of each asset for a desired time period. The second one is “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 13th gadget is the “Alerts” gadget
When this gadget is dragged down to the new dashboard area, the following window pops up.

![Alerts](image)
This is the window where different vehicle alert types are summarized in a list form. There are two groups of options at this gadget. The first one is located at the top left corner of the gadget. This group has 4 sub-groups which are namely; asset type option, date option, alert type option and sites option. This group of option lets the user see all alerts from a selected asset for a desired time period, site and hours. The second one is the “Reports” option which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 14th gadget is the “Battery Health” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up.

![Battery Health Window](image)

This is the window where current battery conditions of all vehicles are summarized in a list. There are two options in this gadget. The first one is the “Category” option, which is located at the top left corner of the gadget. This option lets the user see the battery health condition of any asset chosen. Please see the below figure for details of the category option.

![Battery Health Category](image)
The second one is the “Reports” option, which is located at the bottom right corner of the gadget. This option takes the user to the “Reports” main tab.

- The 15th gadget is the “Service Due” gadget

When this gadget is dragged down to the new dashboard area, the following window pops up. This is the window where service due dates of all assets are summarized in a list.

![Service Due Window]

### 2.2 Reports

When the reports tab (it is the second tab at the upper left corner of GT Website) is clicked on, 4 sub-tabs appear:

- On Road Sub-Tab
- Off Road Sub-Tab
- Company Sub-Tab

**On-Road Sub-tab**
This is the place where different types of asset reports can be generated for on-road, off-road and hybrid vehicles. There are eight different report types: 1) on road activity detail, 2) on road daily summary, 3) start & stop report, 4) travel report, 5) mileage summary by state, 6) odometer report, 7) asset inventory and 8) asset note log. In order to create reports for on-road vehicles, first of all, on-road tab should be clicked on and then the report type needs to be chosen. For example, if you want to create “On Road Activity Detail” report, you just need to click on “On Road Activity Detail” tab.

When the “On Road Activity Detail” tab is clicked on, the following window pops up:
This is the window, where any asset and the time period can be chosen. The below window is just an example of an activity detail report query.

When “Run Report” option is clicked on, the following window pops up

This is an example report (on-road activity detail report) for the above query. This report is the most detailed report reflecting every generated message from on-road tracking devices. For other types of report generation under “On-Road” tab such as “On-Road Daily Summary” and “Start & Stop” reports, the same above-mentioned procedures should be followed.

The On-Road Daily Summary Report is the daily summary of any asset in terms of engine start/end time, total driven miles, total drive time, total stopped time, number of stops and start/end odometer readings. The below window is just an example of an on-road daily summary report query.
The Start & Stop Report shows detailed start and stop time data of any asset in terms of engine start/stop time, drive time between each start/stop, drive distance between each start/stop and start/stop locations. The below window is just an example of a start and stop report query.

The Mileage Summary by State Report is a summary of accumulated mileage for any asset during a specific time period in terms of state, date, distance, first/last time in the state and start/end odometer readings. The below window is just an example of a mileage summary by state report query.
The Odometer Report is an odometer summary for any asset during specific time period in terms of date, odometer and last known date and location. The below window is just an example of an odometer report query.

The Asset Inventory Report is a list of assets in any district. The below window is just an example of an asset inventory report query.
The Asset Note Log Report is a list of note logs for any asset. The below window is just an example of an asset note log report query.

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>User</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/27/2012</td>
<td>6:27 PM</td>
<td>Dan Ambrose</td>
<td>Asset unread</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>6:31 PM</td>
<td>Dan Ambrose</td>
<td>Asset unread</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>5:28 PM</td>
<td>Dan Ambrose</td>
<td>Asset unread</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>5:25 PM</td>
<td>Dan Ambrose</td>
<td>Asset unread</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>5:08 PM</td>
<td>Dan Ambrose</td>
<td>Asset unread</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>2:39 PM</td>
<td>Dan Ambrose</td>
<td>Asset paired</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>1:31 PM</td>
<td>Dan Ambrose</td>
<td>Asset paired</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>1:25 PM</td>
<td>Dan Ambrose</td>
<td>Accumulat fix 2</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>1:10 PM</td>
<td>Dan Ambrose</td>
<td>Asset paired</td>
</tr>
<tr>
<td>9/27/2012</td>
<td>1:08 PM</td>
<td>Dan Ambrose</td>
<td>Accumulat get reset</td>
</tr>
<tr>
<td>6/14/2012</td>
<td>3:28 PM</td>
<td>Mike Paredes</td>
<td>Asset Saved</td>
</tr>
<tr>
<td>4/20/2012</td>
<td>11:16 AM</td>
<td>Jim Brouseau</td>
<td>Photo added</td>
</tr>
<tr>
<td>4/20/2012</td>
<td>11:16 AM</td>
<td>Jim Brouseau</td>
<td>Photo added</td>
</tr>
<tr>
<td>3/22/2012</td>
<td>7:31 PM</td>
<td>Jim Brouseau</td>
<td>Asset synced</td>
</tr>
</tbody>
</table>

The Service Due Report lists service records for any asset. The below window is just an example of a service due report query.

<table>
<thead>
<tr>
<th>Asset #</th>
<th>Year</th>
<th>Make</th>
<th>Model</th>
<th>Category</th>
<th>Class</th>
<th>Serial / VIN</th>
<th>Hour Meter</th>
<th>Odometer</th>
<th>Ins. Value</th>
<th>Location</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>61118</td>
<td>2003</td>
<td>Int</td>
<td>4200</td>
<td>2 Ton Stake Bed Truck</td>
<td>1HTMF4FLXYS 696875</td>
<td>78278.7</td>
<td>Crawfordville</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63504</td>
<td>2009</td>
<td>Ford</td>
<td>F350</td>
<td>2 Ton Stake Bed Truck</td>
<td>1FUDW3FPA25K52311</td>
<td>30234.9</td>
<td>Greenfield</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63606</td>
<td>2009</td>
<td>Int</td>
<td>4200</td>
<td>Boom Truck</td>
<td>1FTNM4F880X002362</td>
<td>866.3</td>
<td>8210.2</td>
<td>Greenfield</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63713</td>
<td>2006</td>
<td>Ford</td>
<td>F350</td>
<td>Crew Cab Stake Bed Pickup</td>
<td>1F99W60F16K31164</td>
<td>89241.6</td>
<td>Greenfield</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>63749</td>
<td>2007</td>
<td>Ford</td>
<td>F350</td>
<td>Crew Cab Stake Bed Pickup</td>
<td>1F99W60F16K31164</td>
<td>100239.6</td>
<td>Greenfield</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Asset Inventory

Company: Indiana Department of Transportation

<table>
<thead>
<tr>
<th>Qty</th>
<th>Insured Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td></td>
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<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

On-Road Category:

- 2 Ton Stake Bed Truck: 2
- Boom Truck: 1
- Crew Cab Stake Bed Pickup: 2

The Service Due Report lists service records for any asset. The below window is just an example of a service due report query.
Off-Road Sub-tab

In order to create reports for off-road vehicles, first of all, off-road tab should be clicked on and then the desired report type should be chosen. For example, if you want to create “Off-Road Activity Detail” report, you just need to click on Off-road Activity Detail report tab. When it is clicked on, the following window pops up:

![Off Road Activity Detail - Options](image)

This is the window, where any asset and the time period can be chosen. The Off-Road Activity Detail Report is the most detailed report reflecting every generated message from off road tracking devices. The below window is just an example of an off road activity detail report query.
When “Run Report” option is clicked on, the following window pops up:

For other types of report generation, under “Off Road” tab such as “Off-Road Daily Summary” and “Start & Stop” reports, the same above mentioned procedures should be followed.

The Off Road Daily Summary Report is the daily summary report of any asset in terms of date, engine start/end time, engine usage time between every start/stop, utilization target (8 hours per day), utilization % (engine usage time / utilization target time), stationary time and location. The below window is just an example of an off road daily summary report query.
The Utilization Summary Report is a summary report of idle statistics for any asset in terms of engine usage time, utilization target (8 hours per day), total idle time, utilization % (engine usage time / utilization target time). The below window is just an example of a utilization summary report query.

The Utilization by Week Report is a weekly summary report of idle statistics for any asset in terms of engine usage time, utilization target (8 hours per day), total idle time, utilization % (engine usage time / utilization target time), actual idle time, longest idle duration and stationary time. The below window is just an example of a utilization by week report query.
The Utilization by Month Report is monthly summary report of idle statistics for any asset in terms of engine usage time, utilization target (8 hours per day), total idle time, utilization % (engine usage time / utilization target time), actual idle time, longest idle duration and stationary time. The below window is just an example of a utilization by month report query.

The Cycle Count Detail Report is a detailed engine cycle summary report for any asset at any specific time period in terms of engine usage time, utilization % (engine usage time / utilization target time (8 hours per day)). The below window is just an example of a cycle count detail report query.
The Cycle Count Summary Report is an engine cycle summary report for any asset at any specific time period in terms of engine usage time, utilization % (engine usage time / utilization target time (8 hours per day)). The below window is just an example of a cycle count summary report query.
The Striping Report is a report showing striping truck data for any asset at any specific time period in terms of date, start to site, striping, non-striping, site to finish and total distance mileages report. The below window is just an example of a striping report query. All calculations in the productivity and utilization analysis chapters in Task 3 from the final JTRP (SPR-3650) – INDOT PROJECT report are based on this report.

The Striping Report (MPH) is a report showing estimated striping mileages based on the speed of the striping truck at any specific time period in terms of date, start to site, striping, non-striping, site to finish and total distance mileages. This report is not used in any part of the final JTRP (SPR-3650) – INDOT PROJECT report. The below window is just an example of a striping report (mph) query.
The Striping Report (Engine 2) Report is a report showing estimated striping mileages based on the compressor engine usage time of the striping truck at any specific time period in terms of date, start to site, striping, non-striping, site to finish and total distance mileages. This report is not used in any part of the final JTRP (SPR-3650) – INDOT PROJECT report. The below window is just an example of a striping report (engine 2) query.

The Daily Input Summary Report, is a daily summary report of any sensors for any asset at any specific time period in terms of engine 1, engine 2, rear power, analog 2, RSideSolid, analog 4, digital 3, digital 4 sensor usage time. This report is not used in any part of the final JTRP (SPR-3650) – INDOT PROJECT report. The below window is just an example of a daily input summary report query.
The Historical Hour Meter Report is the historical engine usage hour summary report of any asset in terms of date, hours and location. This report is not used in any part of the final JTRP (SPR-3650) – INDOT PROJECT report. The below window is just an example of a historical hour meter report query.

The Current Hour Meter Report is the current engine 1/2 usage hour summary report of any asset in terms of date, hours and location. This report is not used in any part of the final JTRP (SPR-3650) – INDOT PROJECT report. The below window is just an example of a current hour meter report query.
The Asset Inventory, Asset Not Log and Service Due Reports are the same reports found in the On-Road section tab.

**Other Sub-tab**

There is only one report under the “Other” sub-tab, which is the Assignment and location history report. This is the assignment report of any asset in terms of date, location and assignment type. The below window is just an example of an assignment and location history report query.

**Company Sub-tab**

There are two different reports under company sub-tab. The first one is the Billing Report. This report is only available in excel format. This is the engine usage report of any asset in terms of asset code, category, make/model, start/end engine hours, engine usage time, utilization target and location. The below window is just an example of a billing report query.
The second one is the System User Report. This is the JTRP (SPR-3650) – INDOT PROJECT GT Website user list summary report. It has information about the system usernames, names, e-mail addresses and the role of the system users at the website. The below window is just an example of a system user report query.

### System Users

- **Company:** Indiana Department of Transportation
- **Total:** 14
- **Active:** 14

<table>
<thead>
<tr>
<th>User Name</th>
<th>First Name</th>
<th>Last Name</th>
<th>E-Mail</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>indotdemo</td>
<td>Mike</td>
<td>Paredes</td>
<td><a href="mailto:mike@gaugetelematics.com">mike@gaugetelematics.com</a></td>
<td>Administrator</td>
</tr>
<tr>
<td>D50RUDOL</td>
<td>Joe</td>
<td>Rudolph</td>
<td><a href="mailto:D50RUDOL@indot.in.gov">D50RUDOL@indot.in.gov</a></td>
<td>Administrator</td>
</tr>
<tr>
<td><a href="mailto:mike@indot.com">mike@indot.com</a></td>
<td>Mike</td>
<td>Paredes</td>
<td><a href="mailto:mike@gaugetelematics.com">mike@gaugetelematics.com</a></td>
<td>Administrator</td>
</tr>
<tr>
<td><a href="mailto:dankoo@iu.edu">dankoo@iu.edu</a></td>
<td>Dan</td>
<td>Koo</td>
<td><a href="mailto:dankoo@iu.edu">dankoo@iu.edu</a></td>
<td>Administrator</td>
</tr>
<tr>
<td><a href="mailto:bugrasia@umsi.ui.edu">bugrasia@umsi.ui.edu</a></td>
<td>Bugra</td>
<td>Aslan</td>
<td><a href="mailto:bugrasia@umsi.ui.edu">bugrasia@umsi.ui.edu</a></td>
<td>Administrator</td>
</tr>
<tr>
<td>larry@INDOT</td>
<td>Larry</td>
<td>Hamberg</td>
<td><a href="mailto:larry@gaugetelematics.com">larry@gaugetelematics.com</a></td>
<td>User</td>
</tr>
<tr>
<td><a href="mailto:pcarleston@indot.in.gov">pcarleston@indot.in.gov</a></td>
<td>Peter</td>
<td>Carlston</td>
<td><a href="mailto:pcarleston@indot.in.gov">pcarleston@indot.in.gov</a></td>
<td>User</td>
</tr>
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<td><a href="mailto:jpark@indot.in.gov">jpark@indot.in.gov</a></td>
<td>Jeff</td>
<td>Parker</td>
<td><a href="mailto:jpark@indot.in.gov">jpark@indot.in.gov</a></td>
<td>User</td>
</tr>
<tr>
<td><a href="mailto:tbewley@indot.in.gov">tbewley@indot.in.gov</a></td>
<td>Tom</td>
<td>bewley</td>
<td><a href="mailto:tbewley@indot.in.gov">tbewley@indot.in.gov</a></td>
<td>User</td>
</tr>
<tr>
<td><a href="mailto:PSzwezczak@indot.in.gov">PSzwezczak@indot.in.gov</a></td>
<td>Pat</td>
<td>Szwezczak</td>
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<td>User</td>
</tr>
<tr>
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<td>Randy</td>
<td>Morris</td>
<td><a href="mailto:mmorris@indot.in.gov">mmorris@indot.in.gov</a></td>
<td>User</td>
</tr>
<tr>
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<td>Paul</td>
<td>Michael</td>
<td><a href="mailto:pmichael@indot.in.gov">pmichael@indot.in.gov</a></td>
<td>User</td>
</tr>
<tr>
<td><a href="mailto:tshields@indot.in.gov">tshields@indot.in.gov</a></td>
<td>Todd</td>
<td>Shields</td>
<td><a href="mailto:tshields@indot.in.gov">tshields@indot.in.gov</a></td>
<td>User</td>
</tr>
<tr>
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<td>Jason</td>
<td>Jones</td>
<td><a href="mailto:JASJONES@indot.IN.gov">JASJONES@indot.IN.gov</a></td>
<td>Administrator</td>
</tr>
</tbody>
</table>

User Manual for Smart Hub Website

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2.3 Assets

When Assets tab is clicked on, the following window pops up.

This is the tab where all assets in the project can be seen in one list. In this project, GT sensors have been installed on 12 assets. As shown in the above figure, when Assets tab is clicked on, 5 sub tabs appear:

- The 1st sub-tab is the “List” tab

Under this tab, there are other sub-tabs to create a more customized list view. For example, by using the first sub-tab on the left corner under the drop down list, you can choose: “All types of vehicles”, “On-Road Vehicles”, “Off-Road Vehicles”, Hybrid Vehicles” and “Non-Motorized Vehicles” (Please see the figure below).
Moreover, by using the second left tab, the model of the vehicles can be chosen. As seen below, Autocar, FORD, International, Sterling and White GMC are some of the vehicles in the list.

- The 2\textsuperscript{nd} sub-tab is the “General” tab

This is the tab where detailed asset information (asset properties, location odometer and driving summary) about each asset can be seen. For example, when you are on list view, if you click on the asset “61118 International 4200 2 Ton Stake Bed Truck”, you will see the following window:

This is the window where asset properties such as last known location of the asset, location information, current odometer reading of the asset and today’s driving summary can be seen.
The 3\textsuperscript{rd} sub-tab is the “Device” tab

This is the place where sensor or device properties of any asset can be seen. For example, for asset “61118 International 4200 2 Ton Stake Bed Truck”, when the device tab is clicked on, the following window pops up:

![Device Tab Window]

This is the window where sensor and device properties such as device model, serial number, IMEI & SIM number of GT devices can be seen.

The 4\textsuperscript{th} sub-tab is the “Notes” tab

This is the place where any asset sensor changes or updates can be seen and recorded in a list. For example, the tracking device for asset “61118 International 4200 2 Ton Stake Bed Truck” was first installed on 9/12/2011 by Mike Parades and synchronized 2 more times at different dates, once by a different person. Please see below for details.
The 5th sub-tab is the “Engine” tab

This is the place where engine information for each asset can be seen. Engine information is the information about: 1) Engine serial Number, 2) Manufacturer, 3) Model, 4) Family, 5) Year and 6) Max HP.

The 6th sub-tab is the “Service” tab

This is the place where any service or maintenance records for any vehicle can be found. This tab has 3 sub-tabs: 1) Schedule information, 2) Completed work orders list and 3) Parts list.
• The 7th sub-tab is the “Add’ l (Additional Properties)” tab

This is the place where additional information like serial number, license plate number, DOT number, etc…) can be seen about any asset (please see below figure for details).

• The 8th sub-tab is the “Images” tab

This is the place where asset images and sensor types can be seen. Unfortunately, this option is not applicable to all assets. Currently, some assets have images and some of them do not.
2.4 Maintenance

This is the place where maintenance schedules for each asset can be found in a list.

2.5 Map

This is the place where any user can cross reference the activity detail reports, which are reflecting every generated message from on/off-road tracking devices. Moreover, this is the place where daily historic activity of any truck can be tracked. When the “Map” tab is clicked on the following window pops up. This is the default window of Map main-tab. The Map main tab has 5 sub-tabs: 1) Filters, 2) Messages, 3) Segments, 4) Settings and 5) Animation control.
- Filters sub-tab

This is the place where you can filter any sites, assets, category, date range, speed range and reason codes.

For example, if you want to track the behavior of one of the striping trucks such as “63759 White GMC WX Xpeditor Edgeline Striping Truck” for one day period (07/03/2012 12:00 am to 07/03/2012 11:59 pm), you need to choose “63759 White GMC WX Xpeditor Edgeline Striping Truck” from Asset Tab, date range from 07/03/2012 12:00 am to 07/03/2012 11:59 pm from Date Range Tab and reason codes from Reason Tab. Then, you will see the following window.
This is the tracking view for the striping trucks, where any user can see daily striping truck activities. As shown above, red dots represent the places where the highest number of messages was created. In other words, this is the place where striping truck was very active. However, yellow dots represent the places with the second highest active and the blue dots represent the places where the truck was rarely active. You may zoom into the points to see more details about the activities of the truck. The two figures below represent the zoomed in map views.
When zoomed in on the maps, different legends start to appear. Three types of legends are used to symbolize the reasons for the messages.

The 1st legend is:
This legend represents the below message codes:

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select All</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 1 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 1 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 2 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 2 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 3 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 3 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 4 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 4 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 5 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 5 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 6 Above Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Analog Input 6 Below Threshold</td>
<td>✔</td>
</tr>
<tr>
<td>Battery Connected</td>
<td>✔</td>
</tr>
<tr>
<td>Battery Disconnected</td>
<td>✔</td>
</tr>
</tbody>
</table>

The 2nd and 3rd legends are:

![Warning Icon](image1.png)  ![Error Icon](image2.png)

These legends represent the below message codes:
• Messages sub-tab

This is the tab where any user can see any reason or message code such as an analog input 1 above threshold or an analog input 1 below threshold for any asset. When the messages tab is clicked on, the following window pops up.
The reason codes or the message codes are the codes sent by striping trucks while they are being used for roadway painting or maintenance activities. Every message code has a unique meaning. Table 1 summarizes the meanings of each reason code.

Table: Reason Code Definitions

<table>
<thead>
<tr>
<th>Reason Code</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key On</td>
<td>When truck key is placed on the ignition, “key on” code appears.</td>
</tr>
<tr>
<td>Key Off</td>
<td>When truck key is taken out from the ignition, “key off” code appears.</td>
</tr>
<tr>
<td>Periodic Message</td>
<td>This is a regular message sent by trucks every 2 minutes time period.</td>
</tr>
<tr>
<td>Engine Started</td>
<td>When truck ignition is turned on, “Engine Started” message code appears.</td>
</tr>
<tr>
<td>Engine Stopped</td>
<td>When truck ignition is turned off, “Engine Stopped” message code appears.</td>
</tr>
<tr>
<td>Engine 2 Started</td>
<td>This is the compressor engine. When compressor is turned on, “Engine 2 Started” message code appears.</td>
</tr>
<tr>
<td>Engine 2 Stopped</td>
<td>This is the compressor engine. When compressor is turned off, “Engine 2 Stopped” message code appears.</td>
</tr>
<tr>
<td>Analog Input 1 Above Threshold</td>
<td>Master switch for rear striping controls. When the switch is turned on, “Analog Input 1 Above Threshold” code appears.</td>
</tr>
<tr>
<td>Analog Input 1 Below Threshold</td>
<td>Master switch for rear striping controls. When the switch is turned off, “Analog Input 1 Below Threshold” code appears.</td>
</tr>
<tr>
<td>Analog Input 2 Above Threshold</td>
<td>Main switch for left solid painting spray. When the switch is turned on, “Analog Input 2 Above Threshold” code appears.</td>
</tr>
<tr>
<td>Analog Input 2 Below Threshold</td>
<td>Main switch for left solid painting spray. When the switch is turned off, “Analog Input 2 Below Threshold” code appears.</td>
</tr>
<tr>
<td>Analog Input 3 Above Threshold</td>
<td>Main switch for right solid painting spray. When the switch is turned on, “Analog Input 3 Above Threshold” code appears.</td>
</tr>
<tr>
<td>Analog Input 3 Below Threshold</td>
<td>Main switch for right solid painting spray. When the switch is turned off, “Analog Input 3 Below Threshold” code appears.</td>
</tr>
<tr>
<td>Digital Input 3 On</td>
<td>Main switch for left skip painting spray. When the switch is turned on, “Digital Input 3 On” code appears.</td>
</tr>
<tr>
<td>Digital Input 4 On</td>
<td>Main switch for right skip painting spray. When the switch is turned on, “Digital Input 3 On” code appears.</td>
</tr>
</tbody>
</table>

- **Segments sub-tab**

This is the place where striping trucks’ painting segments such as right solid/skip and left solid/skip lines can be tracked on Google maps. When segments tab is clicked on, the following window pops up.
This is the default view of Segments tab. Painting segments can be created by clicking the “Add” button at the far right corner of this tab. When Add button is clicked on, the following window pops up.

The name, start/end reason codes and color of the segments can be created with this tool. For example, in order to create one painting segment such as “Right Solid Line”, the following procedure should be followed in a sequence:

a) Type “Left Solid Line” into the Name column.

b) Choose “Analog Input 3 Above Threshold” item from the drop down list of Start Reason column.

c) Choose “Analog Input 3 Below Threshold” item from the drop down list of End Reason column.

d) Choose the color of the painting segment which you like to see from the drop down list of Color column.

e) Be sure Enabled column is clicked on.
When all above procedures are followed in a sequence, the following window pops up. As shown below, left solid line painting segment can be seen on the map (red solid line) after the segments tab is activated.

![Map with segments and settings sub-tab](image)

- **Settings sub-tab**

  When settings tab is clicked on, the following window pops up.

![Settings window](image)

This is the place where any user can see the positions of the sites globally on Google maps. In this project, two INDOT sites are located: 1) Crawfordsville and 2) Greenfield
• Animation Control sub-tab

When settings tab is clicked on, the following window pops up.

This is the place where striping trucks’ roadway maintenance operations can be animated in Google maps. The speed of the animation can be controlled with the speed option at the animation tab.

2.6 Sites

This is the place where names of the sites can be seen in a list.
2.7 **Tasks**

This is the place where all assignments and all vehicles can be seen in a list.

2.8 **Company**

When the company tab is clicked on, the following window pops up:
As seen in the above figure, this tab has 3 sub-tabs. The first sub-tab is “My Company” tab. When you click on this tab; you will see your company name, address and time zone properties. The second sub-tab is “Work Schedule” tab. When you click on this tab; you will see your company’s working schedule. According to current schedule, working days of your company are Monday through Friday; however, this schedule can be customized at any time.

The third and last sub-tab is Fuel Rates tab, when you click on this tab, you will see the following window:
3. My Info

My info tab is the left tab in the top right corner of the GT website. It is just left of the Log out tab. When you click on this tab, you will see the following window:

As seen on above figure, my info tab has 3 sub-tabs: 1) List, 2) General and 3) Password. When you click on the General sub-tab, you will see your user information such as, first name, last name, username, e-mail address, etc… When you click on the Password tab, you will see the password change window pictured below. This is the place where you can change your password at any time you wish.
4. **Log out**

This is the tab where you can log out of the GT website. When this tab is clicked on, the following tab pops up. This is the first website window from the beginning of the report, used to access to the GT website.