BlueARGUS™

UserGuide

1.0 — Last update: 2017/10/13

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1. Welcome

BlueARGUS USER GUIDE

Version 2.0 | Released 7.24.17

THE MOST SAMPLES | THE MOST MATCHES | THE TOP SOFTWARE

2. How to Use This Guide

This guide serves as the user manual for BlueARGUS, the client facing software behind the BlueTOAD system, Iteris' industry leading travel-time, speed and origin & destination data collection system.

- This guide covers BlueARGUS version 2.0, released on 7/24/17.
- In the table of contents to the left you will find various topics and subtopics as well as guides to commonly used actions, functions, features, and frequently asked questions.
- The guide is formatted with the intent of allowing the user to have the guide up on one side of their screen and their live BlueARGUS system up on the other side. This provides the user with a nice, clean, easy to follow interface to use as a script in real time as they trace the steps in their live BlueARGUS system. However, the guide can also be saved as a PDF file and/or printed as well (see the printer icon in the upper right corner of each page to print individual pages or the "Download as PDF" button at the bottom of the table of contents to print the entire manual). It can also be brought up on a mobile device such as a smartphone or tablet.
- Any text within the guide that serves as a shortcut to another page in the guide, or to an external website, will be in blue, such as the website for Iteris.
- Any text within the guide that is a button or selectable option in the actual BlueARGUS software will be highlighted in orange, such as Speed Map. Clicking on them in the guide does not do anything. It is simply a way to draw your attention to the button that you should be selecting in your live system.
- At the bottom of each page, there is a feedback tool that you can use to provide us with any comments/thoughts/questions you might have about that particular page. As this is an ever evolving document, we welcome your feedback and encourage you to let us know if anything is not clear or might require further explanation.

3. BlueTOAD Setup

This section will show you how to add BlueTOAD devices to the BlueARGUS software as well as how to setup pairs and routes within your system. Once these are in place, you can start pulling data for the devices, pairs and routes in your system and also get detailed information as to their location, characteristics and current operating status.

- Click on Devices here or in the table of contents to the left to learn how to setup devices in your system
- Click on Pairs here or in the table of contents to the left to learn how to setup pairs in your system
- Click on Routes here or in the table of contents to the left to learn how to setup routes in your system

3.1. Devices

Spectra model BlueTOAD device

Devices refers to the actual hardware out in the field, the BlueTOADs. This includes the Classic model and the powerful, cutting-edge Spectra model pictured here that was released in 2016. The devices collect the data utilized by BlueARGUS.

Once the BlueTOADs are installed out in the field, the devices need to be added to the BlueARGUS software. Once this is done, the devices can be paired up to one another to form pairs, and pairs can then be strung together to form routes.

To get to the Device page, click on BlueTOAD SETUP in the tabs at the top of the screen and three (3) sub-tabs will appear, labelled Devices, Pairs, and Routes. The sub-tabs will default to the Devices page.

When the Devices sub-tab is selected/active the inventory of devices is displayed in a map of the system as well as a list displaying several characteristics/values for each device:

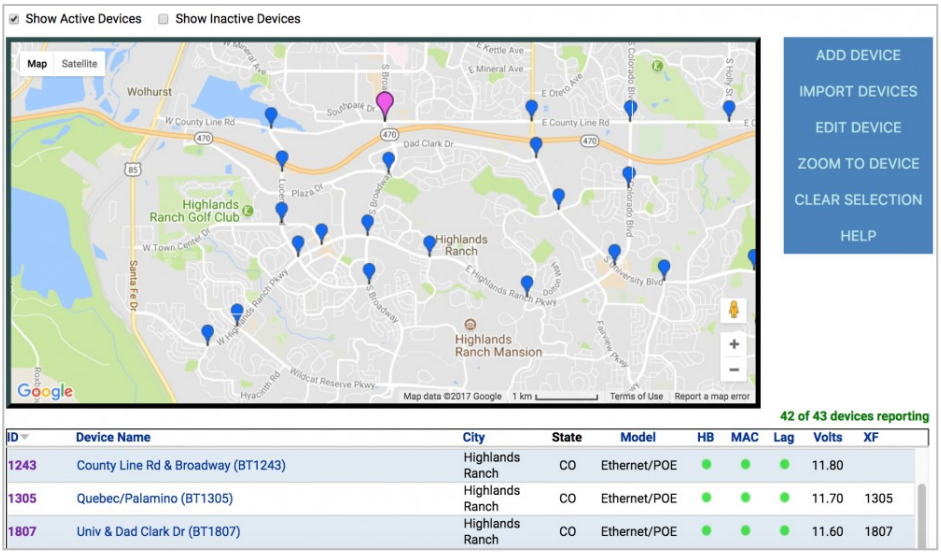
ID – individual ID number for each device. This number is provided with each delivered BlueTOAD unit. Clicking on a device's ID number turns its pin purple on the map and, if it is off the screen, centers the map on that device.

Device Name – defined by the client, typically the two intersecting streets. Clicking on the device name brings up detailed information on the device in a series of sub-tabs.

City & State – where the device is located/its jurisdiction

Model – various models, such as Ethernet/POE (fiber-based) vs. GSM/Solar (cellular)

Heart-Beat (HB) – is the device communicating diagnostic information? Green yes, red no



Example of map/list of devices

MAC – is the device reporting MAC detections? Green yes, red no

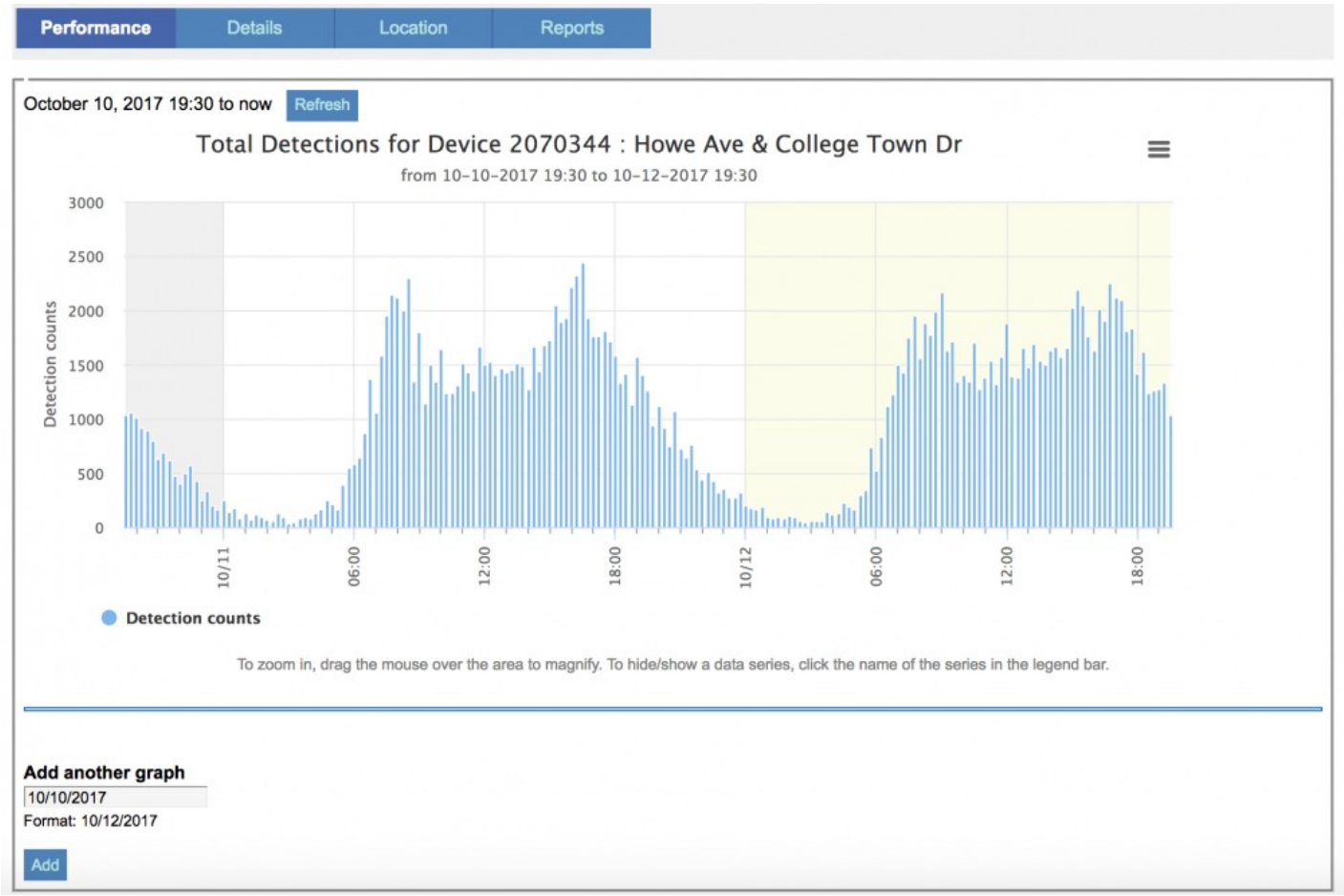
Latency (Lag) – is the timing for data from the device to the server correct? Green yes, red no

Volts – current voltage of the device

XF – user notes (e.g. mile marker)

3.1.1. Devices sub-tabs

Clicking on a Device Name in the list under the Devices sub-tab will bring up four (4) additional sub-tabs for that particular device: Performance, Details, Location, Reports



Performance:

- allows you to see the detection counts for the device of interest over the last 48 hours.
- to zoom into a closeup view of a segment of the graph, simply click and hold the mouse button and draw a box around the area of interest and release the mouse button. To return the full graph, click Reset zoom
- to print/PDF/create an image file* – to create an image file or PDF of the graph, or to print the graph, click on the button made up of three horizontal bars in the upper right corner of the graph and it will allow you to export the current graph.

- to compare the last 48 hours of data to another 48 hour time period, select Add another graph and the bottom of the graph and select your day of interest. The day you select will be the beginning of the 48 hour time period.

Details:

- allows you to see the details on the selected device, including its ID, name, and the pairs in which it is a part of, the BlueTOAD model of the device in question, etc.
- you may also disable the device to set an end date

Location:

- shows you where the device is on a map and give you it's city, state, latitude and longitude
- you may also change the location of the device by selecting the Change Location button

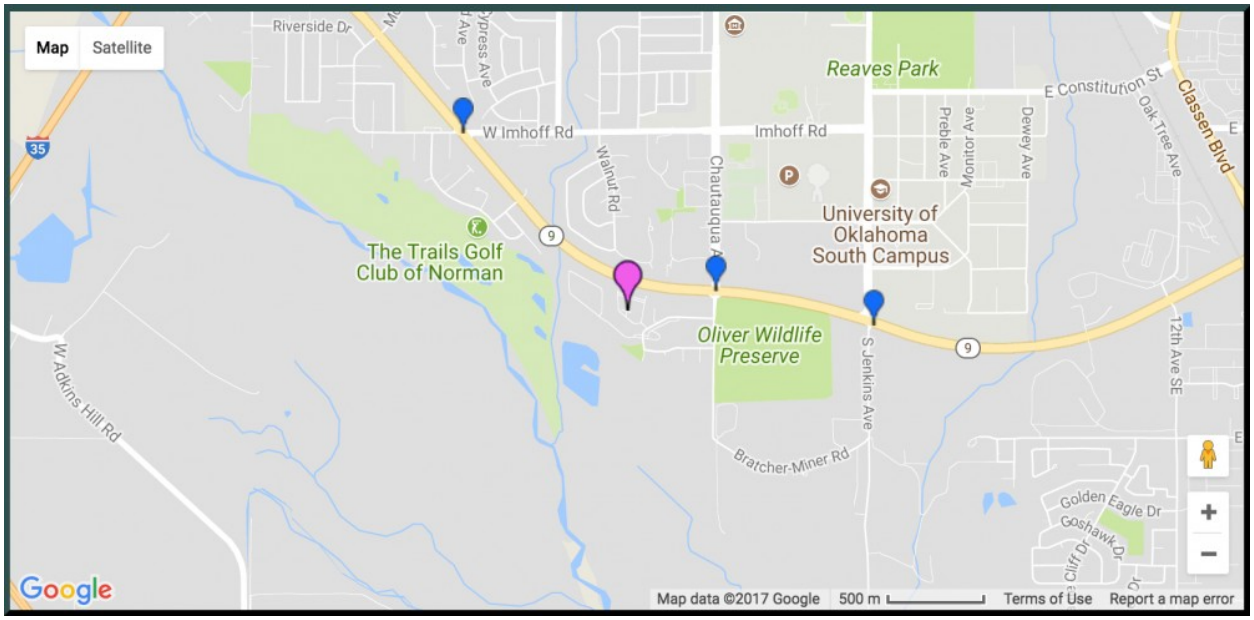
Reports:

- allows you create a Device Report, with the device of interest already selected

3.1.2. How to add a BlueTOAD device

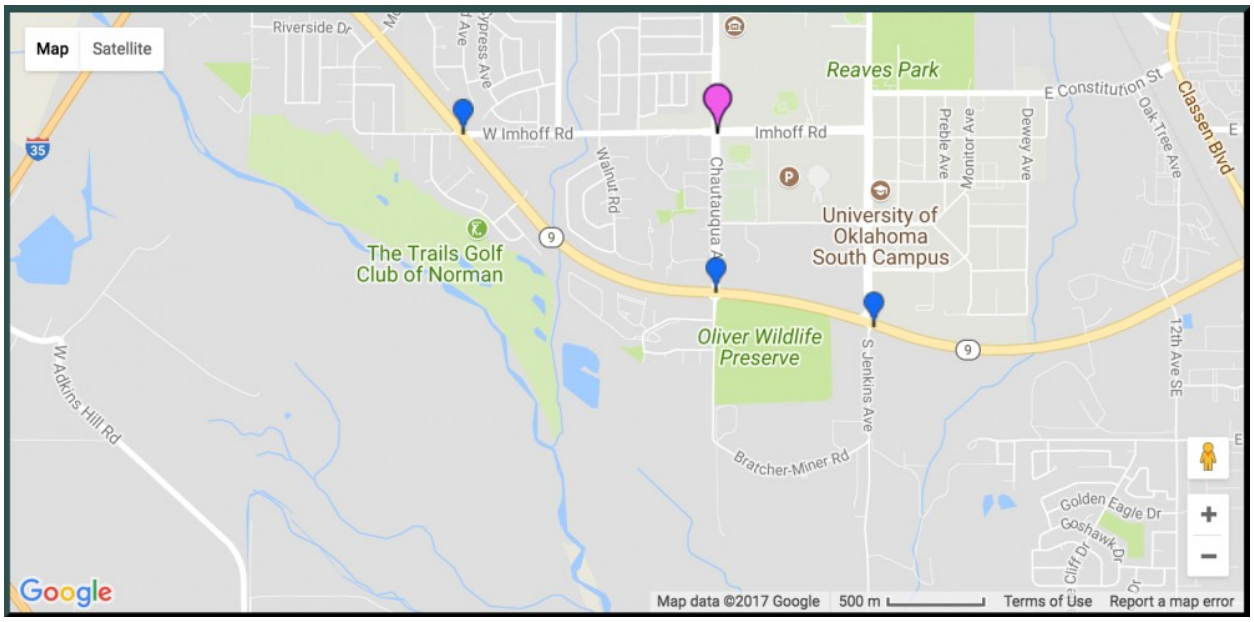
1. Click on BlueTOAD SETUP tab in the main menu bar at the top of the screen
    a. the sub-tab Devices will already be selected by default
    b. an inventory of all the BlueTOAD devices in the system along with a system map will appear (see Devices page for details)

2. Click on Add Device
    a. a purple pin will appear on the map



Purple pin appears after hitting Add Device

3. Set the location of the new device by selecting the purple pin on the map and dragging it to its real world installed location
    a. use the zoom function of the map to help accurately locate the device
    b. notice that the latitude and longitude in the data entry box will automatically update as you move the pin around



4. Fill in the remaining device information
    a. tip – use the Make Like function to save time by having most of the device's information pulled from an existing device.

5. Click on Save Device

6. Other Options/Tips – import multiple devices at once using Import Devices and Microsoft Excel

3.1.3. How to delete a BlueTOAD device

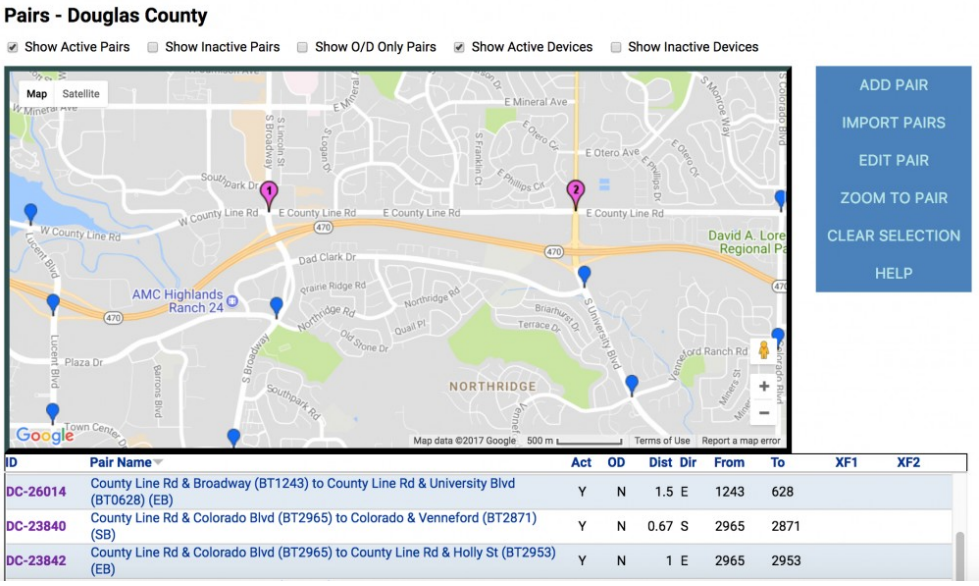
WE STRONGLY SUGGEST THAT YOU DO NOT DELETE A DEVICE AS IT COULD HINDER YOUR ABILITY TO PULL HISTORICAL DATA FOR THAT DEVICE AND ITS ASSOCIATED PAIRS AND ROUTES

PLEASE CONTACT OUR HELP DESK IF YOU ARE NEEDING TO MOVE, DISABLE, OR DELETE A DEVICE AND WE CAN FIND THE OPTION THAT WORKS BEST FOR YOUR SYSTEM.

3.2. Pairs

Pairs are segments comprised of two BlueTOAD devices, one on each end, with a known length between them. These are used to create matches and calculate speed and travel-time.

When BlueTOAD SETUP in selected in the tabs at the top, the sub-tabs default to the Devices page. Click on the Pairs sub-tab to bring up the existing pairs in the system as shown in a map of the system as well as a list displaying several characteristics/values for each pair:



Example of a pair

ID – individual ID number for each pair. Clicking on a pair's ID number highlights the devices on the map that define that particular pair

Pair Name – defined by the client, typically the names of the two device locations making up the pair. Clicking on the name in the list brings up detailed information on the pair, including a 48-hour summary graph showing the number of matches for that pair and the speed and travel time as compared to the speed limit or historical data along that pair.

Act – is the pair active?

OD – will this pair only be used for Origination and Destination (OD) reports?

Dist – driving distance that the pair covers (can be in miles or kilometers based on your system settings) – note that this is not the straight line distance but is instead the distance between the two devices

Dir – direction of the pair

From – ID number for the device that marks the beginning point of the pair

To – ID number for the device that marks the end point of the pair

XF1, XF2 – optional user notes, you can put any notes or descriptions here that you want

3.2.1. Pairs sub-tabs

Clicking on a Pair Name in the list under the Pairs sub-tab, or by right clicking on a pair on the Speed Map, will bring up four (4) additional sub-tabs for that particular pair: Performance, Details, Location, Reports

Performance:

- allows you to see match counts, raw speeds, and the last 48 hours of speed and travel time data, and either the speed limit, historical average over the last 12 weeks, or custom historical range for the pair of interest.
- to zoom into a closeup view of a segment of the graph, simply click and hold the mouse button and draw a box around the area of interest and release the mouse button. To return the full graph, click Reset zoom
- to print/PDF/create an image file* – to create an image file or PDF of the graph, or to print the graph, click on the button made up of three horizontal bars in the upper right corner of the graph and it will allow you to export the current graph.
- to compare the last 48 hours of data to another 48 hour time period, select Add another graph and the bottom of the graph and select your day of interest. The day you select will be the beginning of the 48 hour time period.

Details:

- allows you to see the details on the selected pair, including its ID, name, the devices that start and end the pair, the routes in which it is a part of, the distance and direction of the pair, etc.

Location:

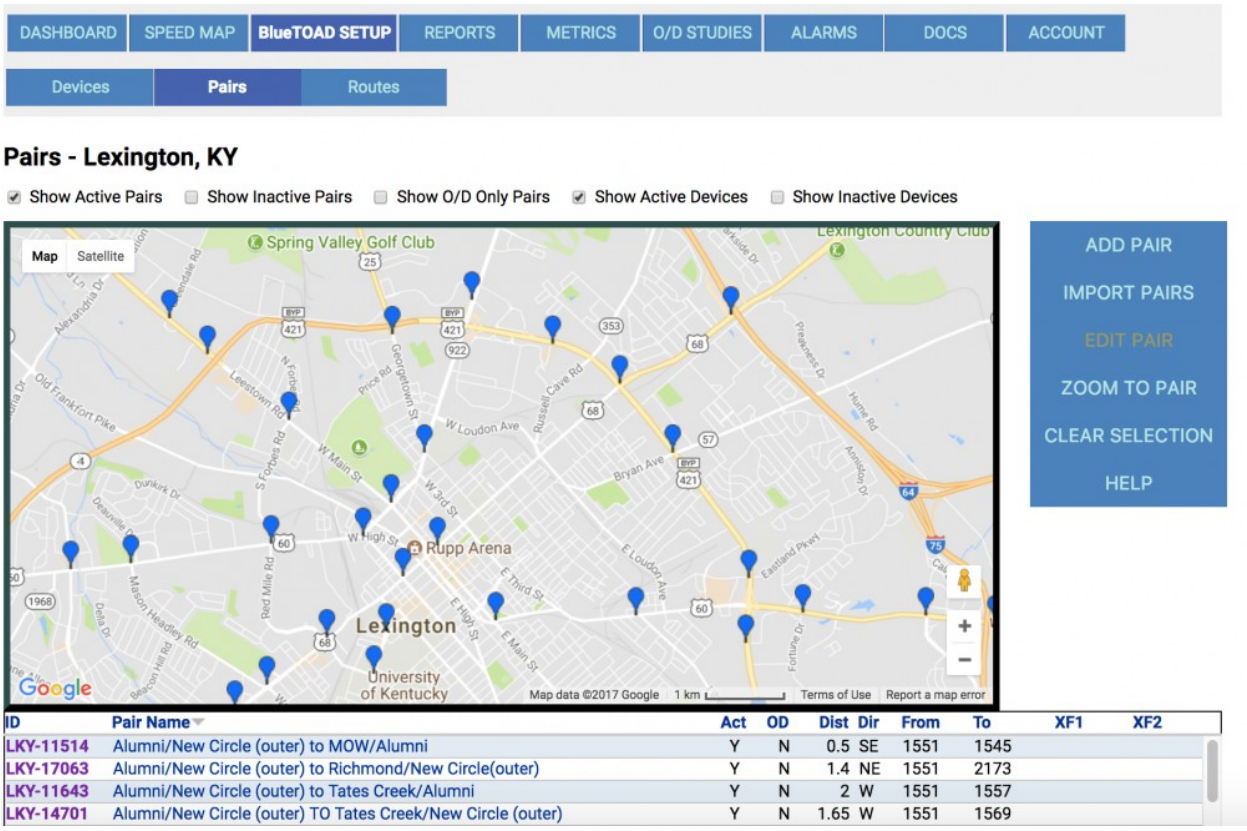
- shows you where the pair is on a map

Reports:

- allows you create a Pair/Route Report, with the pair of interest already selected

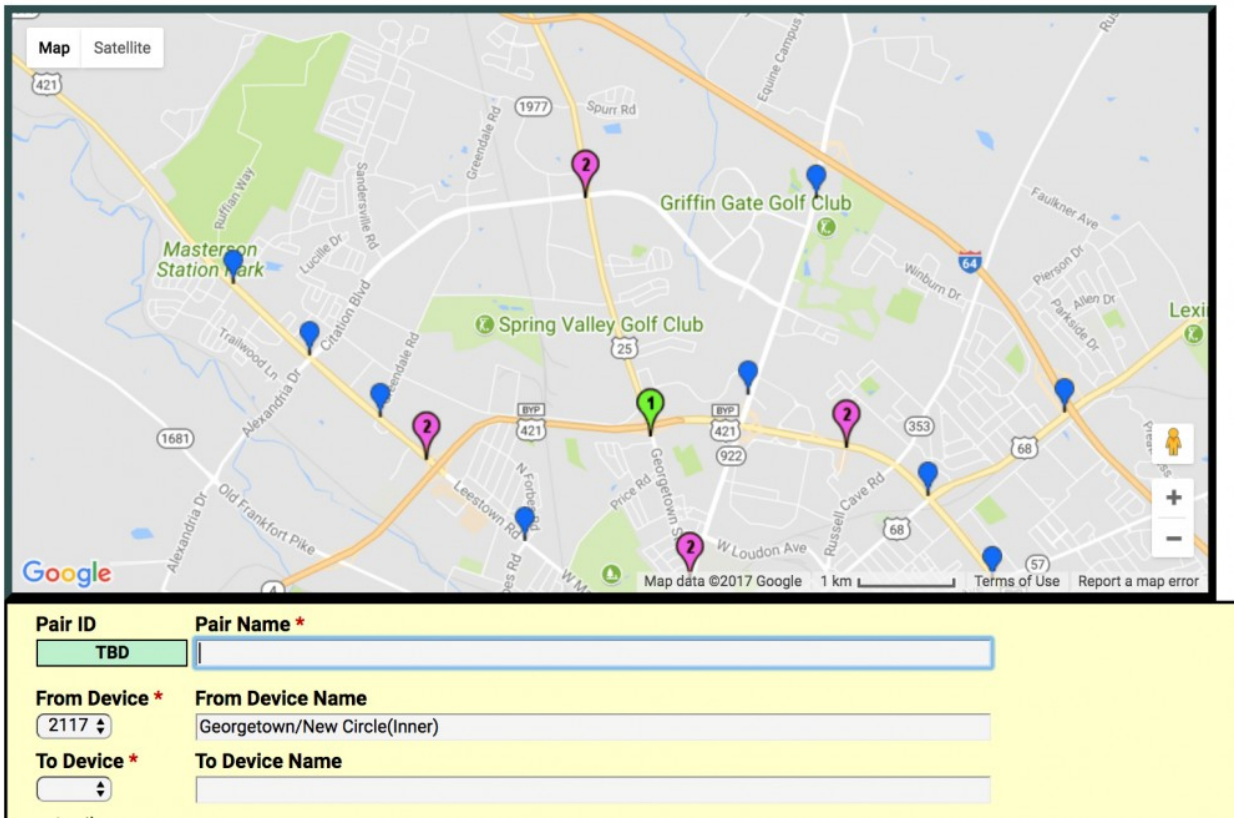
3.2.2. How to create a new pair

1. Click on BlueTOAD SETUP tab in the main menu bar
   a. the sub-tab Devices underneath BlueTOAD SETUP will already be selected by default
   b. to change to Pairs, click on the Pairs sub-tab
   c. an inventory of all the pairs in the system along with a system map will appear

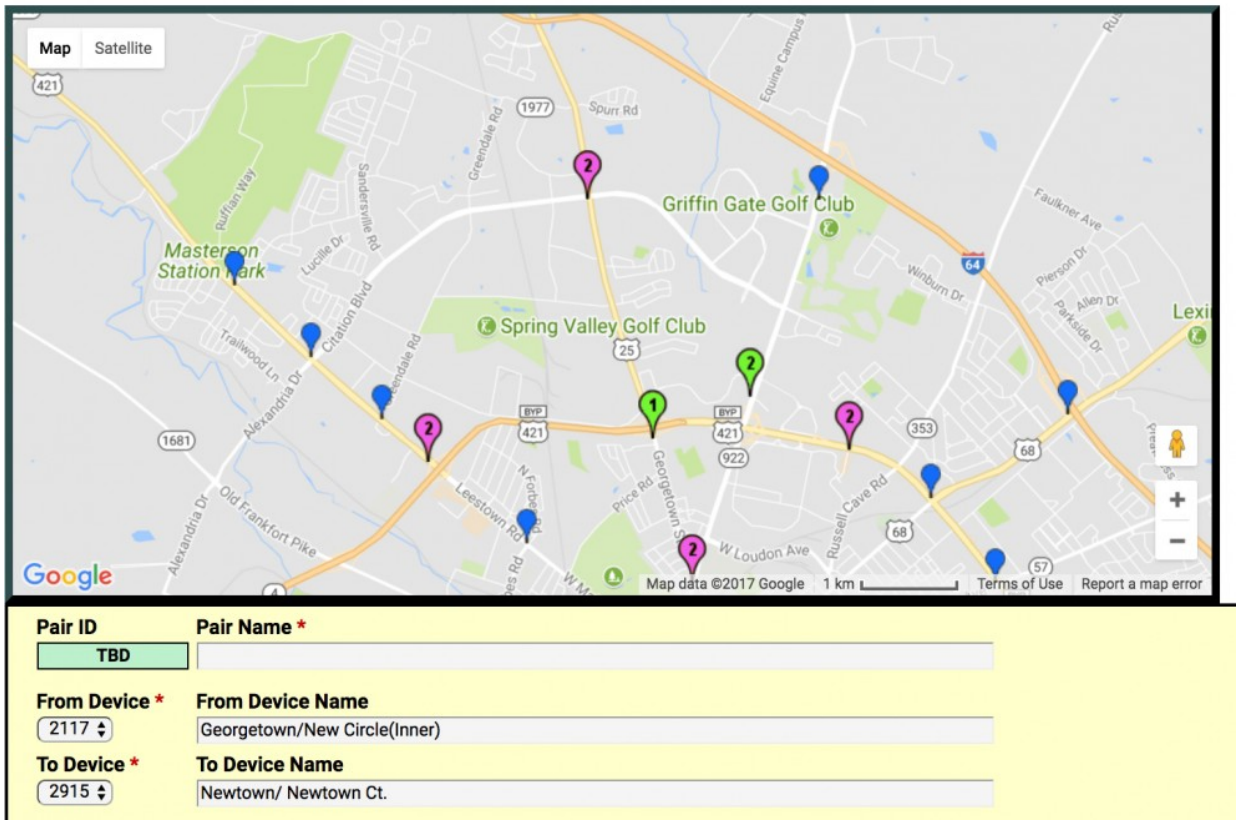


2. Click on Add Pair on the right side of the page

3. Click on the device pin on the map that you want to be the beginning point of the new pair
   a. it will then turn green and have a label of (1)
   b. all existing pairs already involving that device as the starting point will show up as purple and labeled (2)



4. Select the device that will be the end point of the new pair by clicking on it on the map
    a. it should be blue and without a label until you click on it, whereupon it will turn green and be labeled as (2)



5. Go to the New Pair form beneath the map and give the pair a name
    a. notice that the From and To pair info is already filled in based on the map pins you selected in Steps 2 and 3
    b. the pair ID will be generated automatically once you create the pair

6. Fill out the remaining pair attributes:
   Distance – the driving distance between the newly created pair end points – this is very important as it affects all calculations and it should be the length along the roadway between the two device end points and not the direct, “as the crow flies” distance
   Direction – direction that the pair travels, “From Device” to “To Device”
   Speed Limit – the speed limit along the stretch of road that the pair traverses
   Road Class – used to calculate LOS, uses HCM and FDOT classifications
   Smoothing Method – how the data is processed and filtered – we have developed multiple algorithms to match road conditions and produce the most accurate travel time. Example: arterials vs. freeways. Two Stage Mean is most commonly used for arterials.
   XF1, XF2 – user notes, these can be used for descriptive any info you want to include along with the pair
   Min/Max Speed – the lower and upper limits of what is considered an outlier, relative to speed limit. Recommend keeping this on Auto for Min. and 30mph for Max.
   Stale Time – is used to identify pairs for which the reported travel time/speed is no longer valid. Stale Time is the defined time period since the last match after which a pair will be labeled “stale”. Recommend keeping this at 30 min.

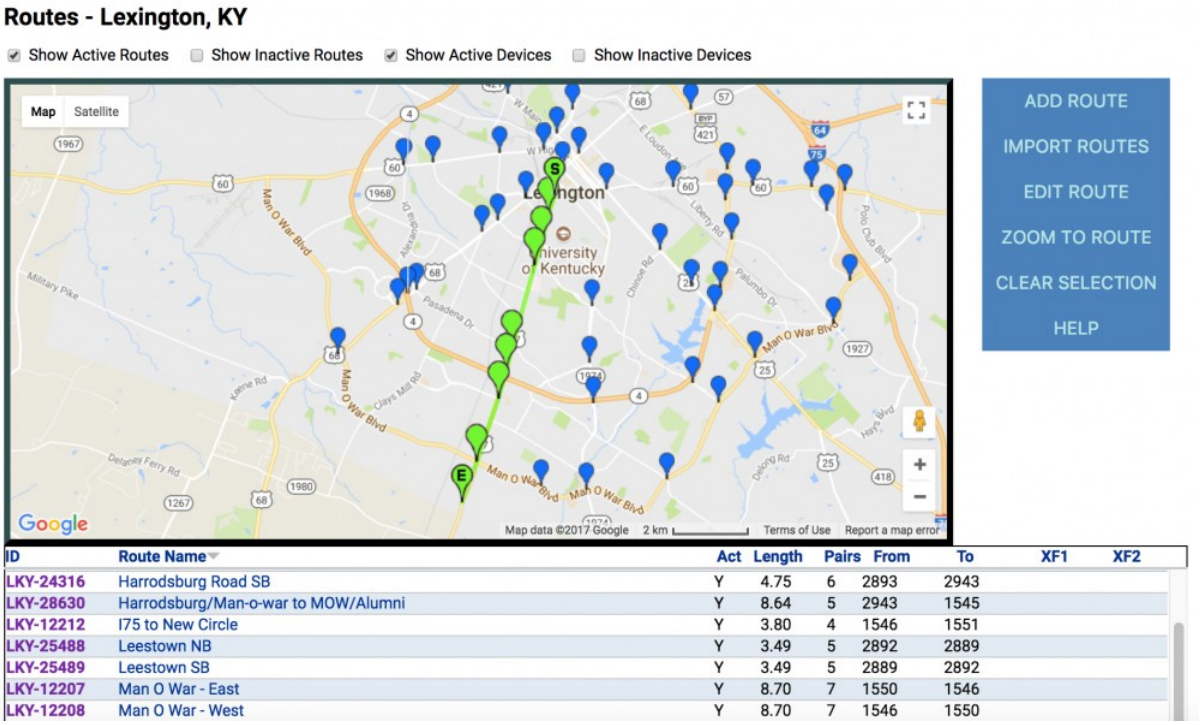
   TIP – use the Make Like and Add Reverse functions to save time

7. Click Save Pair

3.3. Routes

Routes are segments comprised of multiple Pairs.

When BlueTOAD SETUP in selected in the tabs at the top, the sub-tabs default to the Devices page. Click on the Routes sub-tab to bring up a map of the system as well as a list displaying existing routes for the system as several characteristics/values for each:



ID	Route Name	Act	Length	Pairs	From	To	XF1	XF2
LKY-24316	Harrodsburg Road SB	Y	4.75	6	2893	2943		
LKY-28630	Harrodsburg/Man-o-war to MOW/Alumni	Y	8.64	5	2943	1545		
LKY-12212	I75 to New Circle	Y	3.80	4	1546	1551		
LKY-25488	Leestown NB	Y	3.49	5	2892	2889		
LKY-25489	Leestown SB	Y	3.49	5	2889	2892		
LKY-12207	Man O War - East	Y	8.70	7	1550	1546		
LKY-12208	Man O War - West	Y	8.70	7	1546	1550		

Example of a Route

ID – individual ID number for each route. Clicking on a route's ID number highlights the pairs that constitute that route. The starting and ending points along the route are labeled (S) and (E) respectively.

Route Name – defined by the client. Clicking on a route name in the list brings up detailed information on the route, including a 48-hour summary graph showing the the speed and travel time for the route as compared to the speed limit and historical data.

Act – is the route active?

Length – driving distance for the length of the route (can be in miles or kilometers based on your system settings), automatically calculated from the distance of the individual pairs that make up the route

Pairs – the number of pairs that make up the route

From – ID number for the device that marks the beginning point of the route

To – ID number for the device that marks the end point of the route

XF1, XF2 – optional user notes

3.3.1. Routes sub-tabs

Clicking on a Route Name in the list under the Routes sub-tab, or by selecting a route from the drop down list at the top of the Speed Map and then right clicking on the little toad next to the drop down list on the Speed Map, will bring up four (4) additional sub-tabs for that particular route: Performance, Details, Location, Reports

Performance:

- allows you to see the last 48 hours of speed and travel time data, and either the speed limit, historical average over the last 12 weeks, or custom historical range for the route of interest.
- you also will see speed and travel time graphical elements showing the contribution of each pair within the route to the overall route speed and travel time
- to zoom into a closeup view of a segment of the graph, simply click and hold the mouse button and draw a box around the area of interest and release the mouse button. To return the full graph, click Reset zoom
- to print/PDF/create an image file* – to create an image file or PDF of the graph, or to print the graph, click on the button made up of three horizontal bars in the upper right corner of the graph and it will allow you to export the current graph.
- to compare the last 48 hours of data to another 48 hour time period, select Add another graph and the bottom of the graph and select your day of interest. The day you select will be the beginning of the 48 hour time period.

Details:

- allows you to see the details on the selected route, including its ID, name, the devices that start and end the route, and the subsidiary routes that make up the route
- you can also change the threshold limits for the route of interest

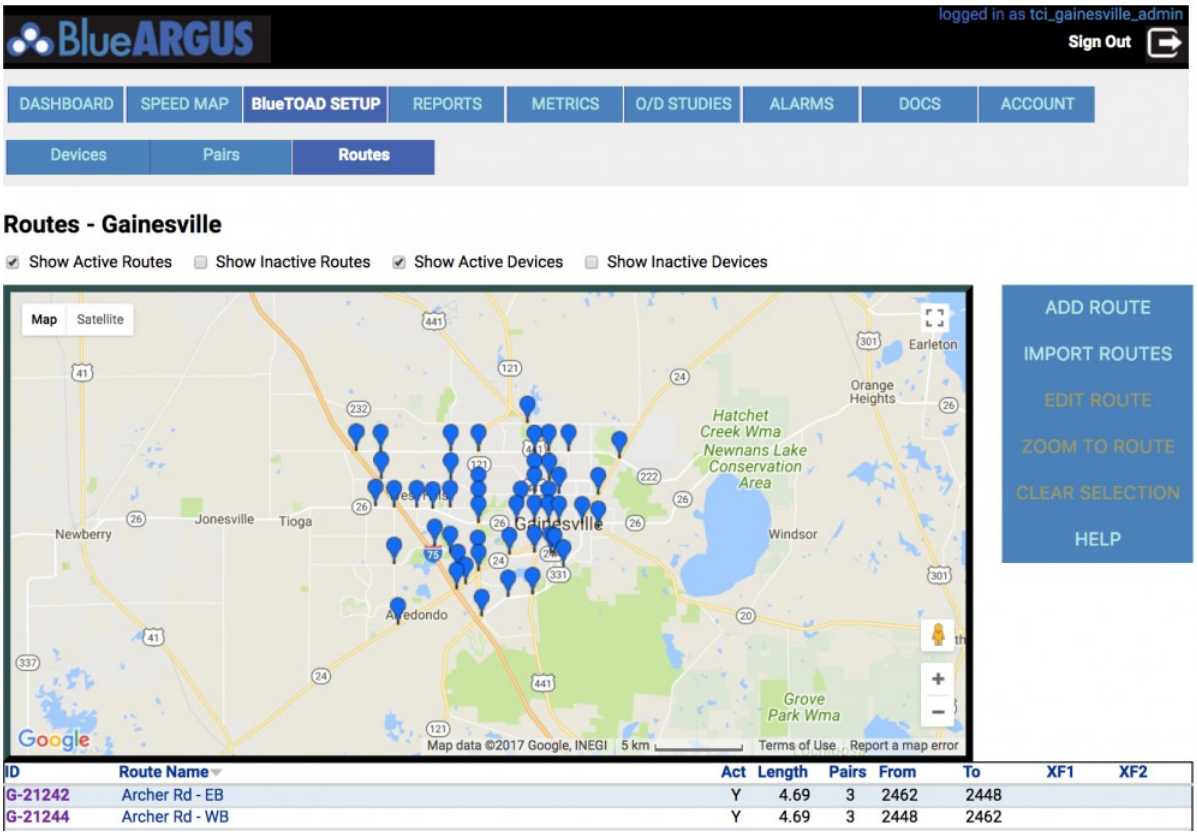
Location:

- shows you where the route is on a map

Reports:

- allows you create a Pair/Route Report, with the route of interest already selected

3.3.2. How to create a new route



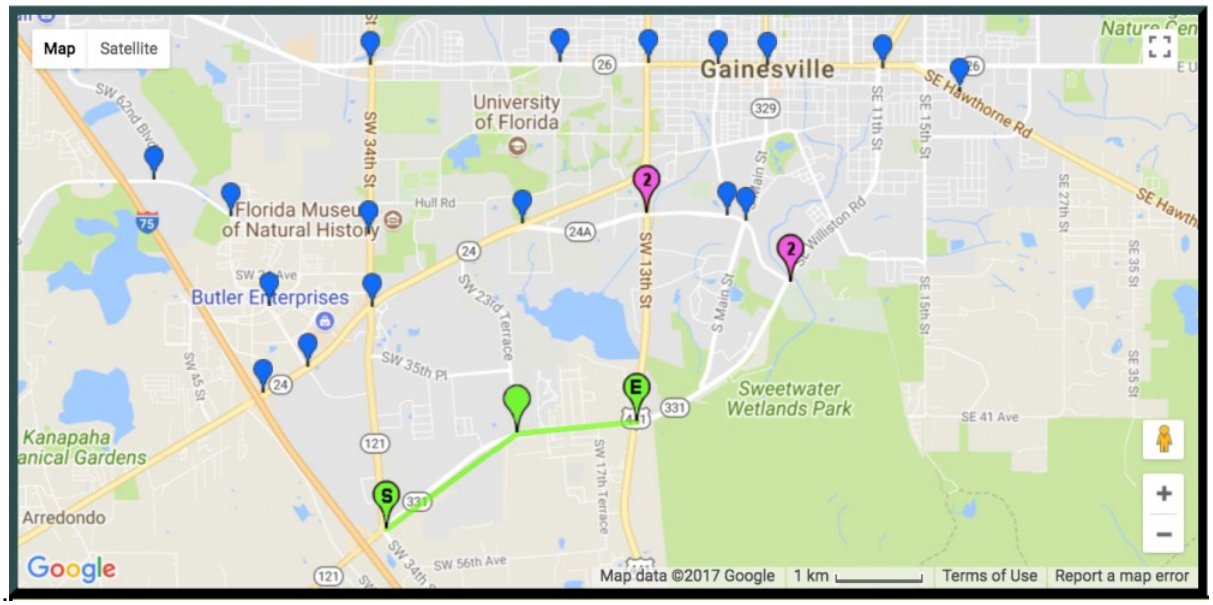
1. Click on BlueTOAD SETUP tab in the main menu bar
    a. the sub-tab Devices will already be selected by default
    b. to change to Routes, click on the Routes sub-tab
    c. below, an inventory list of all the routes in the system along with a system map will appear

2. Click on Add Route to the right of the map

3. Click on the device pin on the map that will be the beginning point of the new route
    a. it will then turn green and be labeled (S) for “start”
    b. all devices that are paired with this start device will show up as purple and will be labeled (2)

4. Select the already paired device that is along the path of the route that you wish to create
    a. it will turn green and be labeled (E) for “end”

5. To extend the route from this device onto another device, click on your newly labelled end device (E) and the devices it is paired with will turn purple and be labeled (2) and you can now select one of them as the next device in the route
    a. it will turn green and be labeled (E) for “end”, the device previously marked as (E) will simply turn green.

b. 

Extending the Route to a Third Pair

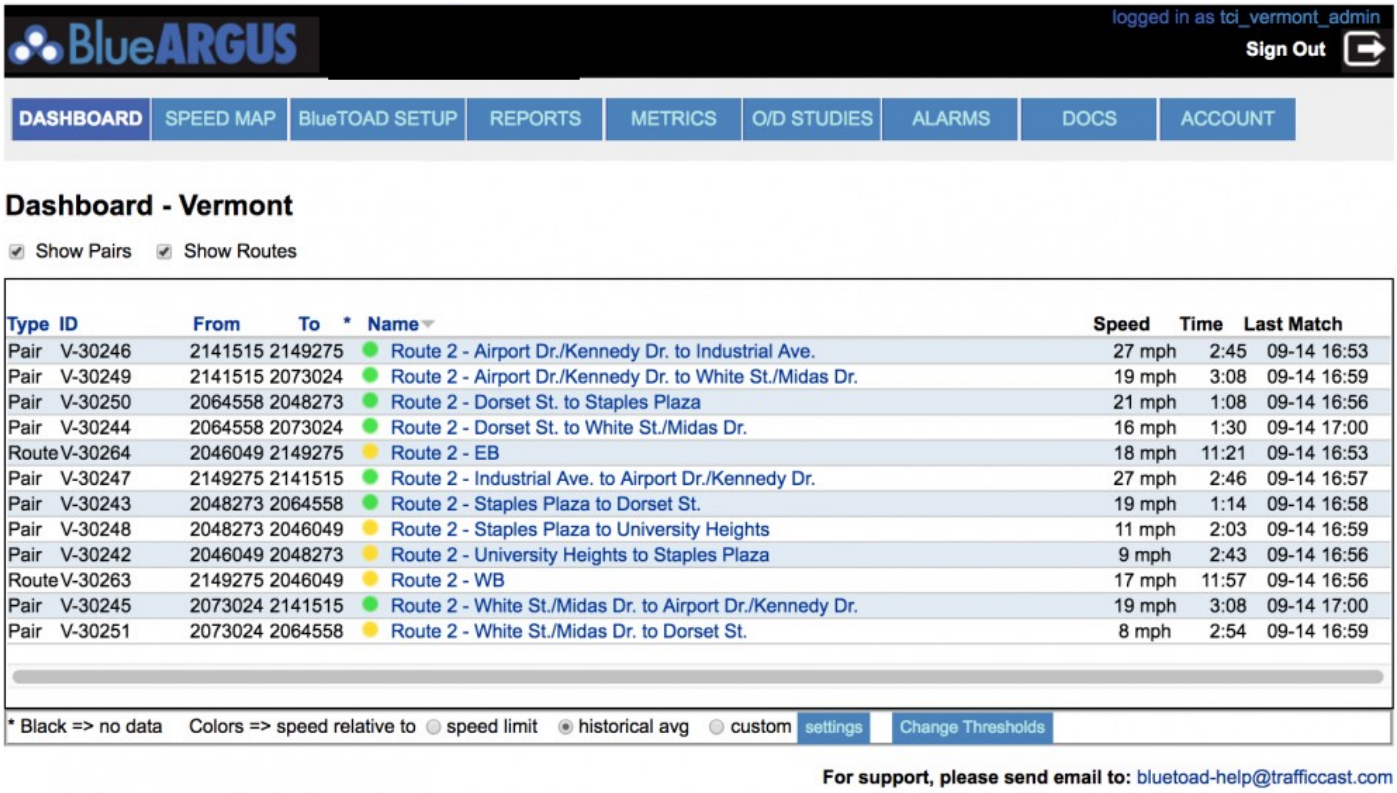
6. Repeat this until your route is complete and click on Save Route
    a. notice that the pair IDs and pair names that make up your newly created route are automatically populated
    b. likewise, the Start and End Device IDs and names, as well as the route length (which is the sum of the lengths of all the pairs that make up the route) are automatically populated

7. Fill out the remaining pair attributes
    a. tip – use the Add Reverse functions to save time

8. Click Save Route

4. Dashboard

The Dashboard tab provides a snapshot in a list format of all pairs and routes for your system, including its speed, travel time, and associated threshold status.



Type – either pair or route (note: each and every pair and route is included in the Dashboard list, however, you can select to just show pairs, or JUST show routes)

ID – identifying number for each pair and route

From – ID number for the device that marks the beginning point of each pair and route

To – ID number for the device that marks the end point of each pair and route

* – current status of the pair/route, ranging from black (no data) to blue (speed above normal), based either on speed limit, historical average over the last 12 weeks, or custom historical ranges. Default threshold values may be edited as well.

Name – name of the pair or route. The info is pulled directly from the pair and route tabs. Clicking on the name of the pair or device will bring up its sub-tabs (see BlueTOAD Setup): Performance, Details, Location, & Reports, with it defaulting to Performance

Speed – current speed along the pair/route

Time – current travel time to traverse the length of the pair/route

Last Match – date and time of last match for any pair within a route

4.1. How to change the dashboard comparison index

The Dashboard can be set to compare the current conditions to either the speed limit, the historical average, or a custom value. To change this option:

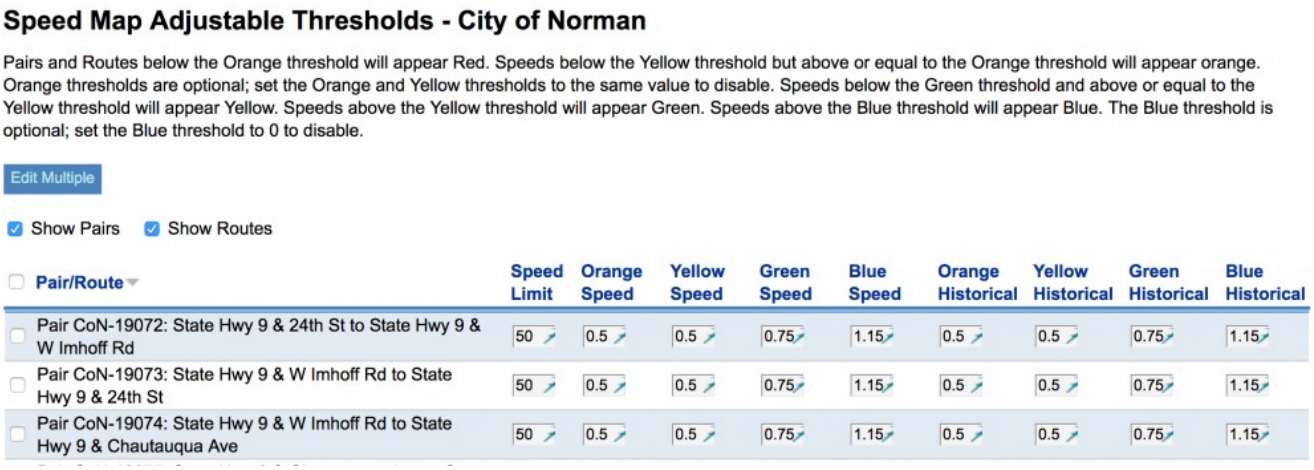
1. scroll down to the bottom of the Dashboard where you will see Colors => speed relative to
2. you can select from the three options: speed limit, historical average, and custom
3. if you select custom, select settings to go in and define your custom comparison range
4. whichever option you select should result in the dashboard automatically refreshing to show you the new comparisons – current data as compared to the option you selected

4.2. How to change the threshold levels in the dashboard

The thresholds for the Dashboard, which define what the various color dots in the list represent, can be customized by the user. These same thresholds are used to define the colors of the pairs in the Speed Map. You can change the thresholds levels here or under Speed Map as they both lead to the same editing page. To change the threshold levels:

1. scroll down to the bottom of the Dashboard where you will see Change Thresholds

2. clicking on Change Thresholds will bring up a new page showing the existing thresholds for every pair and route in your system based on both speed limit comparisons as well as historical comparisons – note that the thresholds can be different for each of the two comparisons



Speed Map Adjustable Thresholds - City of Norman

Pairs and Routes below the Orange threshold will appear Red. Speeds below the Yellow threshold but above or equal to the Orange threshold will appear orange. Orange thresholds are optional; set the Orange and Yellow thresholds to the same value to disable. Speeds below the Green threshold and above or equal to the Yellow threshold will appear Yellow. Speeds above the Yellow threshold will appear Green. Speeds above the Blue threshold will appear Blue. The Blue threshold is optional; set the Blue threshold to 0 to disable.

Edit Multiple

Show Pairs Show Routes

Pair/Route	Speed Limit	Orange Speed	Yellow Speed	Green Speed	Blue Speed	Orange Historical	Yellow Historical	Green Historical	Blue Historical
Pair CoN-19072: State Hwy 9 & 24th St to State Hwy 9 & W Imhoff Rd	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15
Pair CoN-19073: State Hwy 9 & W Imhoff Rd to State Hwy 9 & 24th St	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15
Pair CoN-19074: State Hwy 9 & W Imhoff Rd to State Hwy 9 & Chautauqua Ave	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15

Example of redefining thresholds

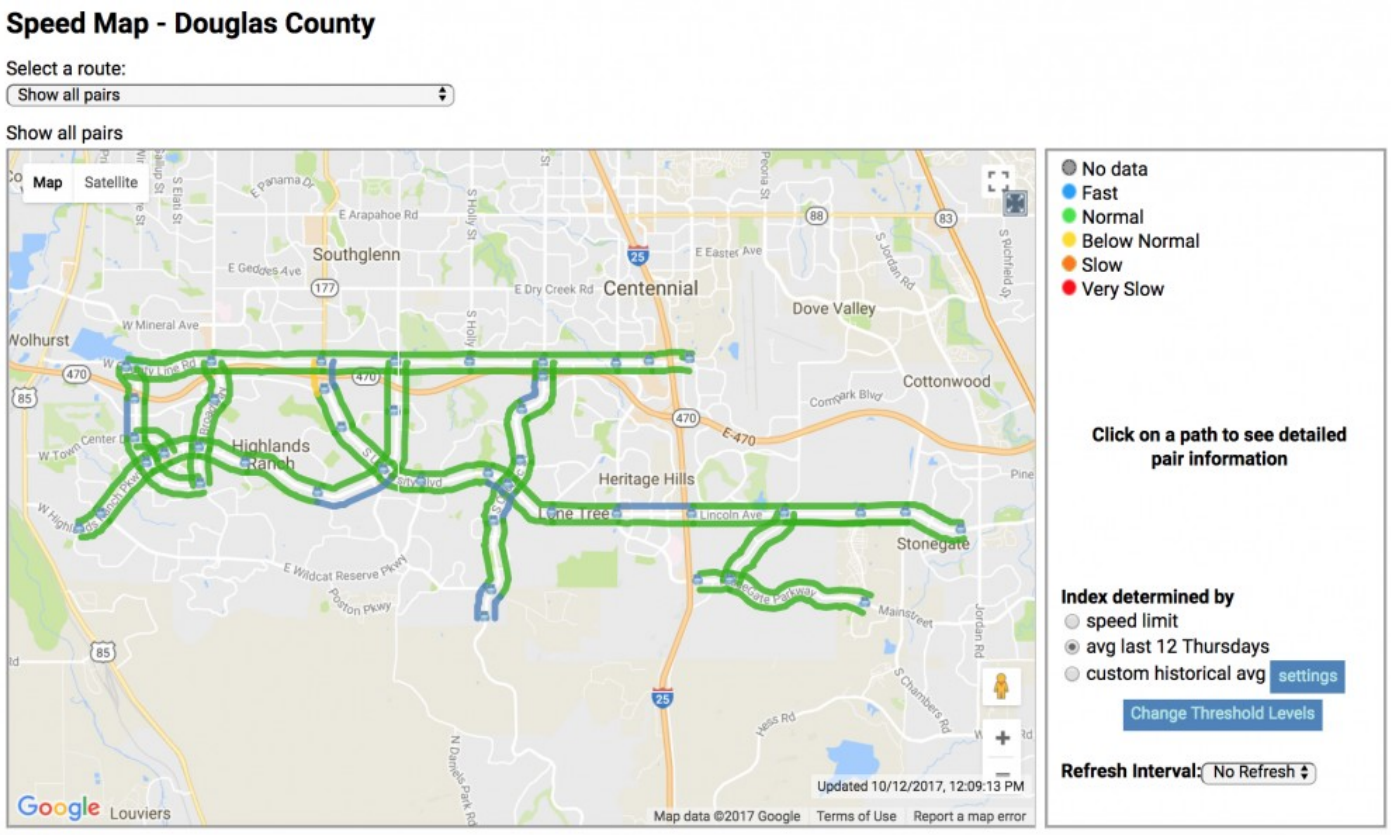
3. change the thresholds to your desired levels for each pair/route and then click Save

4. to return to the default threshold level, simply click on Reset to Defaults at the bottom of the screen

5. Other Options/Tips – to change a large number of pair and/or route thresholds, select the Edit Multiple button near the top of the threshold adjustment page

5. Speed Map

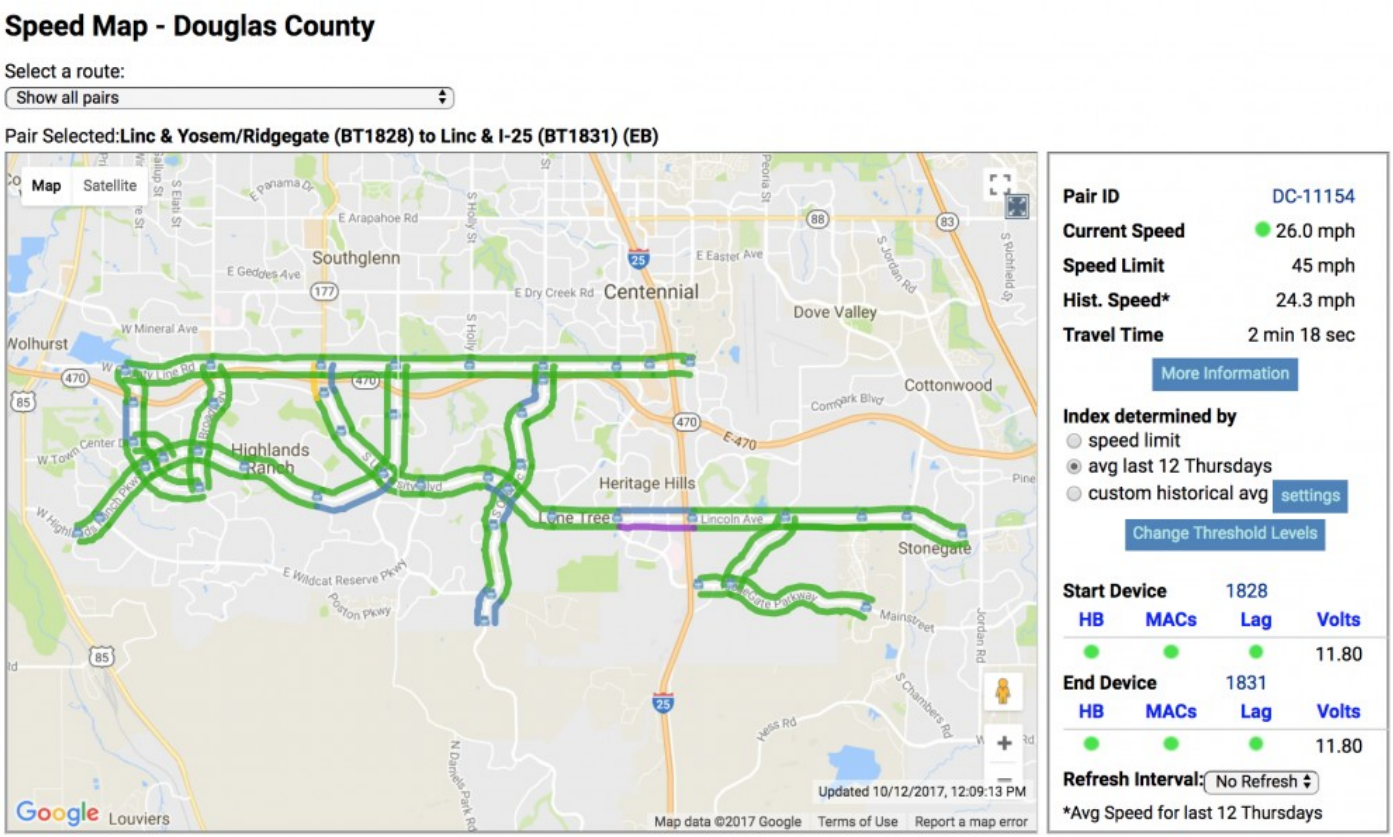
The Speed Map – shows real-time conditions for pairs and routes (via the drop down menu) using color coded threshold levels



Example of Speed Map with current conditions compared to historical data

Like with the Dashboard, the Speed Map can be set to compare the current conditions to either the speed limit, the historical average, or a custom value and the thresholds have default values that can be customized by the user.

Left clicking on a pair on the map will highlight that pair in purple on the map and display information on it to the right of the screen.

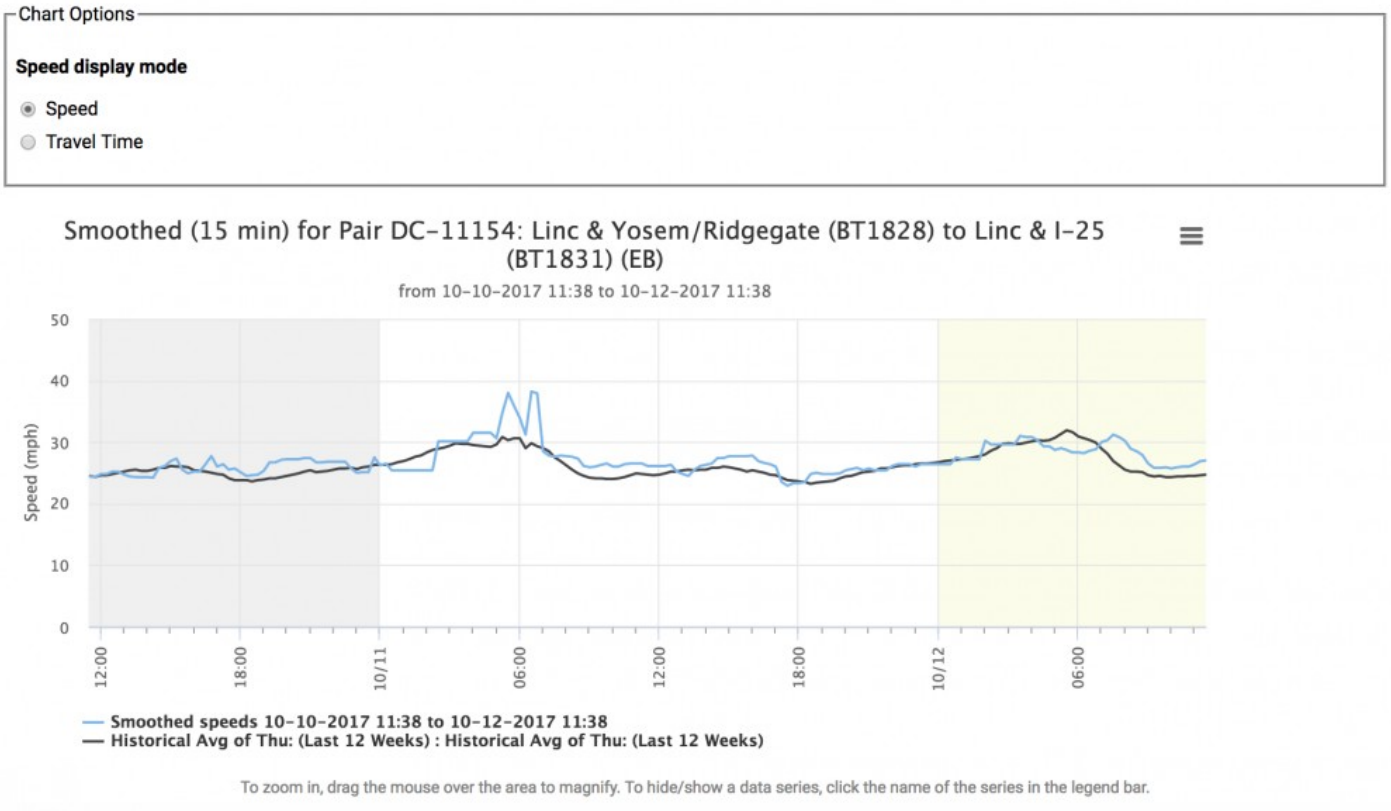


Data as a result of left-clicking on a pair on the Speed Map

Data displayed to the right of the Speed Map:

Pair ID – the ID for the pair that you clicked on in the Speed Map
Current Speed – the current average speed along that pair as calculated from BlueTOAD data
Speed Limit – the speed limit along the stretch of road that the pair traverses
Historical Speed – the average/typical speed along the selected pair for the same day and time over the last 12 weeks. For example, if you clicked on a pair on the Speed Map at noon on a Friday, then the Historical Speed would be the average speed for the last 12 Fridays around noon
Travel Time – the current average travel time for the length of the pair
Index determined by – this is where you select what you want to compare the current conditions to: either the speed limit, the historical speed (avg last 12 _____), or a custom historical avg defined by the user by clicking on settings
Start Device & **End Device** – lists the starting and end device for the pair in question and shows if the devices are currently operating with no issues (HB, MACs, Lag, Volts)
Refresh Interval – how often do you want the Speed Map to refresh with new data: no refresh, every 2 minutes, every 5 minutes, and every 10 minutes

In addition to the data displayed to the right of the Speed Map once you click on a pair on the map, a chart also appears below the Speed Map that gives you a graphical display of the last 48 hours of data (speed or travel time) for the selected pair. Furthermore, this last 48 hours is also compared to the currently selected index (speed limit, historical, custom historical) that you selected to the right of the Speed Map.



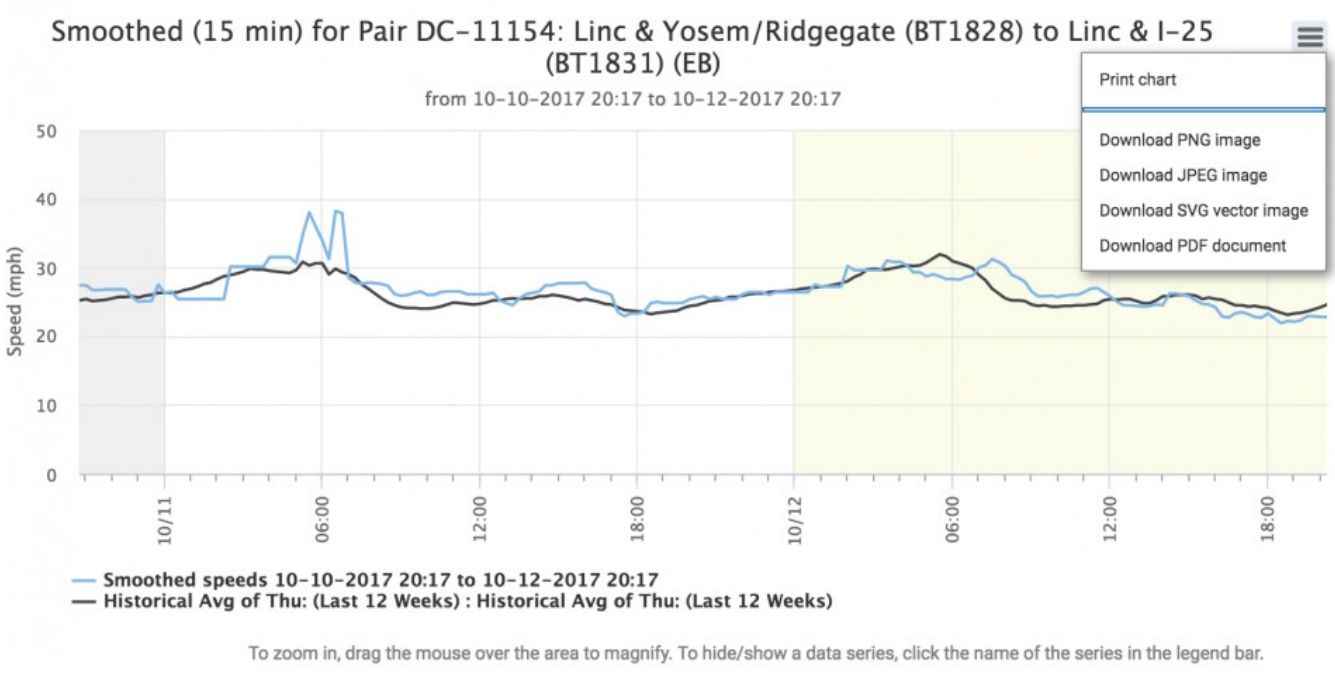
Data/options for the graph displayed below the Speed Map:

Speed display mode – you can have the graph be based on Speed or Travel Time
Smoothed Speeds – if you have the speed display mode set to Speed, then there will be a line on the graph showing the last 48 hours of average speeds along the selected pair as calculated from BlueTOAD data. You can turn hide/show this line by clicking its name in the legend below the graph.
Speed Limit – if you have the currently selected index set to speed limit, then there will be a line on the graph showing the speed limit along the stretch of road that the pair traverses. This would be a straight line as the speed limit is assumed not to change during the course of the pair. You can turn hide/show this line by clicking its name in the legend below the graph.
Historical Avg of ___: (Last 12 Weeks) – if you have the currently selected index set to avg last 12 ____, then there will be a line on the graph showing data for the last 12 weeks for your particular day. You can turn hide/show this line by clicking its name in the legend below the graph.

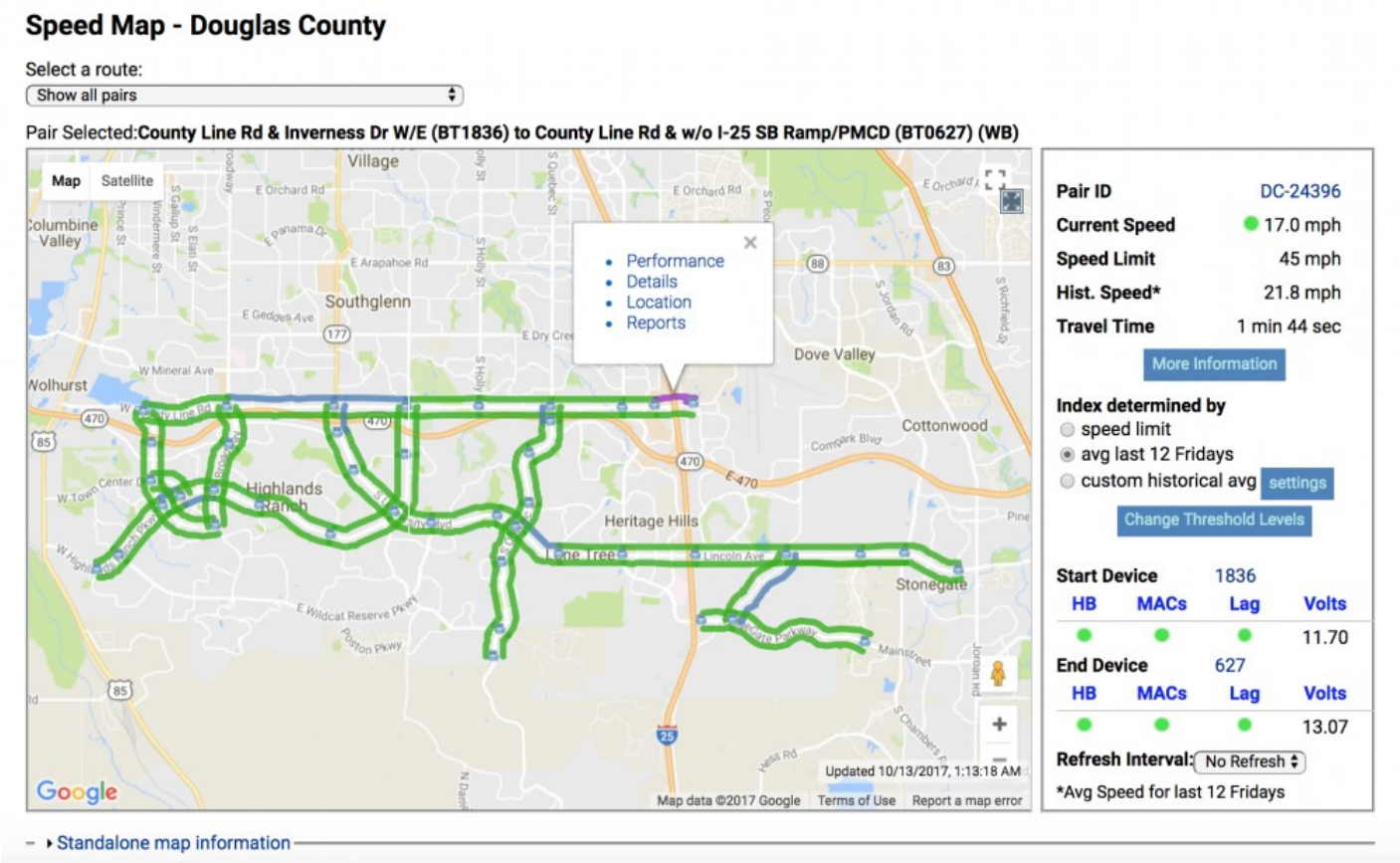
Custom Historical/Varies – if you using a custom historical avg, then there will be a line on the graph showing data for this custom time period. You can turn hide/show this line by clicking its name in the legend below the graph.

Zoom Feature – to zoom into a closeup view of a segment of the graph, simply click and hold the mouse button and draw a box around the area of interest and release the mouse button. To return the full graph, click Reset zoom

Print/PDF/Create an image file – to create an image file or PDF of the graph, or to print the graph, click on the button made up of three horizontal bars in the upper right corner of the graph and it will allow you to export the current graph.



In addition to the data displayed to the right of the Speed Map and the chart below the Speed Map, you can also right click on a pair on the map and then select one of the four (4) sub-tabs (Performance, Details, Location, Reports) that would take you directly to the Pairs sub-tabs



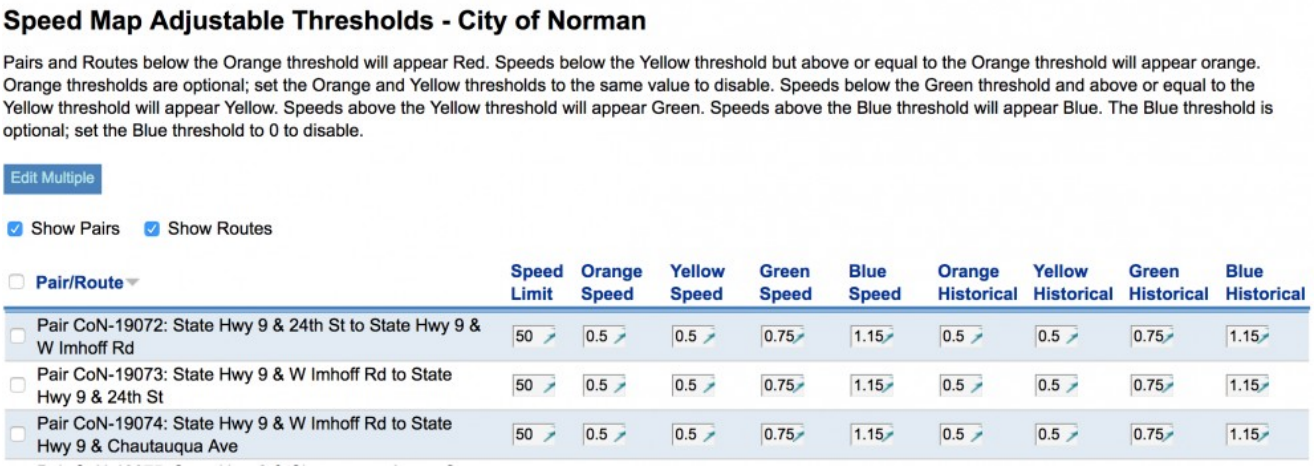
You can do the same with routes by selecting a route from the drop down list at the top of the Speed Map and then right clicking on the little toad next to the drop down list on the Speed Map and selecting one of the options (Performance, Details, Location, Reports) that take you directly to the Routes sub-tabs.

5.1. How to change the threshold levels in the speed map

The thresholds for the Speed Map, which define what the various colors on the map represent, can be customized by the user. These same thresholds are used to define the colors of the dots in the Dashboard. You can change the thresholds levels here or under the Dashboard as they both lead to the same editing page. To change the threshold levels:

1. to the right of the map, select Change Threshold Levels

2. this will bring up a new page showing the existing thresholds for every pair and route in your system based on both speed limit comparisons as well as historical comparisons – note that the thresholds can be different for each of the two comparisons



Speed Map Adjustable Thresholds - City of Norman

Pairs and Routes below the Orange threshold will appear Red. Speeds below the Yellow threshold but above or equal to the Orange threshold will appear orange. Orange thresholds are optional; set the Orange and Yellow thresholds to the same value to disable. Speeds below the Green threshold and above or equal to the Yellow threshold will appear Yellow. Speeds above the Yellow threshold will appear Green. Speeds above the Blue threshold will appear Blue. The Blue threshold is optional; set the Blue threshold to 0 to disable.

Edit Multiple

Show Pairs Show Routes

Pair/Route	Speed Limit	Orange Speed	Yellow Speed	Green Speed	Blue Speed	Orange Historical	Yellow Historical	Green Historical	Blue Historical
Pair CoN-19072: State Hwy 9 & 24th St to State Hwy 9 & W Imhoff Rd	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15
Pair CoN-19073: State Hwy 9 & W Imhoff Rd to State Hwy 9 & 24th St	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15
Pair CoN-19074: State Hwy 9 & W Imhoff Rd to State Hwy 9 & Chautauqua Ave	50	0.5	0.5	0.75	1.15	0.5	0.5	0.75	1.15

Example of redefining thresholds

3. change the thresholds to your desired levels for each pair/route and then click Save

4. to return to the default threshold level, simply click on Reset to Defaults at the bottom of the screen

5. Other Options/Tips – to change a large number of pair and/or route thresholds, select the Edit Multiple button near the top of the threshold adjustment page

5.2. Comparison index options

Speed Limit – shows current, real-time conditions vs. a constant, pre-defined speed limit for each pair.

Avg. of Last 12 Same Days/Time – shows current, real-time conditions vs. the average of the last 12 same days of the week (example – the last 12 Fridays)

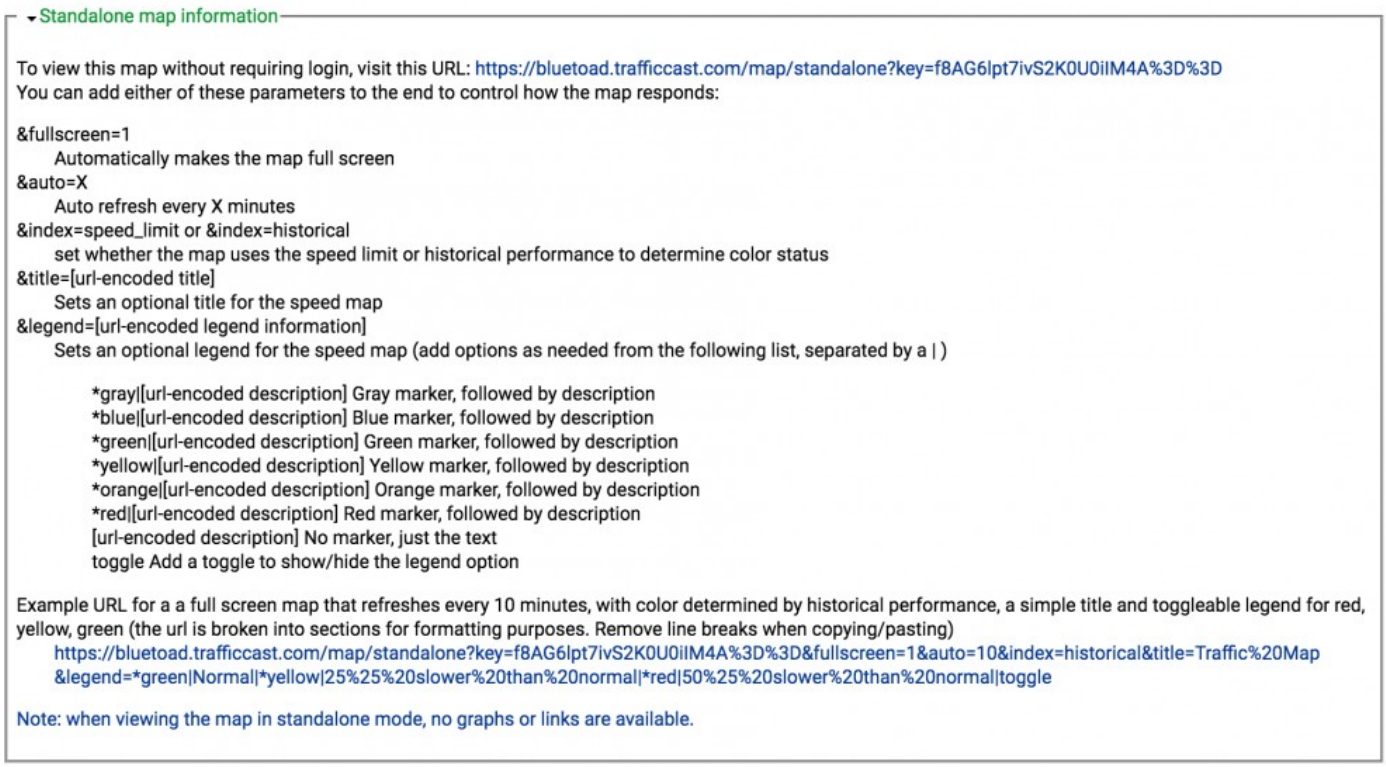
Custom Historical Avg. – shows current, real-time conditions vs. custom historical averages (example – Tuesdays through Thursdays for the last six (6) months since school has been in session)

5.3. Standalone maps

Select Standalone map information at the bottom of the Speed Map page

Produces a URL/link that can be used on any web browser

Great for:
TMC display walls
Second monitors
For use by non-technical users
Mobile devices



List of Standalone Map extensions

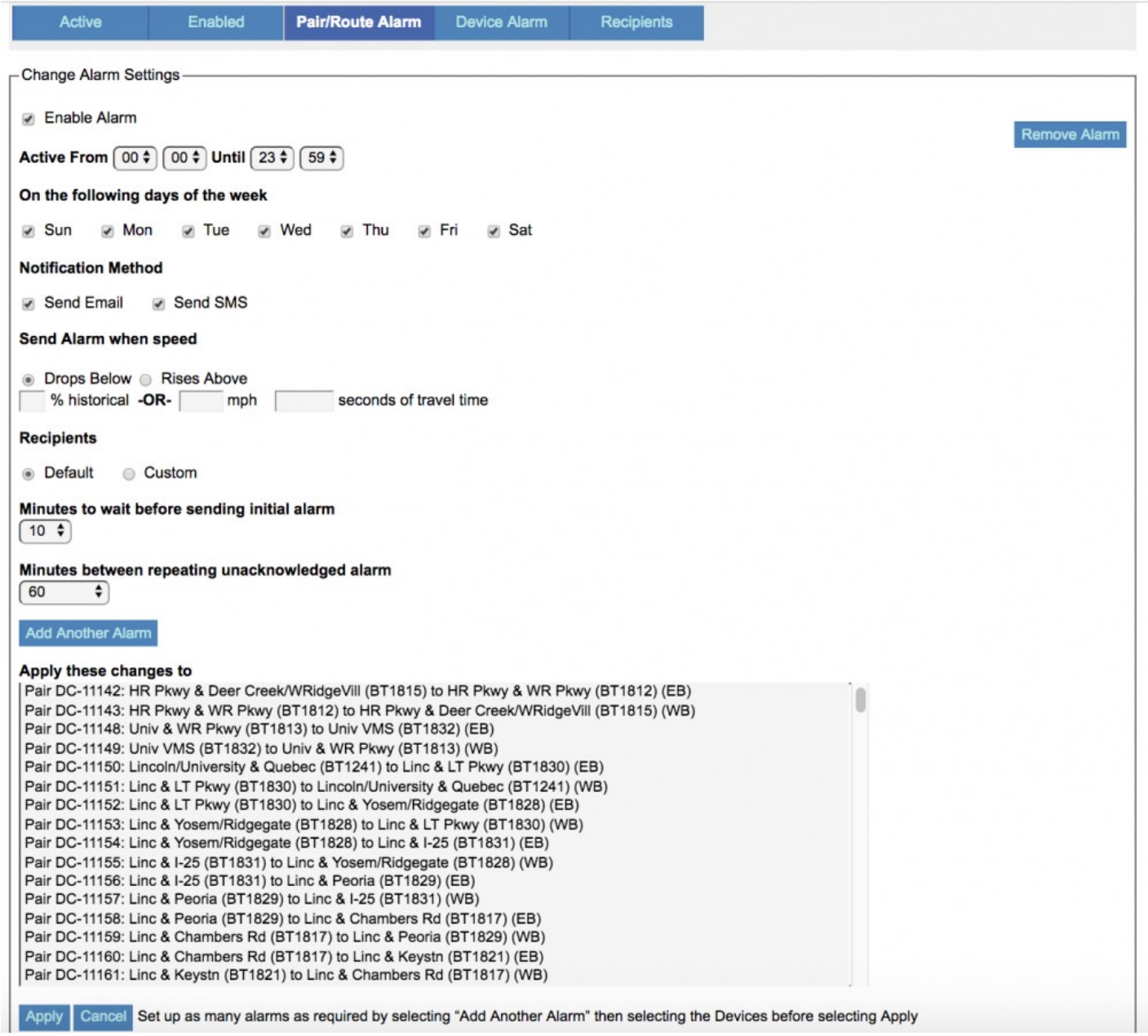
Customizable – Full screen vs. windowed, refresh rates, index (speed limit vs. historical) etc. By adding the extensions listed on the page to the end of your URL, you can customize your Standalone Map. For example, to set the Standalone Map to automatically refresh every five (5) minutes, simply add “&auto=5” to the end of the provided URL. Once you have your desired extensions added, you can bookmark or send out the modified URL and not have to set it up each time.

6. Alarms

Alarms are automatic notifications sent to uses via email and/or text messages that are based on user-defined metrics, either speed/travel time or device operations. The user can set the criteria at various levels and for particular pairs, routes and devices. When the criteria have been met then the selected users will get a notification informing them of the alarm. One of the receiving users would then go to the Alarm tab and acknowledge the alarm. If no user acknowledges the alarm within a defined time period, then the alarm is sent out to all selected users once again.

6.1. How to create new alarms

1. Click on Alarm tab in the main menu bar at the top of the screen
    a. the sub-tab Active will already be selected by default, this lists alarms that have been triggered and are currently “going off”
    b. the sub-tab Enabled is an inventory of all the created, but not currently going off, alarms in the system
2. Click on Pair Route Alarm to create an alarm based on traffic conditions (speed and travel time) or select Device Alarm to create an alarm based on device operations
3. Select the timeframe and days of the week for the alarm, this is when the alarm will be active (but it would still need to be triggered)

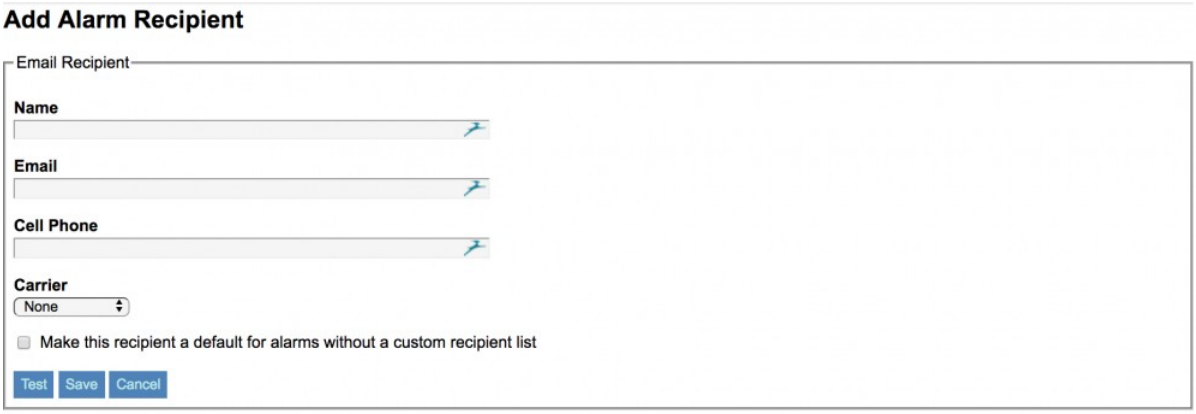


4. Select how you want the notifications to be sent out, either via Email or Text (SMS), or both.
5. Set the criteria for the alarm
    a. if you are creating a Pair/Route alarm then you will set the alarm to go off when the speed or travel time drops above or below a certain level
    b. if you are creating a Device alarm, then you will set the alarm to go off when an error in the device's operations (HB, MAC, Voltage, Latency) occurs
6. Select who you want the alarm notification to be sent to: either the Default list or by selecting user names underneath the Custom option

7. Select how long the condition (see #5 above) has to be met before the alarm is triggered. This keeps you from getting an alarm every single time the speed drops below a certain point and instead makes it where the speed has to drop below your criteria (or above depending on your criteria) for 10 consecutive minutes before the system send out the alarm, for example.
8. Select the minutes the system will wait before resending an unacknowledged alarm out to the recipients once again
9. Select all of the pairs and routes that you want to apply the above options and criteria to and then hit Apply

6.2. How to add new alarm recipients

1. Click on Alarm tab in the main menu bar at the top of the screen
2. Select the sub-tab Recipients



Adding an Alarm Recipient

3. Enter the new recipient's name, email and cell phone number
    a. make sure to select their cell phone carrier so that the alarm notification can be formatted correctly
4. Select if you want this new user to be included in the Default recipient list
5. Hit Save to save the new recipient's info and they will now be an option when assigning alarm notifications

7. Reports

There are five types of reports:

Pair/Route Reports – report for individual pairs or routes over a specific time period

Comparison Reports – report for comparing more than one route or pair (or the same route or pair over different time periods)

Historical Reports – report for individual pairs or routes over various time frames and indexes

Device Reports – report showing MAC counts for any device

Alarm Reports – report showing past alarm activity

7.1. Pair/Route Reports

Pair/Route Reports – report for individual pairs or routes over a specific time period

7.1.1. How to create a pair/route report

1. select your pair or route of interest

2. select a Start Date and an End Date for when data will be pulled

3. select a Start Time and an End Time for analysis

4. check/uncheck Daily Start/End Times (if checked – it will separate the graph into distinct days, if unchecked – it will give you one continuous graph over all days)

5. select a Report Type
   a. smoothed with 5 or 15 min bins, filtered through our algorithms
   b. individual data points
   c. others
   d. others

6. select Output Type: HTML, CSV, Graph

Additional Things to Note, Options, Tips

- Pair/Route reports can be scheduled which allows for reports to be automatically generated and emailed to the selected recipients on a set, recurring schedule (see How to schedule a report).
- Always use the Generate Report button to go back and change any settings as this will retain what you have already entered. Hitting your browser's Back button may cause you to have to re-enter everything.
- Display LOS – only available if road classification was selected for the pair/route when it was added to the system
- Comparison Index – very useful, much like the Real Time Map, it compares your pair/route to three possible indexes: speed limit, last 12 weeks, and a custom historical average. Multiple indexes can be created.
- Days of the Week – "Each" means data will be pulled for every day of the week included in your date range, in our example, Mon-Fri. Or you can pick specific days such as compare our Mon-Fri to the average Wednesday.

7.2. Comparison Reports

Comparison Reports – report for comparing more than one route or pair (or the same route or pair over different time periods)

7.2.1. How to create a comparison report

1. select your first pair or route of interest, and its Start Date and End Date
2. select your second pair or route, and its Start Date and End Date
3. select a Start Time and End Time for analysis
4. select Data Format (Travel Time or Speed) and Output Type:HTML, CSV, Graph

Additional Things to Note, Options, Tips, etc.

- You can also add Comparison Indexes to compare your pair/route to three possible indexes: speed limit, last 12 weeks, and a custom historical average. Multiple indexes can be created and the indexes are applied to each pair or route that you had of your selected
- You can select more than two pairs/routes to compare
- Comparison reports **cannot** be scheduled as of BlueARGUS 2.0

7.3. Historical Reports

Historical Reports – report for individual pairs or routes over various time frames and indexes

7.3.1. How to create a historical report

1. select the pair or route of interest
2. create, or, if already created, select Comparison Index #1 example: existing “All of June – 2015”, if you create a new one, check “Save these Settings”
3. repeat step #2 for as many comparison indexes as you want example: existing “All of June – 2016”
4. select Output Type: HTML, CSV, Graph

Additional Things to Note, Options, Tips

- Historical reports can be scheduled which allows for reports to be automatically generated and emailed to the selected recipients on a set, recurring schedule (see How to schedule a report).

7.4. Device Reports

Device Reports – report showing MAC counts for any device

7.4.1. How to create a device report

1. select the device of interest
2. select the Start Date and End Date
3. select the Start Time and End Time
4. select Output Type: HTML, CSV, Graph

Additional Things to Note, Options, Tips

- Device reports can be scheduled which allows for reports to be automatically generated and emailed to the selected recipients on a set, recurring schedule (see How to schedule a report).

7.5. Alarm Reports

Alarm Reports – report showing past alarm activity

7.5.1. How to create an alarm report

1. select what you want the report to cover (typically All Pairs/Routes/Devices)
2. select the Start Date and End Date
3. select the Start Time and End Time
4. select Output Type: HTML, CSV, Graph

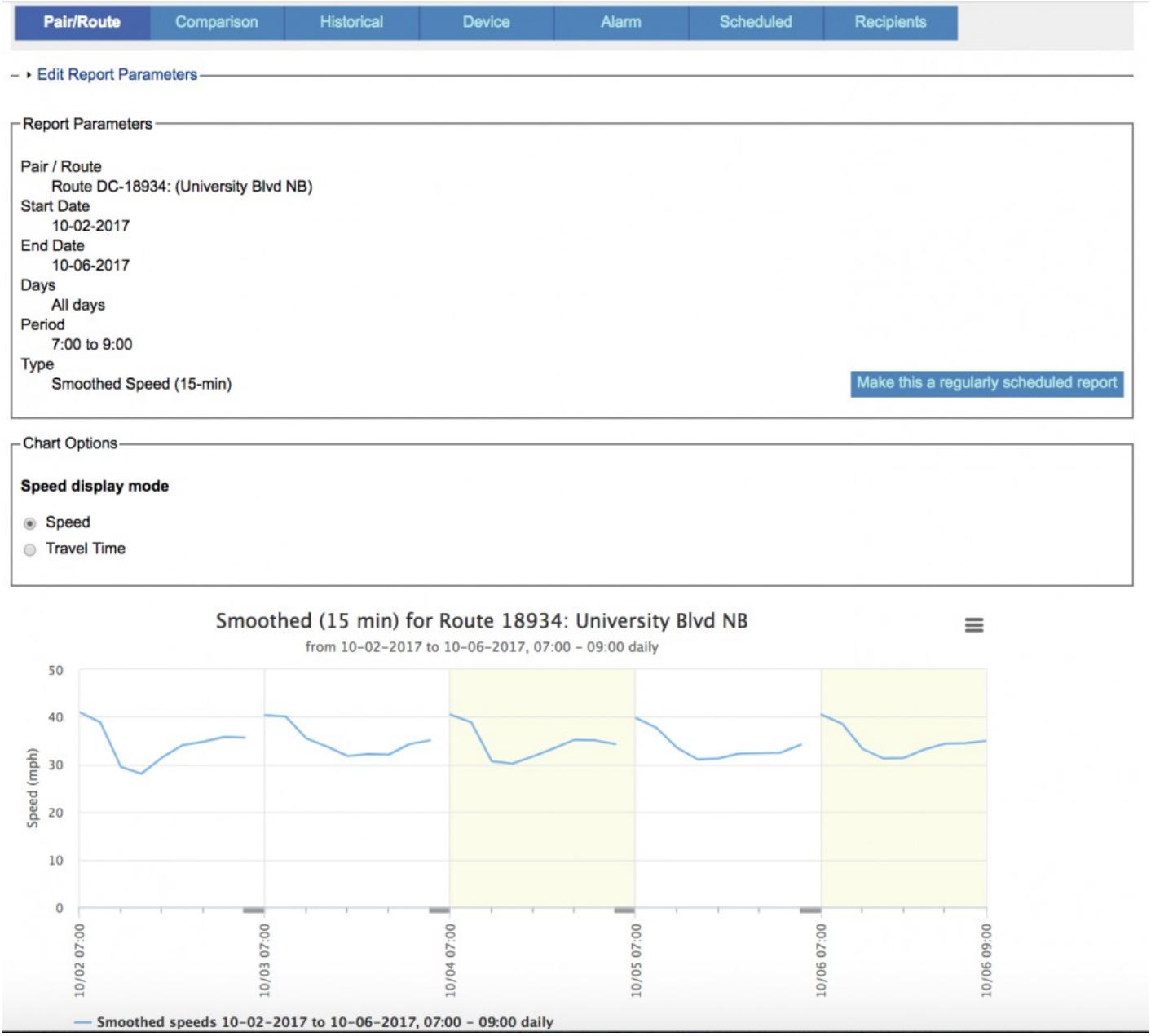
Additional Things to Note, Options, Tips

- Alarm reports can be scheduled which allows for reports to be automatically generated and emailed to the selected recipients on a set, recurring schedule (see How to schedule a report).

7.6. Scheduled Reports

Clicking on the Scheduled Reports sub-tab underneath the Reports tab does not allow you to create a new scheduled report, it simply lists those reports that have already been scheduled. You can click the name of an already scheduled report to change its settings and you can also see the Report Type, Frequency, Last Generated date and Next Generation date.

To actually create the scheduled reports however, you first have to create a one time occurrence of the report under its sub-tab (Pair/Route, Historical, Device or Alarm), run the one time report, and then, once you are satisfied with the results, click on Make this a regularly scheduled report to actually schedule it.



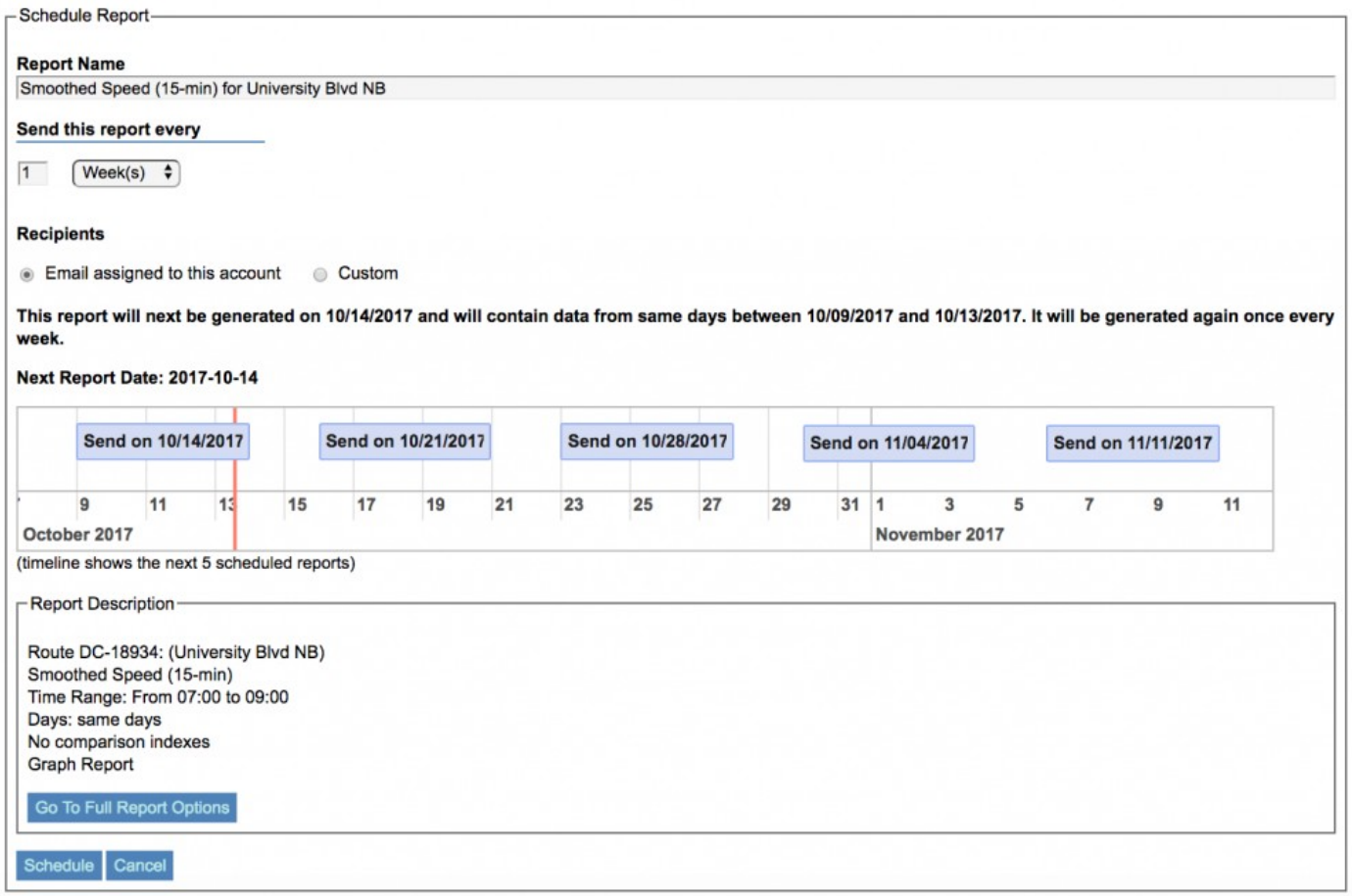
Select the blue button on the right to schedule this one time report

Once you have selected the Make this a regularly scheduled report button you will be taken to the Schedule Report setup screen.

7.6.1. How to create a scheduled report

1. first, run a one time report for the location/data/report type of interest

2. once you get the results of the one time report and are satisfied, click on the Make this a regularly scheduled report button on the results page, which will take you to the Scheduled Report setup page



3. Report name – use the default name or give the report a custom, more descriptive name – this is what will show up in your email inbox each time it is delivered.

4. Send this report every – select the frequency at which you want to receive future scheduled reports in your inbox

5. Recipients – select who the report should be delivered to each time, the default is to the email address of the user creating the report, but you can also do a custom list

6. You will then see a summary statement that notifies you of when the first report will be delivered as well as a graphical outline showing the first five (5) deliveries. If you hover your mouse over one of the deliveries (the blue boxes on the graphical outline), it will give you further information for that particular delivery.

Additional Things to Note, Options, Tips

- The Recipients for scheduled reports is the same as the list of possible alarm recipients
- Reports are delivered via email as soon as the specified date/time range is met. For example, if you setup a scheduled report that covers data for Monday through Friday then you would receive the report early Saturday morning since the data wasn't complete until Friday was over.
- Scheduled report data defaults to being "rolling", meaning that the data moves along the calendar as the year progresses. For example, if you selected for your initial report the time frame of Monday, July 1st, to Friday, July 5th, and then scheduled the report to be delivered once every week, then the next delivered report would have data for Monday, July 8th through Friday July 12th, and the one after that would be Monday, July 15th through Friday July 19th and so on.
- To create static, non-rolling data, you can select the Add Comparison Index button when creating your initial report, pick your comparison index (Speed Limit, Default Historical Average, Custom Historical Average) and assign the index a unique name (other than the default of "Comparison Index #1"). An example might be changing "Comparison Index #1" to "Last Week Before Signal Re-timing". Once you do this that comparison index is static and it does not progress as the calendar moves along. So therefore you would have the "before" case static and you can compare it to future "after" dates as the year moves along. To create a rolling comparison index you set it up the same way and just leave the default name rather than assigning it a specific name.

8. Metrics

The tab Metrics at the top of BlueARGUS refers to Travel Time Reliability (TTR), which is how you quantify the time involved in day to day traffic (e.g. commuters). There are three (3) main components of TTR:

1. Travel Time Index (TTI)
2. Buffer Time Index (BTI)
3. Planning Time Index (PTI)

TRAVEL TIME INDEX

The Travel Time Index (TTI) represents the comparison between the actual travel conditions compared to free flow conditions, represented in a ratio format. It is the expected congestion faced by a commuter on a daily basis.

For example, a travel time index of 1.50 means that a trip that takes 20 minutes in light traffic conditions, will take 30 minutes (50% more time) under congested operating conditions such as rush hour traffic

Travel Time Index = Average Travel Time / Travel Time Under Light Traffic Conditions

Example: Travel Time Under Light Traffic Conditions = 20 minutes
Average Travel Time (data pulled from BlueTOAD devices) = 26 minutes

Travel Time Index = 26 minutes / 20 minutes = 1.30 TTI

BUFFER TIME INDEX

Once we have determined the TTI using BlueTOAD data, we can determine the volatility of the commute by calculating the Buffer Time Index (BTI). Buffer Time Index (BTI) represents the EXTRA time (or time cushion) that travelers must add to their average travel time when planning trips to ensure on-time arrival by accounting for “worst case” scenarios (90% or 95% travel time from BlueTOAD data).

For example, a buffer index of 1.40 means that for a trip that usually takes 20 minutes, a traveler should budget an additional eight (8) minutes (40% more time) to ensure on-time arrival 95% of the time

Average travel time = 20 minutes
Buffer index = 40%
Buffer time = 20 minutes × 0.40 = 8 minutes of ADDITIONAL TIME

PLANNING TIME INDEX

Planning Time Index (PTI) represents the TOTAL time that a traveller should allow to ensure on-time arrival 90% or 95% of the time. It is the sum of the time calculated for every day traffic (from TTI) and for “worst case” 90% / 95% data (from BTI). For example, a Planning Time Index of 1.60 means that for a trip that takes 15 minutes in light traffic, a traveler should budget a total of 24 minutes to ensure on-time arrival 95 percent of the time.

Free-flow travel time = 15 minutes
Planning time index = 1.60
Planning time = 15 minutes × 1.60 = 24 minutes TOTAL TRAVEL TIME
Time from TTI + Time from BTI = Time from PTI

8.1. How to create a travel time reliability report

1. select the route/pair of interest
2. set the Free Flow Speed (typically the speed limit or speed limit +5mph)
3. select the Date Range, Days of Week (the default is “All”), and Time Period
4. select the interval to display data in, how to group data sets, and Confidence Percentage (90% or 95%) for the Planning Time Index

8.2. How to create a travel time reliability comparison report

1. select the Date Range, Days of Week (the default is “All”), and Time Period

2. select interval to display data in, how to group data sets, and Confidence Percentage (90% or 95%) for the Planning Time Index

3. select the route/pair of interest for Item #1, and if you want to include the reverse route/pair and any subsidiary pairs (routes only)

9. O/D Studies

Study Title – can be whatever you want it to be

Start Date – date and time of when the data started to be pulled for O/D study

End Date – the end date and time of the O/D study

Status – Ready for Viewing if the study is complete, In Progress otherwise

Paths in Study – list of all the user-defined paths in the O/D study

Edit – use as a shortcut to repeat a study for different dates without having to re-enter everything. Can create a new one or overwrite the existing one

9.1. How to create an O/D study

1. input a name for the study
2. select a date/time range for the study
3. click on “Add a path to the comparison”
4. select the starting point on the map, the icon will turn green
5. select the end point on the map, the icon will turn blue
6. a popup window will ask if you would like to add a waypoint, if you add one it will turn yellow. The Origin, Destination and Waypoint fields will populate automatically. The path/pair distance will fill in automatically if an existing pair matches your O/D path, otherwise it will need to be entered manually.
7. repeat Steps 3-6 for all desired paths in the O/D study
8. hit Save

10. Need More Help?

For BlueARGUS Software Related Issues & Questions:

Contact Shannon Fain (PE), Product Specialist

- email: sfain@Iteris.com
- mobile: 404.771.7479

For BlueTOAD Account, Access, Hardware and Server Related Issues & Questions:

Contact our Help Desk

- online: trafficcast.zendesk.com
- email: bluetoad-help@Iteris.com
- direct number: 608.713.9299