

Locations Module and Signal Configuration

Kinetic Version: 1.8+

Created: May 19, 2025

Overview

The Locations module was introduced in Kinetic Mobility version 1.8. For Signals users, this module will be the starting point for configuration of new intersections in the system. The intention of this module is to allow users to organize devices and data around a physical location. This means that data from various modules can be tied to a location in the future. As of the 1.8 release, the following data from our different modules can be associated with a location:

- Asset Management
- Counts
- Ramp Meters
- Signals
- Signs
- Travel Time
- Video
- Weather

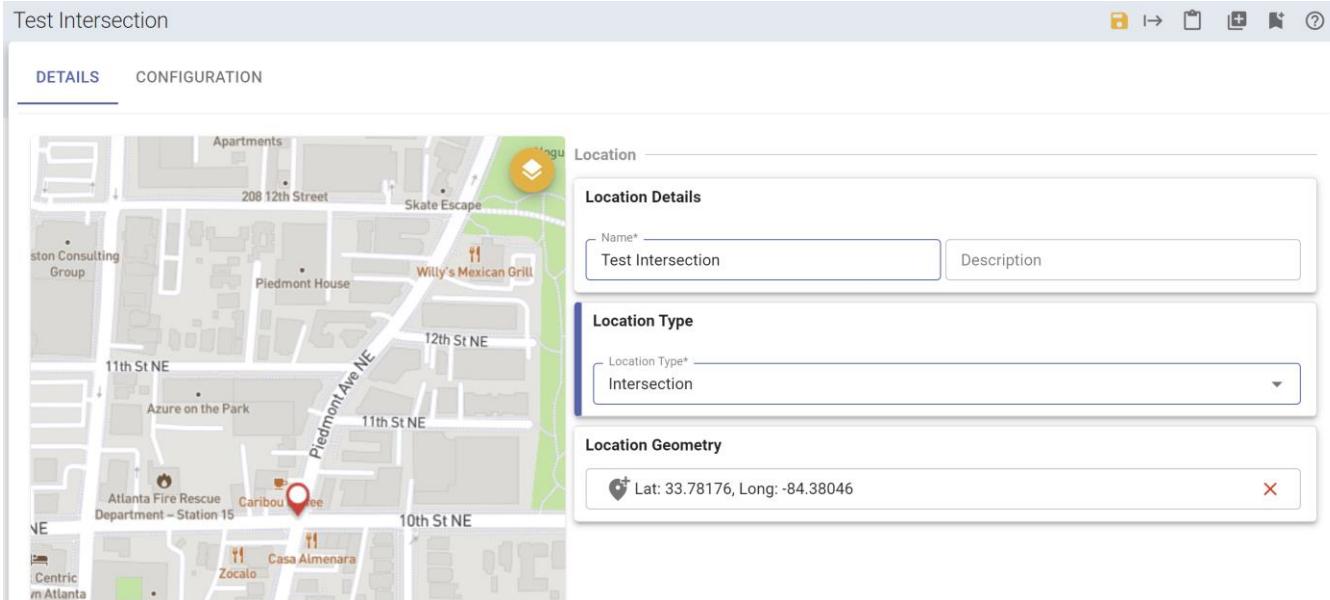
For configuration of a Signal or Ramp Meter, a user should begin by defining a Location, then proceed to configuring an associated Signal. The controller communication settings are configured separately under the Integrations module. The user will append this information to the Signal configuration so that the Location/Signal begins to receive status information.

Part 1: Create “Location”

- From the main menu, go to Locations > Manage Locations, then click the button Add Location. OR from the main map: right-click anywhere a new Location is desired, then click Create Location from the menu.

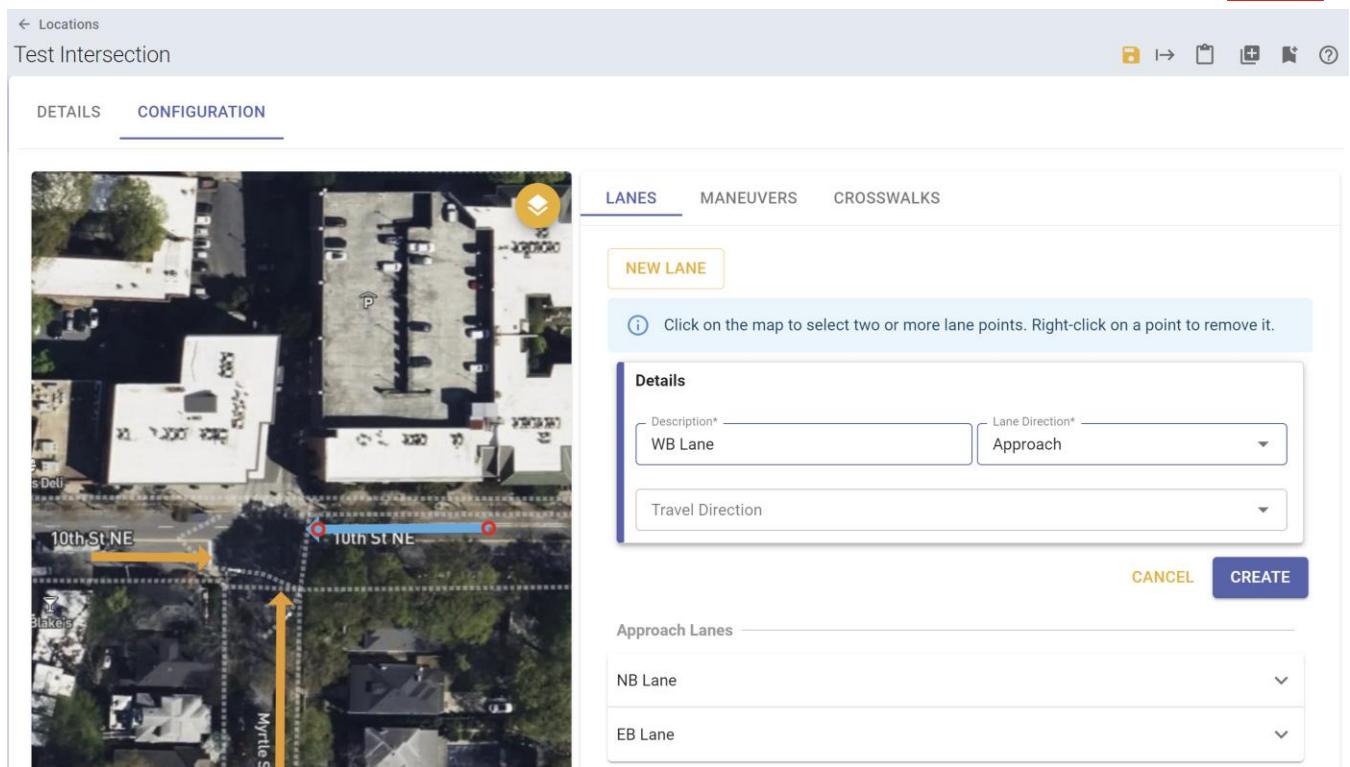
Note: Locations can also be created from Templates. From the main menu, go to Locations > Location Templates to manage templates. Location templates will be useful for intersections with common lane layouts, for example 2 lanes mainline, 1 lane side street. Templates cannot be applied to an existing Location.

- Give the Location a logical Name. Note: this name will be copied to the associated Signal as well.
- Make the Location Type “Intersection” for a Signal or “Ramp” for a Ramp Meter
- Give the location geometry by placing a pin on the desired coordinate.



- Move to the Configuration tab

Begin by configuring Lanes. The process to create new lanes are as follows: click New Lane, then click on the map to create the desired lane, then provide a description and assign Approach or Departure for lane direction. *Hint: Approach Lanes are those that approach the intersection, and Departure Lanes are those moving away from the intersection. Only one departure lane per direction is necessary.*



6. Create Maneuvers by linking approach lanes to a departure lane. Click on the lane arrow, then the 'connect' icon to create the maneuver. Use the listing on the right side of the map to review and delete maneuvers after they have been created. Best practice is to create as many maneuvers as you would like to see represented in the map display (i.e., Thrus, Lefts, Rights and U-Turns). Maneuvers will be assigned to signal phases during the Signal configuration step.

Locations

Test Intersection

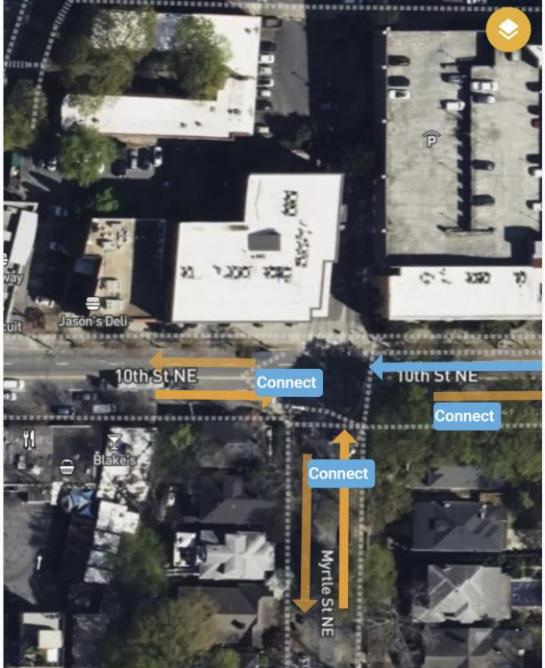
DETAILS **CONFIGURATION**

LANES **MANEUVERS** CROSSWALKS

EB Lane Maneuvers

NB Lane Maneuvers

⚠ No maneuvers have been configured. Click on a lane to configured a maneuver



7. Finally, configure crosswalks (if applicable) for the Location. Click New Crosswalk, then draw a line on the map representing the crosswalk location.

Locations

Test Intersection

DETAILS **CONFIGURATION**

LANES **CROSSWALKS**

NEW CROSSWALK

ⓘ Click on the map to select two or more crosswalk points. Right-click on a point to remove it.

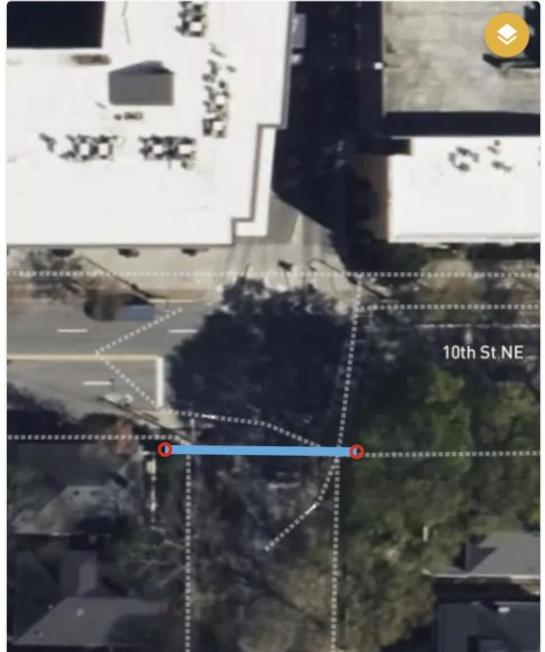
Crosswalk

Details

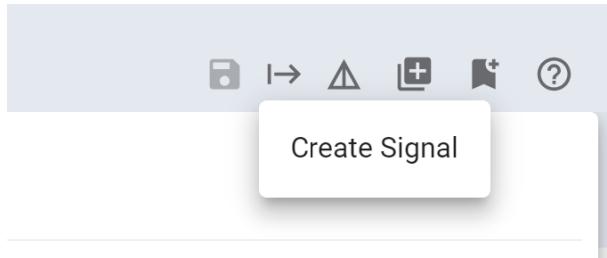
Description*

CANCEL **CREATE**

⚠ Crosswalks have not been configured for this Location.



8. The last step will be to click the Save button at the upper right of the screen. If this Location does not have an associated Signal yet, the option will now be available to create one. Click on the arrow icon, then Create Signal to move on to the next step.

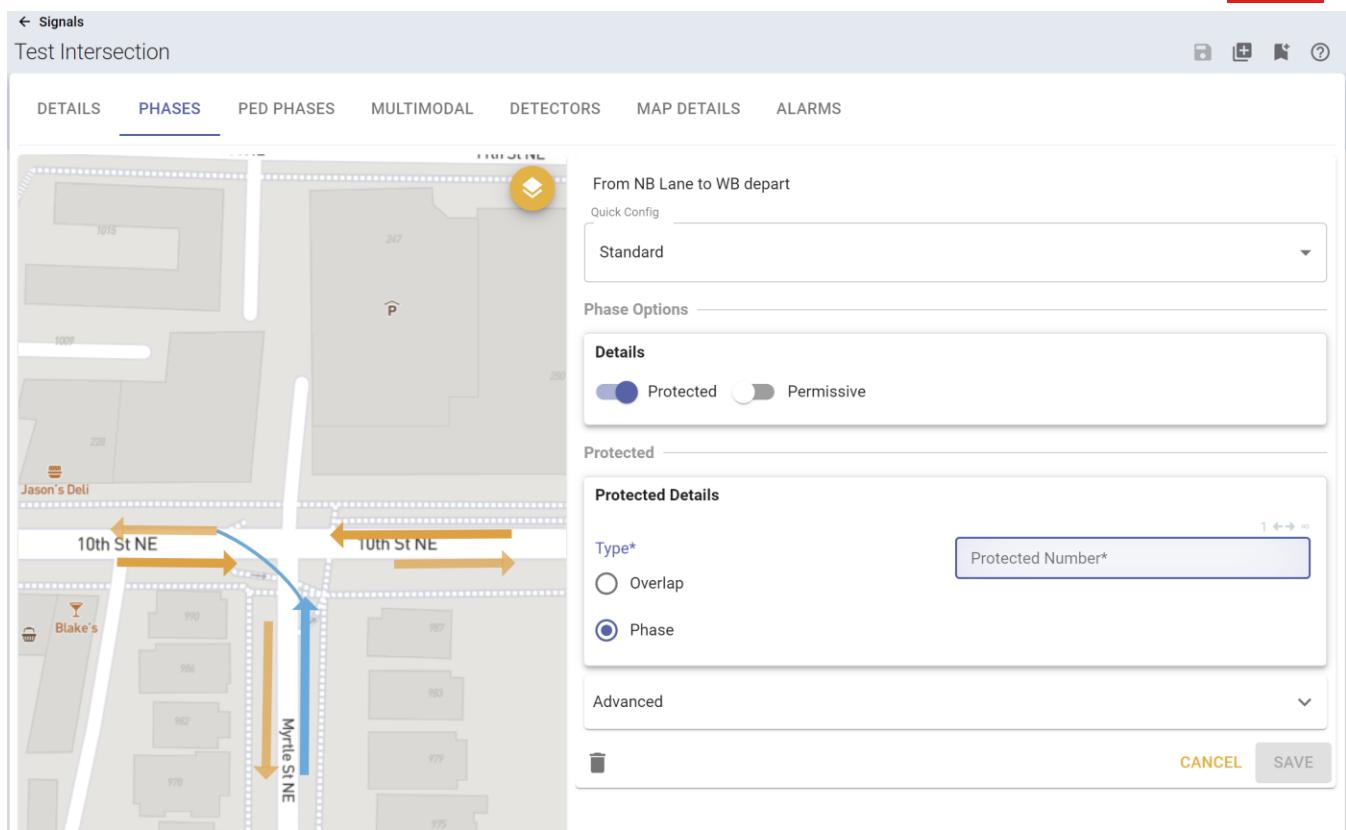


Part 2: Create “Signal”

1. New signal configuration, in most cases, should begin by following instructions from the previous section and defining a Location first. However, Signals may also be cloned or created from Signal Templates, in which case a Location will be created automatically. From the main menu, go to Signals > Signal Templates to manage templates and Signals > Manage Signals to manage all previously created signals.
Note: Signal Templates are useful for intersections with common lane layouts, phase numbering, and detector layout. Templates cannot be applied to an existing Signal. A Signal Template will also create a new Location, so if a Signal Template is used, skip Part 1.
2. Assign a Location to the Signal (will automatically be applied if continuing from previous section or using a template/clone). The Name and Coordinates for the Signal will automatically be copied from the associated Location. Optionally, enter any note, label, or Main Street phases, if desired.
3. Use the Add Device button to link a Signal Integration to the Location/Signal. The Integration contains all of the communication information for the device. Configuring an Integration is covered in the next section.

Note: the Device list drop-down only shows Integrations that are System Enabled and not attached to an existing Signal. The browser page may need to be refreshed to see newly created/enabled Integrations.

4. Configure Phase display by selecting a Maneuver (created in the previous section), then choosing the “pencil” icon in the right side menu. The user will be presented with options for configuring the Phase – note, these configuration options are for display of the map icons and do not affect the signal running in the field.

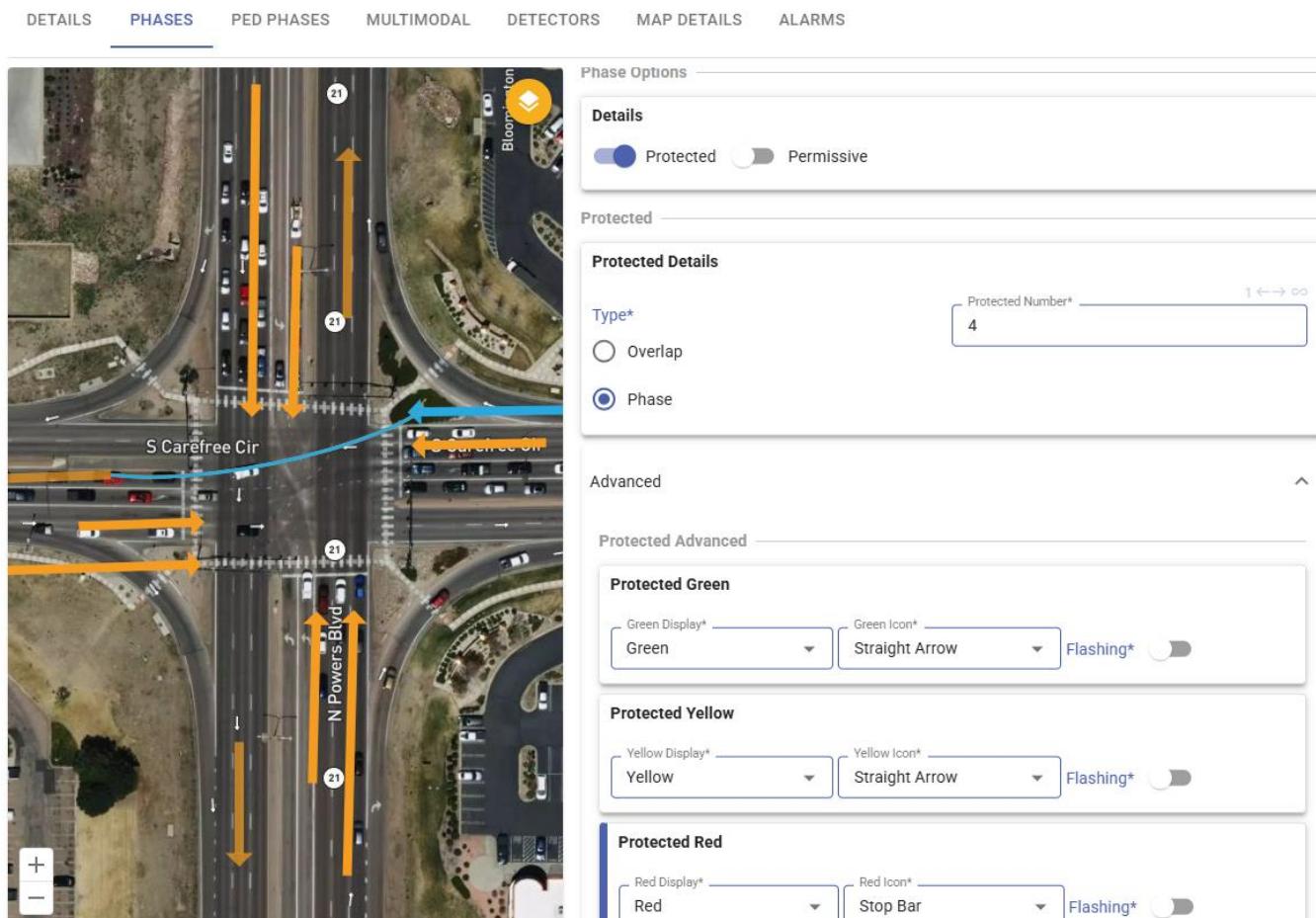


Hint: The “Quick Config” provides quick options for icon display. Within the dropdown, ‘Standard’ is for through or protected left turn phases, while ‘Flashing Yellow Arrow’ and ‘Five Section Protected Permissive’ provides options for PPLT/RT phases. ‘Manual’ will automatically be selected if Advanced display features are edited.

Example 1: Through Phase

The configuration below will generate an icon at the location of the WB through arrow to represent Phase 4 at the intersection. Based on the configuration shown, this icon would display: a green arrow during Phase 4 green, a yellow arrow during Phase 4 yellow, and a red stop-bar during Phase 4 red.

Both the display color and shape of the icon for each phase indication (R, Y, G) can be edited by viewing the 'Advanced' options. Kinetic Mobility reads the controller real-time status information and converts it into an icon display based on the configuration below.

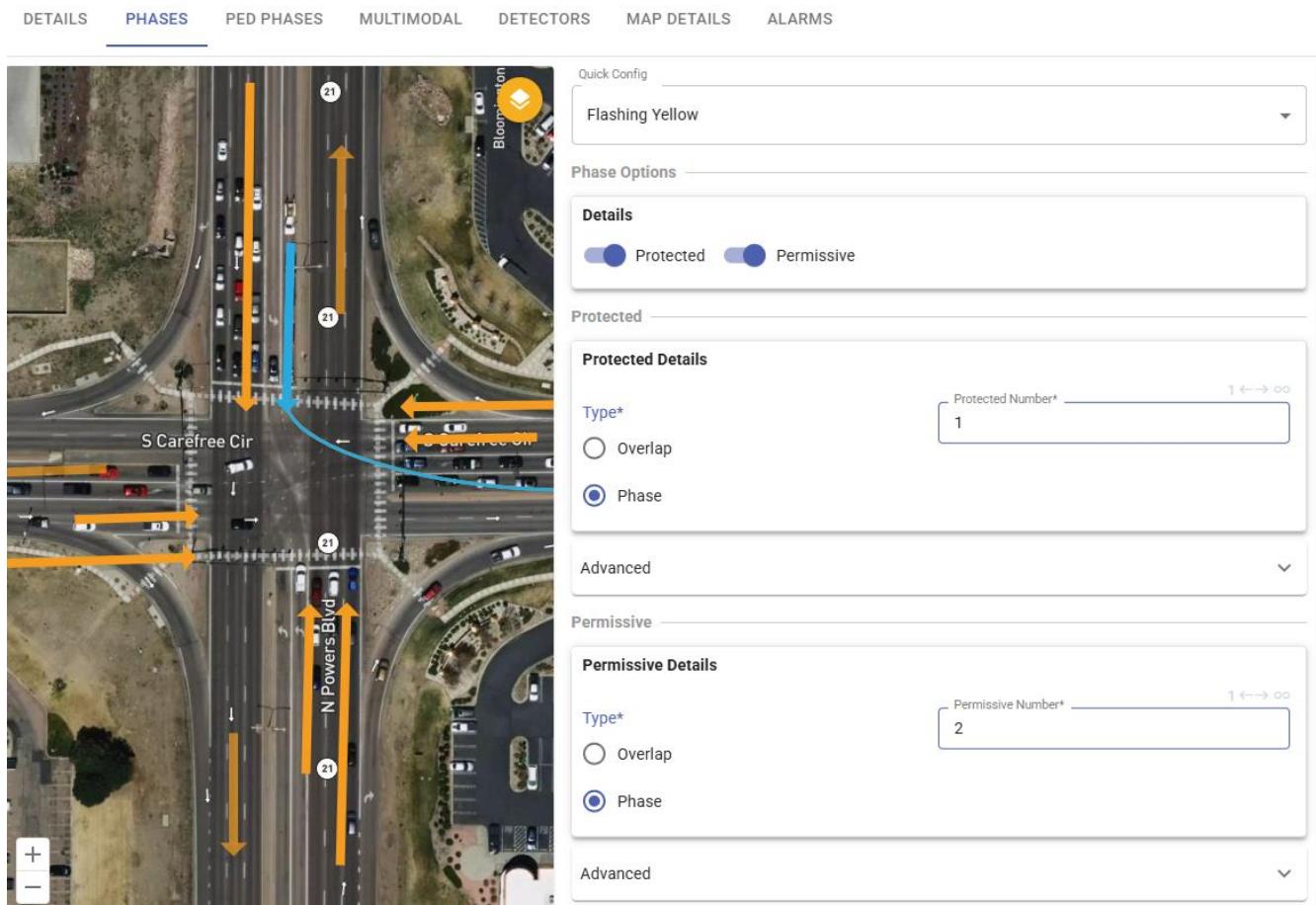


Hint: The "Protected" and "Permissive" toggles are available for each phase. However, it is best practice to use a secondary "Permissive" phase/overlap when coding PPLT or PPRT phases (see Example 2) and use only the "Protected" configuration for all other movement types.

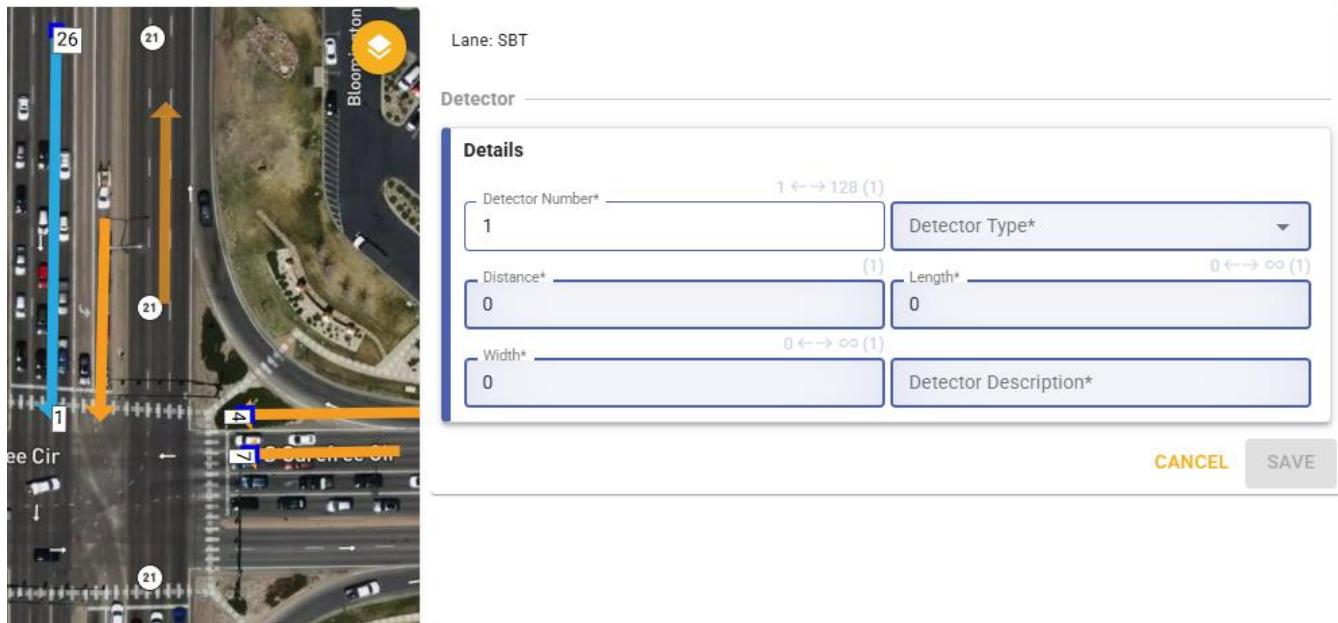
Example 2: FYA Left Turn Phase

The configuration below would display: a green left-arrow during Phase 1 green, a flashing yellow left- arrow during Phase 2 green, and yellow and red solid arrows for Phase 2 yellow and red, respectively.

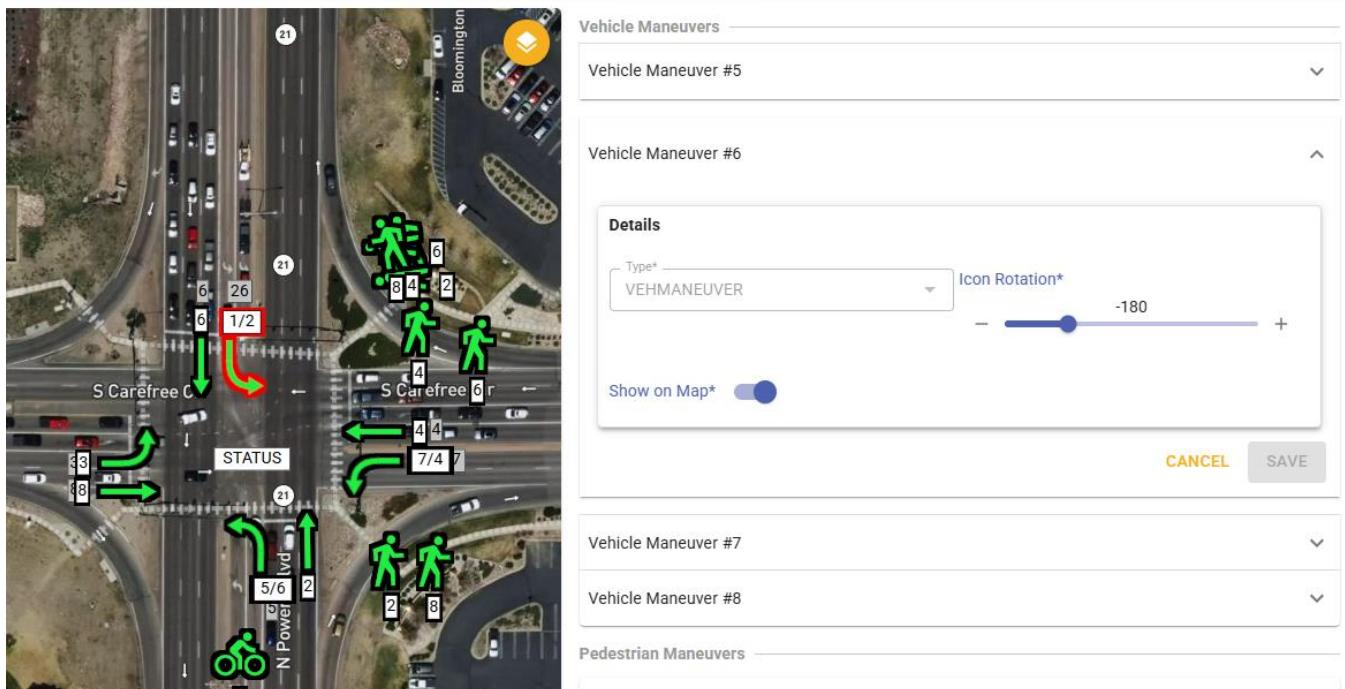
These configuration settings will generally match the display of the FYA in the field. However, the configuration should be modified for users that omit FYA by time-of-day. In those cases, the **Permissive Details** should map to the **Overlap number** of the FYA so that the left-arrow holds solid red as dictated by the controller's overlap programming.



5. Follow similar steps to configure Ped Phases and Multi-Modal icons.
6. Edit Detector configuration by first selecting a lane and adding detectors to applicable lanes. The configuration information needed includes: Detector Index number, Detector Type, Distance (from tip of lane arrow to back of detector), Detector Length, Detector Width, and a description for the detector. Note the detector index should match the value programmed in the controller and not necessarily an as-built or wiring diagram. The detector configuration generates icons for display on the map as well as configuration for ATSPM reports that rely on detector type and placement information (e.g., Purdue Coordination Diagram, Approach Volume, etc).

[PED PHASES](#) [MULTIMODAL](#) [DETECTORS](#) [MAP DETAILS](#) [ALARMS](#)


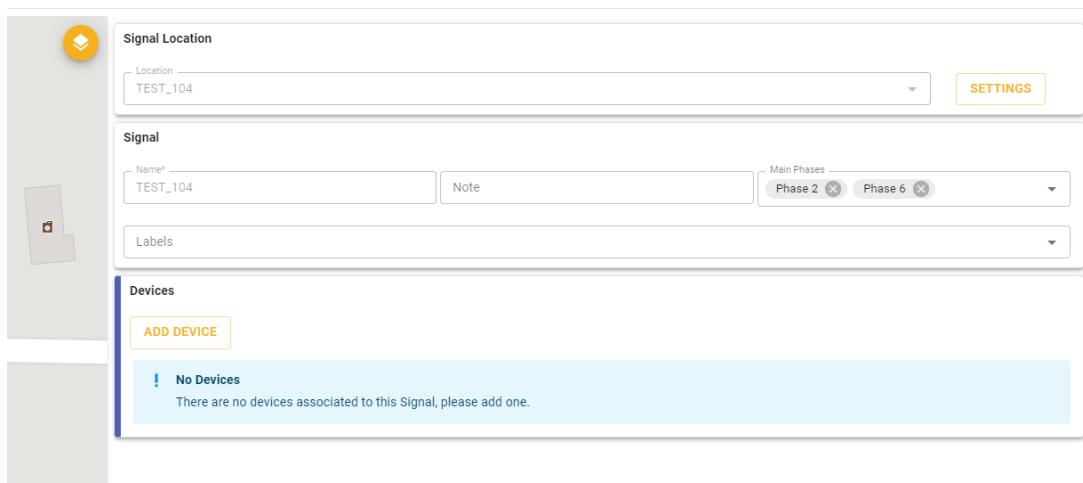
7. Review if map icons have generated correctly by going to Map Details. Phase arrows, Ped icons, and Detector icons can only be generated from the proceeding configuration steps. The generated icons can then be moved, rotated, or hidden from the map if desired.
8. Configure additional icons for the map display by clicking New Map Icon, then selecting a type. For example, a Status type icon can be added to display a text on the map.

[DETAILS](#) [PHASES](#) [PED PHASES](#) [MULTIMODAL](#) [DETECTORS](#) [MAP DETAILS](#) [ALARMS](#)


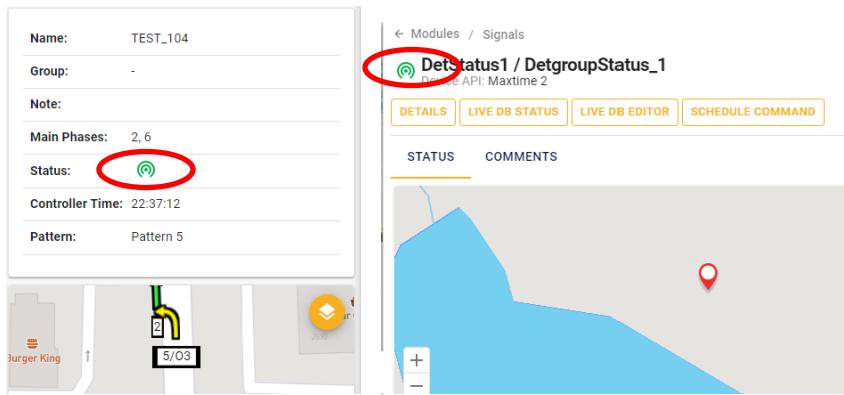
Part 3: Create Signal “Integration”

Note: this process can be completed before or after creating a Location/Signal

1. From the main menu, go to Integrations > Integrations, then click the button New Integration.
2. Provide a Name for the Integration – this can either be the same name as the intersection or another value such as controller asset number.
3. Set the Integration Type to “Signal”, then choose the appropriate protocol based on the type of controller.
Hint: Use “Maxtime 2” for automatic publish/subscribe or “Maxtime 1” to specify a manual polling rate to MAXTIME devices.
4. Provide a Timezone, then review the following connection information based on device protocol:
 - a. MAXTIME – provide the IP address in the URL box. The MAXTIME API uses HTTP(S) protocol, so the URL must begin with “http://”. If a custom port assignment (besides 80 or 443) is used, append this with a semicolon (e.g. <http://192.168.1.115:8080>). Select “Polling Enabled”, Sequential, and a full poll of 30 seconds is recommended.
 - b. Third-Party – Datalink Type = SNMP v1; NTCIP Settings: a community name must be provided (typically “administrator” or “public”); Command Stream Type = Datagram; Port = NTCIP port of the device (typically 161, or 501 for Econolite devices); Host = IP Address (without “http://”); Select “Polling Enabled”, Sequential, and a full poll of 30 seconds is recommended. Subscription Monitor Period should be a value of 1-5s, increasing this value will increase time between status polls.
 - c. Traffic Event Settings (Hi-Resolution Data for Reports) – MAXTIME devices require no further configuration. Third-Party devices need to be configured based on manufacturer’s recommended settings for accessing hi-resolution data on the particular device via FTP, SFTP, or SCP protocols.
5. **Optional:** Configure External Links – these are web addresses that will be accessed from the pull-out display of the intersection.
6. Ensure “System Enabled” and “Polling Enabled” options are selected before proceeding.
7. Go back to the Signal created in Part 2 – right-click the signal from the main map and select “Signal Editor” from the menu. In the “Devices” field, click the button to Add Device, then select the Signal Integration from the pull-down menu. When done click the Save icon in the upper right corner. This will link the integration to the Signal/Location.



8. Confirm communication is established by going back to the main map and observing the intersection status, or by clicking the “Go to Details” icon next to the Save button in the upper right corner. The integration is successful if a green status indication is shown:

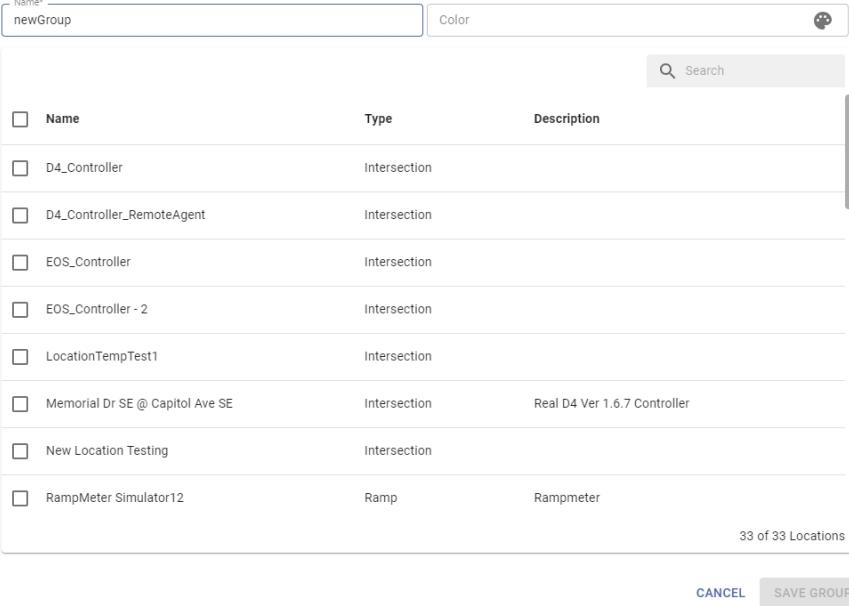


Part 4: Location Grouping

In various places in the UI, the user is able to select groupings of intersections – such as when Scheduling Commands or filtering for Alarms. These groupings can be used to group together signal locations in a logical hierarchy such as by District/Region, Corridor, or Section. The hierarchy is managed through the Locations Module.

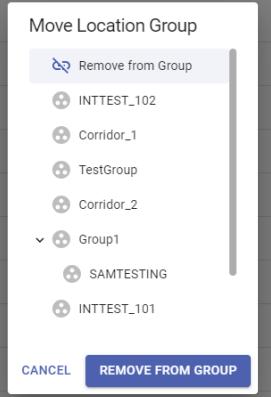
1. From the main menu, go to Locations > Locations Tree.
2. Click the Add Group button to begin creating groups. On the right of the newly created group, click the button to Edit Group. A dialog box will open allowing the user to edit the Name of the group, assign a color, and select individual Locations that will be members of the grouping.
3. When a Group is created, sub or “child” groups can be created by clicking the “three-dot” icon then selecting “Add Child Group”. This will prompt a similar dialogue box that will allow the user to name the child group and select individual locations to be member of the child group.

Edit Location Group: newGroup



The screenshot shows a list of locations within a group named 'newGroup'. The columns are 'Name', 'Type', and 'Description'. The locations listed are: D4_Controller (Intersection), D4_Controller_RemoteAgent (Intersection), EOS_Controller (Intersection), EOS_Controller - 2 (Intersection), LocationTempTest1 (Intersection), Memorial Dr SE @ Capitol Ave SE (Intersection, description: Real D4 Ver 1.6.7 Controller), New Location Testing (Intersection), and RampMeter Simulator12 (Rampmeter). A search bar is at the top right, and a message '33 of 33 Locations' is at the bottom right. Buttons for 'CANCEL' and 'SAVE GROUP' are at the bottom.

- Groups and Locations can be moved to become members of different groups by clicking the “three-dot” icon then selection “Move Group/Location”. This will prompt a dialogue box that will allow the user to select a new Group. A moved Group will become a “child” of the group selected here and a location will become a member of the new Group.



The dialog box shows a list of groups and locations. The 'Remove from Group' option is selected. The list includes: INTTEST_102, Corridor_1, TestGroup, Corridor_2, Group1 (selected), SAMTESTING, and INTTEST_101. Buttons for 'CANCEL' and 'REMOVE FROM GROUP' are at the bottom.

- Finally, once groups are created, they can be re-ordered using the Manage Orders button at the top of the menu. The groups will be organized from lowest to highest number assigned in the “Order” column, and alpha-numerical if order index numbers are the same.

Manage Orders

Groups	Order
^ INTTEST_102	1
^ Corridor_1	2
▼ TestGroup	3
^ newGroup	4
^ Corridor_2	5
▼ Group1	6
^ GroupTest2	7
▼ Corridor12	100
▼ Corridor13	100
▼ INTTEST_101	100
▼ ScheduleTestGroup	100
▼ Ungrouped Locations	

CANCEL **SAVE ORDERS**

Review

Signals and Groups* Search

- INTTEST_102
- Corridor_1
- ▼ TestGroup
- newGroup
- Corridor_2
- ▼ Group1
- ▼ INTTEST_101
- ▼ ScheduleTestGroup
- ▼ GroupTest2

CANCEL **NEXT**