

The Master Scheduler



TMS Online

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Logging In

Logging in will bring you to this section, allowing you to create and update commonly used information.

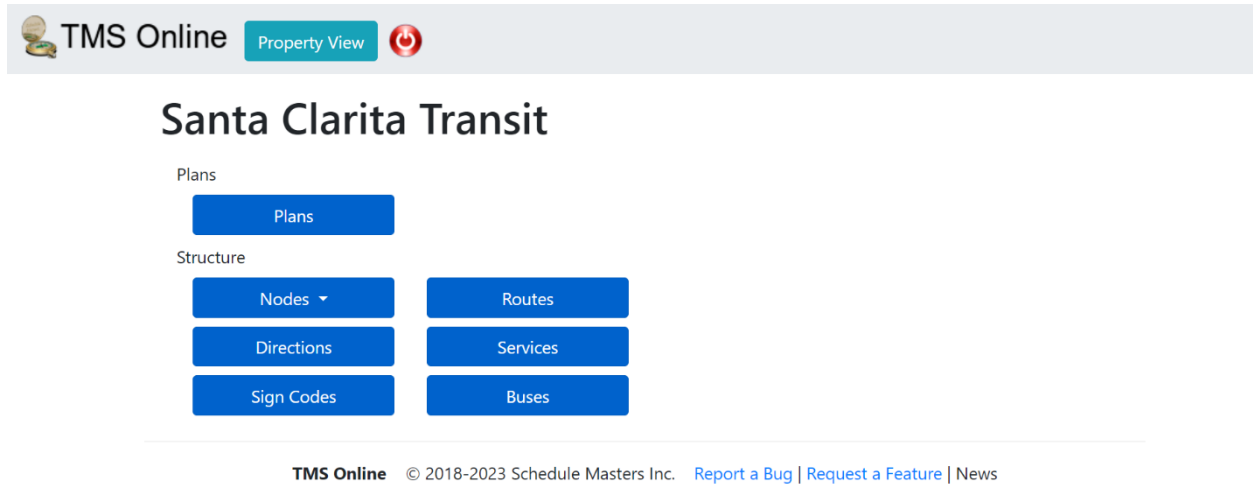


figure 1 – Property View Screen

Nodes

The Nodes selection allows you to display your information by **Map** or by **Table**.

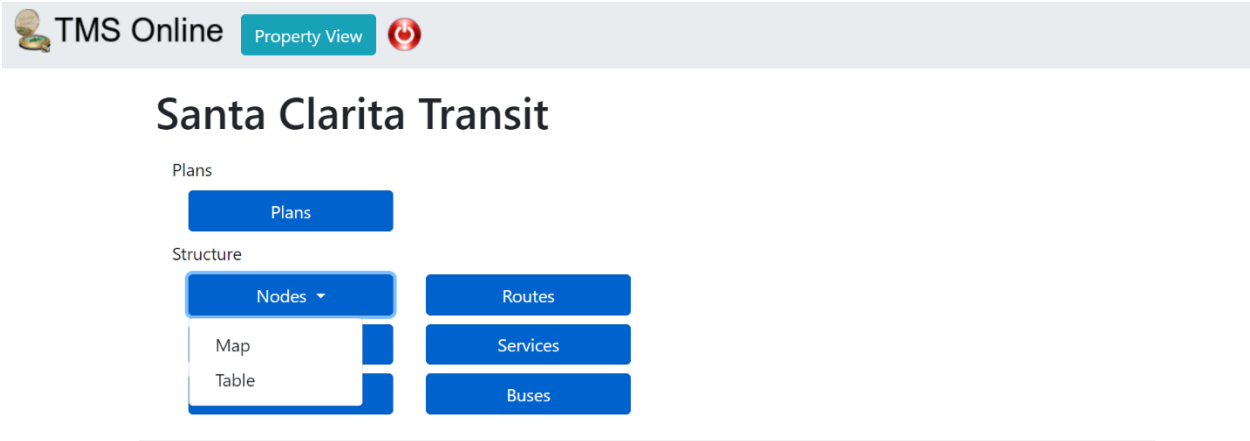


figure 2 – Nodes by Map or Table

Selecting **Map** will bring you to the following screen, displaying all relevant data that has been entered/uploaded into TMS Online.

Map View

TMS Online Property View Nodes Map

Nodes: Santa Clarita Transit, Santa Clarita

Search Text

Garage Relief Stop Secure

Search OK Add Node Switch View

Map Satellite

figure 3 – Map View

Searching for Nodes

In the **Search Text** input box, you can search through an already established Nodes list. You also have the ability to refine your search to include a specific **Garage**, **Relief**, **Stop**, and/or **Secure** bus locations.

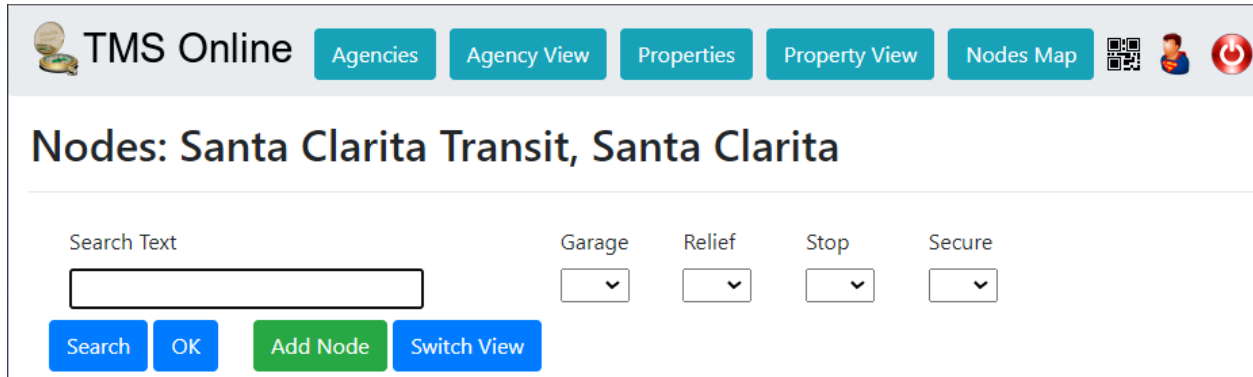
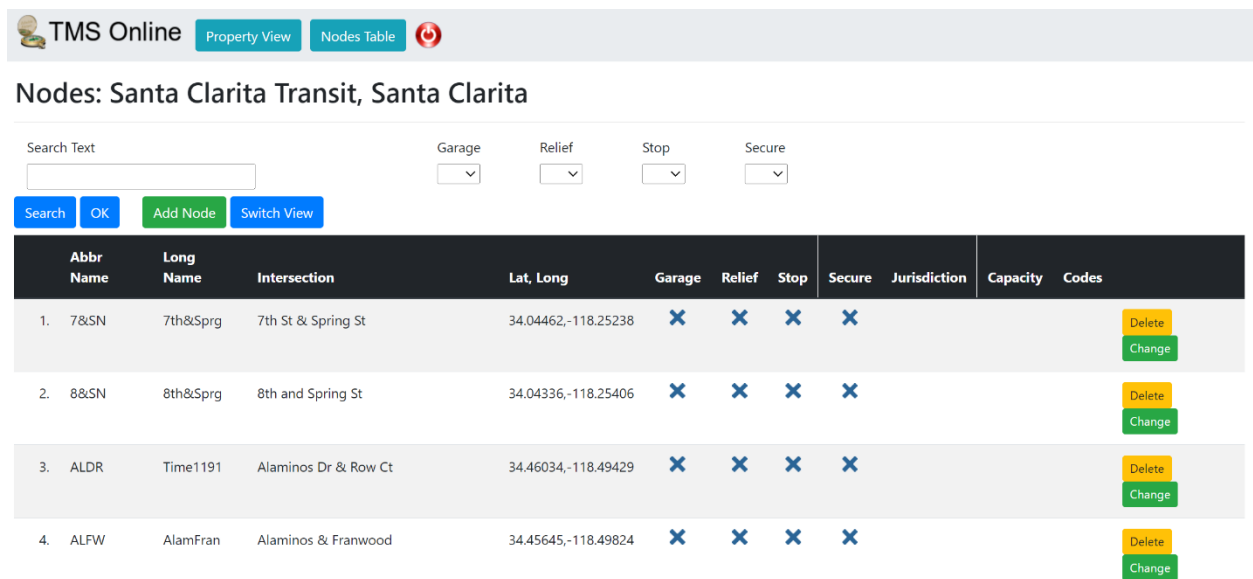


figure 4 – Search Parameters

Switching Views

Selecting **Switch View**, or selecting **Table** from the **Plans** screen, will bring you over to viewing **Nodes** as a table. **Add Node** is described later in this guide.



Abbr Name	Long Name	Intersection	Lat, Long	Garage	Relief	Stop	Secure	Jurisdiction	Capacity	Codes
1. 7&SN	7th&Sprg	7th St & Spring St	34.04462,-118.25238	X	X	X	X			Delete Change
2. 8&SN	8th&Sprg	8th and Spring St	34.04336,-118.25406	X	X	X	X			Delete Change
3. ALDR	Time1191	Alaminos Dr & Row Ct	34.46034,-118.49429	X	X	X	X			Delete Change
4. ALFW	AlamFran	Alaminos & Franwood	34.45645,-118.49824	X	X	X	X			Delete Change

figure 5 – Nodes Table

Viewing Nodes as a Table

Displaying Only Timepoints

Viewing **Nodes** as a table allows you to see each Timepoint and Stop in a more detailed view. This table view also allows you to filter out information, showing only Timepoints (figure 6A), Garage locations (figure 6B), Relief Points (figure 6C), Stops (figure 6D), or Secure Locations.

TMS Online Property View Nodes Table

Nodes: Santa Clarita Transit, Santa Clarita

Search Text Garage Relief Stop Secure

Search OK Add Node Switch View

	Abbr Name	Long Name	Intersection	Lat, Long	Garage	Relief	Stop	Secure	Jurisdiction	Capacity	Codes
1.	7&SN	7th&Sprg	7th St & Spring St	34.04462,-118.25238	X	X	X	X			Delete Change
2.	8&SN	8th&Sprg	8th and Spring St	34.04336,-118.25406	X	X	X	X			Delete Change
3.	ALDR	Time1191	Alaminos Dr & Row Ct	34.46034,-118.49429	X	X	X	X			Delete Change
4.	ALFW	AlamFran	Alaminos & Franwood	34.45645,-118.49824	X	X	X	X			Delete Change

figure 6A – Displaying Timepoints Only

Displaying Only Stops

TMS Online Property View Nodes Table

Nodes: Santa Clarita Transit, Santa Clarita

Search Text

Garage Relief Stop Yes Secure

Search OK Add Node Switch View

Abbr Name	Long Name	Intersection	Lat, Long	Garage	Relief	Stop	Secure	Jurisdiction	Capacity	Codes
1. 0798	Stop0798	Victory Blvd & Conoga Ave	34.18845,-118.59816	X	X	✓	X			Delete Change
2. 0829	Stop0829	7th St & Spring St	34.04462,-118.25238	X	X	✓	X			Delete Change
3. 1000	Stop1000	Newhall Ranch Rd & Grandview Dr	34.42804,-118.54976	X	X	✓	X			Delete Change
4. 1001	Stop1001	Bouquet Canyon Rd & Espuella Dr	34.43012,-118.53473	X	X	✓	X			Delete Change

figure 6B – Displaying Stops Only

Displaying Only Relief Points

TMS Online Property View Nodes Table

Nodes: Santa Clarita Transit, Santa Clarita

Search Text

Garage Relief Stop Secure


Search OK Add Node Switch View

Abbr Name	Long Name	Intersection	Lat, Long	Garage	Relief	Stop	Secure	Jurisdiction	Capacity	Codes
1. OLRC	Time1285	Old Rock Rd & Valencia Blvd	34.40082,-118.59633	X	✓	X	X			Delete Change

«1» 1 Total

figure 6C – Displaying Relief Points Only

Displaying Only Garages

TMS Online Property View Nodes Table 

Nodes: Santa Clarita Transit, Santa Clarita

Search Text

Garage Relief Stop Secure

Search OK Add Node Switch View

Abbr Name	Long Name	Intersection	Lat, Long	Garage	Relief	Stop	Secure	Jurisdiction	Capacity	Codes
1. GAR	Garage	28250 Constellation Rd, Santa Clarita	34.44838,-118.57575	✓	✗	✗	✗			Delete Change

«1» 1 Total

figure 6D – Displaying Garages Only

Adding a Node or Stop

Clicking on the **Add Node** button displays:

TMS Online Agencies Agency View Properties Property View Nodes Table Node Add

Add: Node

Short Name*

Long Name*

Description

Intersection

Latitude Longitude

Comment

 Garage Relief Stop Secure

Jurisdiction

Capacity Map Codes

AVL Name

AVL Num Other Num

AVL
 Preftrans

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figure 7 – Adding a new Node

Fields:

- **Short Name** (value required)
- **Long Name** (value required)
- **Description** of node/stop (if applicable)
- **Intersection** (value required)
- **Latitude**
- **Longitude**
- **Comment Code** (if applicable)
- Flags that pertain to Timepoint (**Garage, Relief Point, Stop, Secure Location**)
- **Jurisdiction** (if applicable)
- **Capacity**
- **Map Codes** (Used by some timetable reports as column headers)
- **AVL Stop Name, AVL Number, Other Number, AVL Preferred Transfer Point**

Changing a Node

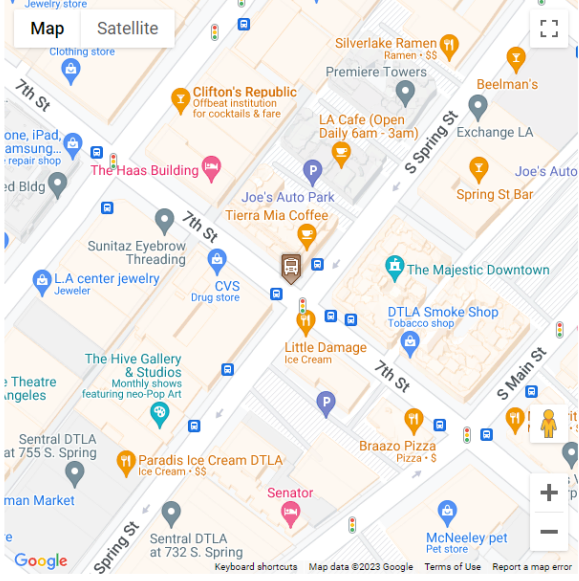
The icon on the map can be moved by left clicking and holding it, and then moving it on the map. When the left click is released, the Latitude and Longitude fields will be updated with the relevant information.

Clicking on an entry, or selecting **Change**, will allow you to edit current Timepoint/Stop data.

TMS Online [Agencies](#) [Agency View](#) [Properties](#) [Property View](#) [Nodes Table](#) [Node Change](#)

Change: Node

Short Name*	<input type="text" value="7&SN"/>
Long Name*	<input type="text" value="7th&Sprg"/>
Description	<input type="text" value="7th St & Spring St"/>
Intersection	<input type="text" value="7th St & Spring St"/>
Latitude	<input type="text" value="34.044618"/>
Longitude	<input type="text" value="-118.252384"/>
Comment	<input type="text" value=""/>
<input type="checkbox"/> Garage	<input type="checkbox"/> Relief
<input type="checkbox"/> Stop	<input type="checkbox"/> Secure
Jurisdiction	<input type="text" value=""/>
Capacity	Map Codes
<input type="text" value=""/>	<input type="text" value=""/>
AVL Name	
<input type="text" value=""/>	
AVL Num	Other Num
<input type="text" value=""/>	<input type="text" value=""/>
<input type="checkbox"/> AVL Preftrans	
<input type="button" value="Save"/>	<input type="button" value="OK"/>
<input type="button" value="Cancel"/>	



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figure 7 –Changing a Node

Directions

The Directions window within TMS Online allows you to establish new directions of travel or modify existing direction text.

TMS Online Agencies Agency View Properties Property View Directions

Directions: Santa Clarita Transit, Santa Clarita

OK Add Direction

	Abbr	LongName	Comment
1.	IB	Inbound	Delete Change
2.	LP	Loop	Delete Change
3.	OB	Outbound	Delete Change

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figure 8 – Directions Table

Adding a Direction

Clicking on **Add Direction** will create a new entry in this table.

TMS Online Agencies Agency View Properties Property View Directions Direction Add

Add: Direction

Abbr Name* Long Name

Comment

Save OK Cancel

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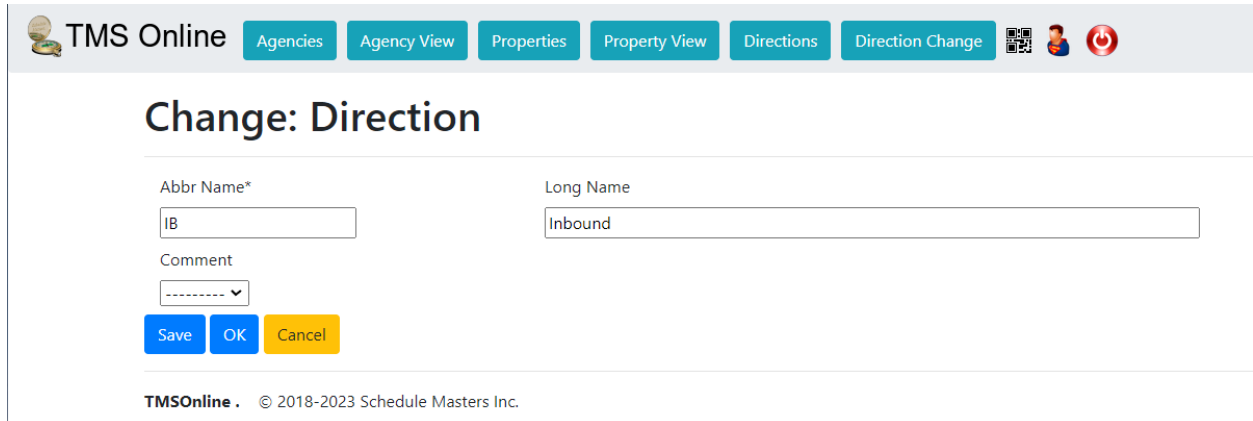
figure 9 – Adding a new Direction

The fields are:

- Abbreviated name (value required)
- Long name
- Comment code

Changing a Direction

Clicking on an entry, or selecting **Change**, allows you to update direction information. Any changes made here will carry forward throughout the rest of the system.



Change: Direction

Abbr Name* Long Name

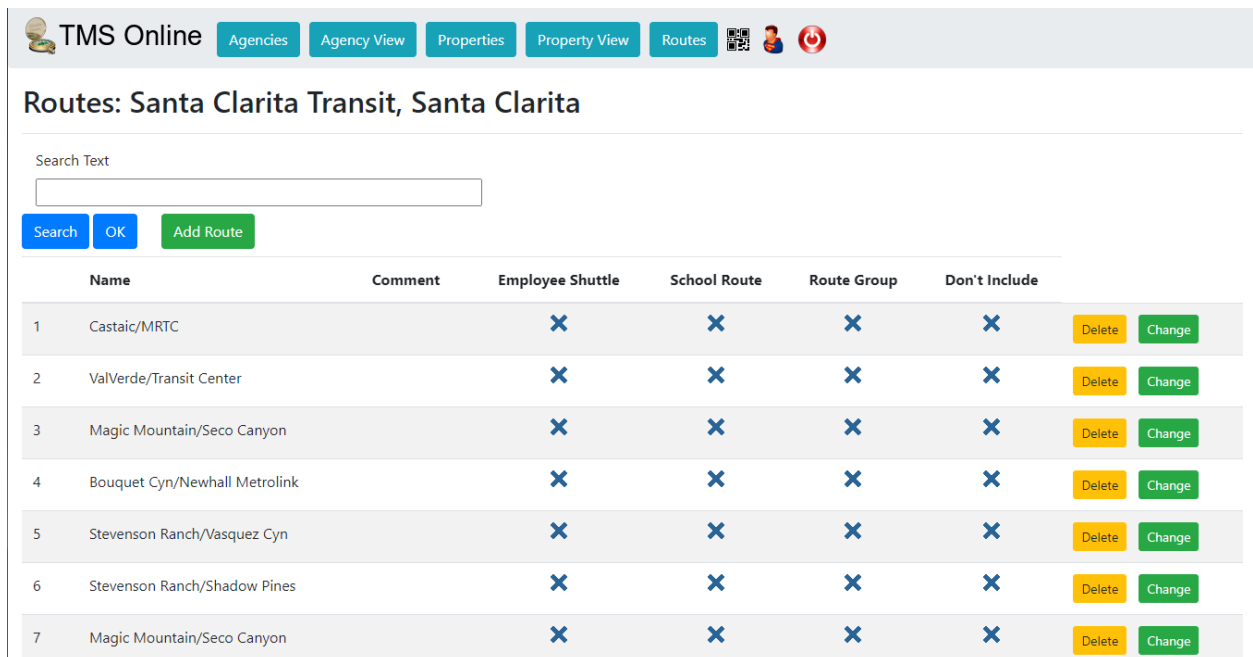
Comment

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figure 10 – Changing/Updating a Direction

Routes

The Routes Table contains your route information.



Routes: Santa Clarita Transit, Santa Clarita

Search Text

	Name	Comment	Employee Shuttle	School Route	Route Group	Don't Include		
1	Castaic/MRTC		X	X	X	X	Delete	Change
2	ValVerde/Transit Center		X	X	X	X	Delete	Change
3	Magic Mountain/Seco Canyon		X	X	X	X	Delete	Change
4	Bouquet Cyn/Newhall Metrolink		X	X	X	X	Delete	Change
5	Stevenson Ranch/Vasquez Cyn		X	X	X	X	Delete	Change
6	Stevenson Ranch/Shadow Pines		X	X	X	X	Delete	Change
7	Magic Mountain/Seco Canyon		X	X	X	X	Delete	Change

figure 11 – Routes Table

You may search for Routes via the search bar. You may create a new route by clicking on the **Add Route** button.

Adding a Route

TMS Online Agencies Agency View Properties Property View Routes Route Add

Add: Route

ID Name*

ID Num*

Comment

OB Direction IB Direction

OB Bay IB Bay

Emp Shuttle School Route
 Route Group Don't Include

Colour*

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figure 12 – Adding a Route

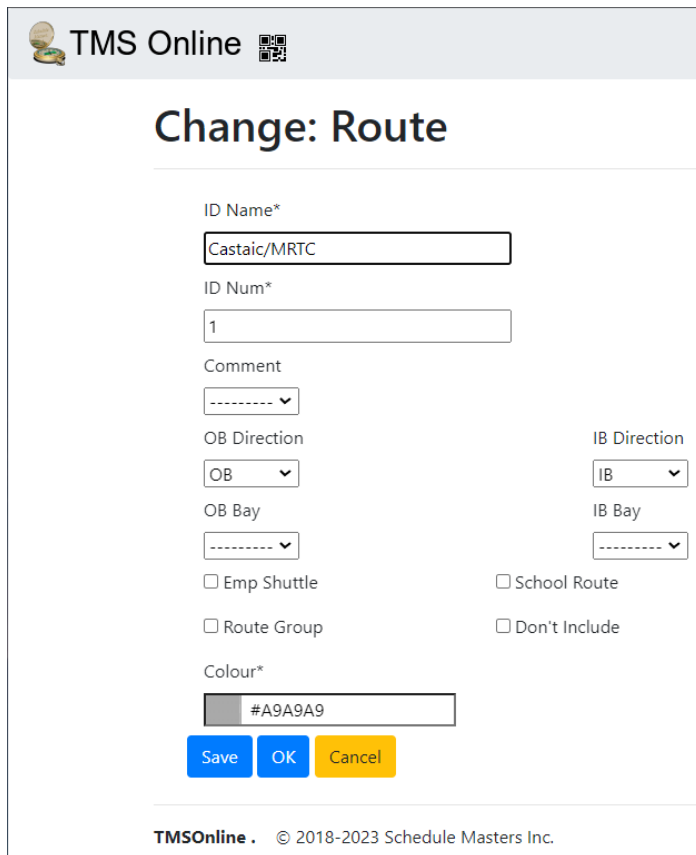
The fields are:

- Route Name (value required)
- Route Number (value required)
- Comment Code
- Outbound Direction
- Inbound Direction
- Outbound Bay
- Inbound Bay

You may assign specific flags to any Route. Using the check boxes, you may designate a route to be an Employee Shuttle, a School Route, part of a Route Group, and a flag to not include the route in particular reports. Finally, you may assign a colour code to the Route, to be used later in mapping portions of the database.

Changing a Route

By clicking on the route, or the **Change** button, you may edit existing Route data.



The screenshot shows the 'Change: Route' form in the TMS Online interface. The form is titled 'Change: Route' and is located within a header bar that says 'TMS Online'. The form contains the following fields and options:

- ID Name***: A text input field containing 'Castaic/MRTC'.
- ID Num***: A text input field containing '1'.
- Comment**: A dropdown menu with a dashed line as a placeholder.
- OB Direction**: A dropdown menu with 'OB' selected.
- IB Direction**: A dropdown menu with 'IB' selected.
- OB Bay**: A dropdown menu with a dashed line as a placeholder.
- IB Bay**: A dropdown menu with a dashed line as a placeholder.
- Emp Shuttle
- School Route
- Route Group
- Don't Include
- Colour***: A color selection field showing a grey swatch and the hex code '#A9A9A9'.

At the bottom of the form are three buttons: 'Save' (blue), 'OK' (blue), and 'Cancel' (yellow). Below the form, the footer text reads 'TMSOnline . © 2018-2023 Schedule Masters Inc.'

figure 13 – Change a Route

Services

The Services button allows you to create or update the Property's Service days.

TMS Online Property View Services

Services: Santa Clarita Transit, Santa Clarita

OK Add Service

	Name	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday		
?	1. Weekday	✓	✓	✓	✓	✓	✗	✗	Delete	Change
?	2. Saturday	✗	✗	✗	✗	✗	✓	✗	Delete	Change
?	3. Sunday	✗	✗	✗	✗	✗	✗	✓	Delete	Change

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figure 14 – Service Days

Sign Codes

The Sign Codes screen allows you to create, modify, or delete Headsign Codes.

TMS Online Agencies Agency View Properties Property View Sign Codes

SignCodes: Santa Clarita Transit, Santa Clarita

Search Text

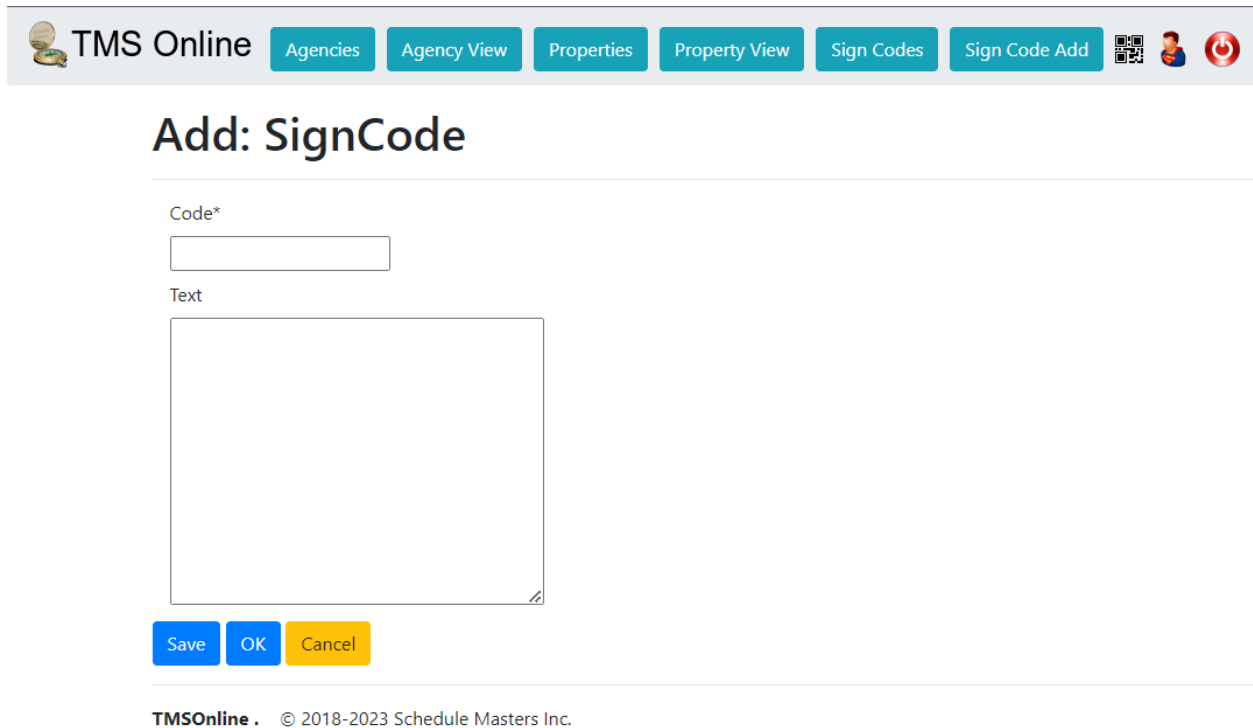
OK Search Add SignCode

	Code	Text		
1.	Arroyo S	Arroyo Seco Jr High	Delete	Change
2.	Ave Stan	Ave Stanford & Rye Cyn	Delete	Change
3.	Bouquet	Bouquet & Centurion	Delete	Change
4.	Calgrove	Calgrove	Delete	Change
5.	Castaic	Castaic	Delete	Change
6.	Century	Century City	Delete	Change
7.	Commerce	Commerce Center	Delete	Change
8.	Copper H	Copper Hill	Delete	Change
9.	Golden V	Golden Valley	Delete	Change

figure 15 – Sign Codes

Adding Sign Codes

You may search for sign codes via the search bar. You may create a new sign code by clicking on the **Add SignCode** button.



TMS Online Agencies Agency View Properties Property View Sign Codes Sign Code Add

Add: SignCode

Code*

Text

Save OK Cancel

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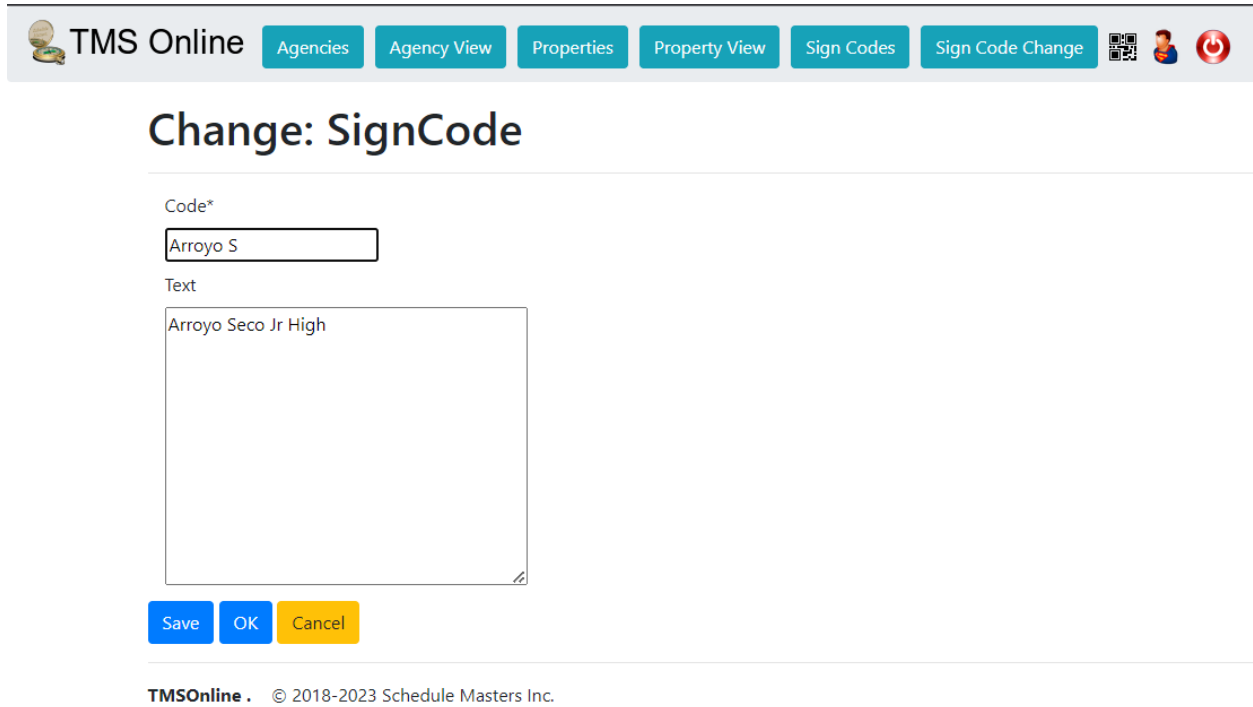
figure 16 – Adding a Sign Code

The fields are:

- Sign Code (value required)
- Text

Changing Sign Codes

By clicking on an entry for a Sign Code, or selecting **Change**, you may modify an already existing Sign Code.



TMS Online Agencies Agency View Properties Property View Sign Codes Sign Code Change

Change: SignCode

Code*
Arroyo S

Text
Arroyo Seco Jr High





Save OK Cancel

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figure 17 – Modifying a Sign Code

Buses

In TMS Online, you may create or edit bus data.

 TMS Online Agencies Agency View Properties Property View Buses   

Buses: Santa Clarita Transit, Santa Clarita

OK Add Bus

	Number	Comment	Bus Type		
1.	1260		Shuttle Van	Delete	Change
2.	128		1997 Gillig Phantom	Delete	Change
3.	129		1997 Gillig Phantom	Delete	Change
4.	130		1997 Gillig Phantom	Delete	Change
5.	131		1997 Gillig Phantom	Delete	Change
6.	132		1997 Gillig Phantom	Delete	Change
7.	133		1997 Gillig Phantom	Delete	Change
8.	134		1997 Gillig Phantom	Delete	Change
9.	141		2000 Gillig Phantom	Delete	Change
10.	142		2000 Gillig Phantom	Delete	Change

figure 18 –Buses

Adding a Bus

Click on **Add Bus** to create a new entry in the fleet.

TMS Online . Agencies Agency View Properties Property View Buses Bus Add

Add: Bus

Comment: [-----] AVL Success

BusType*: [-----] Retired

Number*: []

Save OK Cancel

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figure 19 – Adding a new Bus

Fields:

- **Comment Code**
- (value required)**Bus Type**
- (value required)**Bus Number**

Use the **Retired** checkbox when you take a bus out of your fleet so its historical data is maintained.

Changing Bus Data

To edit an already existing entry, either click on a Bus or press **Change**.

TMS Online . Agencies Agency View Properties Property View Buses Bus Change

Change: Bus

Comment: [-----] AVL Success

BusType*: Shuttle Van Retired

Number*: 1260

Save OK Cancel

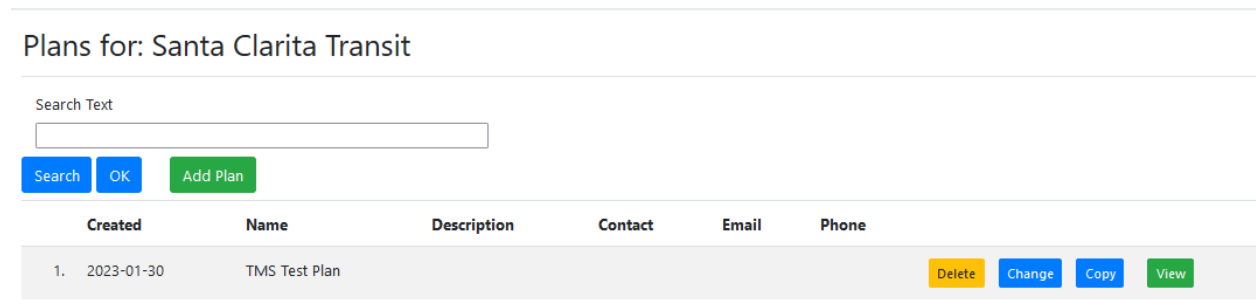
TMSOnline . © 2018-2023 Schedule Masters Inc.

figure 20 – Changing a Bus entry

Plans: Overview of Plans

When you log into TMS Online and select the **Plans** button (from the **Property View** heading) you'll see the Plans screen. This screen allows you to create different scenarios, including previous versions, tests, future bids, and hypotheticals. These plans share common data from the "Property" level (*i.e.* Nodes, Directions, Routes, Services, Sign Codes, Jurisdictions, Divisions, and Buses), but are otherwise unique, and can be edited individually.

The Plans Screen



Plans figure 1 – The Plans screen

The Plans screen contains a table that has an entry for each version of the schedule. Each numbered entry has buttons along the right side to delete, change, copy, or view:

- Delete removes the entry
- Change allows the description of the plan to be edited (see figure 2)
- Copy creates an identical version of the given plan, useful for creating new scenarios
- Clicking View opens it for viewing, allowing access to the main data within that plan (such as the timetable and blocking solutions, as seen in the sections that follow). Double-clicking the entry also opens it for viewing.

Changing a Plan

Change: Plan

Name*

Contact Name Email Phone



Description

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Plans figure 2 – Change: Plan screen (updating descriptions of Plans)

The Change: Plan screen allows the description of the plan to be updated. This information will also be reflected on the Plans table itself. The Name field is marked with an asterisk because it is a mandatory field. The other fields are optional. We recommend using the description field to give a short overview of the plan’s contents and the reason it was created.

The Plan View

 TMS Online [Property View](#) [Plans](#) [Plan View](#) 

Plan for: Santa Clarita Transit, Santa Clarita | Created: 2023-02-21

Route* Service*

Definition
[Patterns](#) [Connections](#) [Trips](#) [Timetable](#)

Solution
[Deadhead Matrix](#) [Vehicle Blocks](#)

Reports
[Reports](#)

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Plans figure 3 - Plan View (Clicking View from the Plans table)

Pressing the “View” button on an entry in the Plans table opens the Plan View (Fig. 3) for that entry. This is the main screen for elements of a given version of a schedule, and what you will be using most often when developing new scenarios or bids. From here you can access the Connections, Patterns, Trips, Timetable, Vehicle Blocks, and Reports that you can adjust for this version of the plan (see later sections for the specifics of each). The Route and Service dropdowns at the top of these buttons are

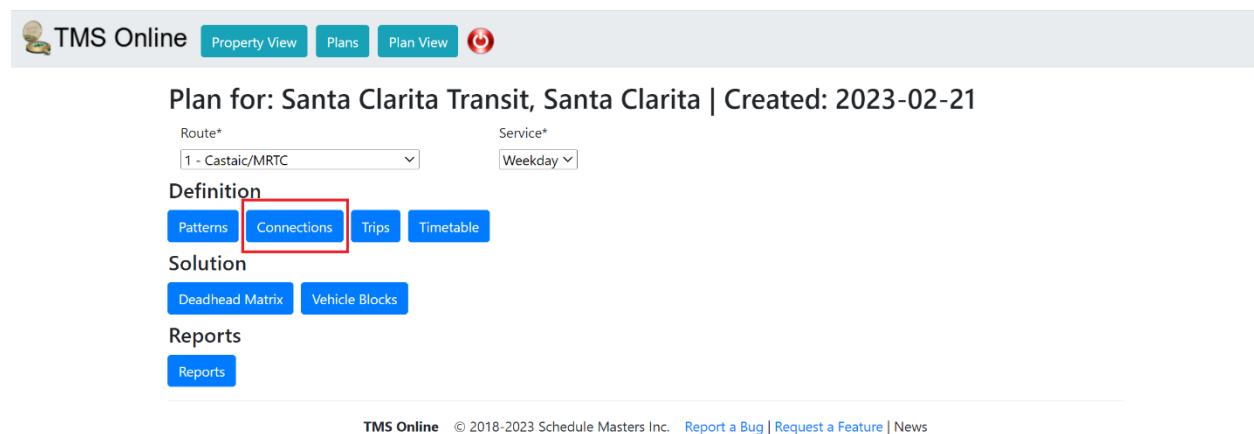
your main control for selecting the information you want these screens to display. They are populated with the Routes and Service types you entered into your Property View.

Connections

Overview of Connections

Connections are the building blocks of timetables. Each time a vehicle travels between two timepoints, a connection is used to generate that segment of the timetable. Individual connection times are stored together in a large table that is referenced by later TMS functions. Connections are also used to record deadheads, distance information and equivalences, so that TMS understands the relationship between the points in your Nodes table. When the points of the Nodes table are interconnected in this way, TMS can construct route information, including time and geolocation.

Accessing the Connections Screen



Connections figure 1 – Opening the Connections screen

Connections are accessed via the Plan View. They are unique to each plan, so you may want to copy an existing version of your most updated plan before making any edits. From the Plans View, select the Route and Service you want to display then click the Connections button to proceed to the main Connections screen.

The Connections Screen

Connections: TMS Test Plan, Santa Clarita Transit, Santa Clarita

From Node

To Node

Route
4 - Bouquet Cyn/Newhall Metrolink

Service
Weekday

Running Time

Travel Time

Deadhead Time

Equivalent

Stop to Stop

AVL Equivalent

Search
OK
Add Connection

	From	To	From Route	To Route	From Service	To Service	From Pattern	To Pattern	Distance	From Time	To Time	Connection Time	2-way	Running Time	Travel Time	Deadhead Time	Equivalent	Stop to Stop	Avl Equivalent	Comment	
1.	ALDR	BOCA	4 - Bouquet Cyn/Newhall Metrolink	4 - Bouquet Cyn/Newhall Metrolink	Weekday	Weekday	-	-	-	-	-	6:00	-	✓	-	-	-	-	-	-	Delete Change
2.	ALDR	BQCE	4 - Bouquet Cyn/Newhall Metrolink	4 - Bouquet Cyn/Newhall Metrolink	Weekday	Weekday	-	-	-	-	-	6:00	-	✓	-	-	-	-	-	-	Delete Change
3.	ASRC	CCHA	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	Delete Change
4.	BBCO	MTSP	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	Delete Change
5.	BBCO	MTSP	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	Delete Change

Connections figure 2 –The Connections screen

The Connections screen consists of function groupings. The first, displayed at the top, is a series of boxes used for searching the Connections table. The second is the Connections table itself, displayed below.

Searching the Connections Screen

From Node

To Node

Route
4 - Bouquet Cyn/Newhall Metrolink

Service
Weekday

Running Time

Travel Time

Deadhead Time

Equivalent

Stop to Stop

AVL Equivalent

Search
OK
Add Connection

Connections figure 3 – Searching the Connections screen

The top section of the Connections screen contains a series of controls used for searching the main Connections table. The options included for this search include:

- Specifying the “From” or “To” node. This means the origin or the destination, using the four-character name from the Nodes table
- The route to which the connections apply
- The service to which the connections apply
- If the connection is flagged as an “in-service” running time
- If the connection is flagged as a “driver movement” travel
- If the connection is flagged as a “out-of-service” deadhead
- The presence or absence of an equivalence flag, used to tell the system that two nodes with different names are indeed in the same
- The presence or absence of an AVL equivalence flag (used in some AVL systems to denote feasible transfer zones)

The selections made in this set of options govern the parameters used when clicking Search.



For purposes of searching the table, it should be noted that fields not filled in will be treated as ones that are unimportant to your search.

	From	To	From Route	To Route	From Service	To Service	From Pattern	To Pattern	Distance	From Time	To Time	Connection Time	2-way	Running Time	Travel Time	Deadhead Time	Equivalent	Stop to Stop Equivalent	Avl	Comment			
1.	ALDR	BOCA	4 - Bouquet Cyn/Newhall Metrolink	4 - Bouquet Cyn/Newhall Metrolink	Weekday	Weekday	-	-	-	-	-	6:00	-	✓	-	-	-	-	-	-	-	Delete	Change
2.	ALDR	BQCE	4 - Bouquet Cyn/Newhall Metrolink	4 - Bouquet Cyn/Newhall Metrolink	Weekday	Weekday	-	-	-	-	-	6:00	-	✓	-	-	-	-	-	-	-	Delete	Change
3.	ASRC	CCHA	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	-	Delete	Change
4.	BBCO	MTSP	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	-	Delete	Change
5.	BBCO	MTSP	-	-	-	-	-	-	-	-	-	0:42	✓	✓	-	-	-	-	-	-	-	Delete	Change

Connections figure 4 –The Connections table

The connections table (above) displays the results of the most recent search. Each entry shows the characteristics associated with that connection, including relevant routes, patterns, times, and flags. The buttons to the right of each entry allow each to be Deleted or Changed.



Be careful when deleting connections! They may be referenced in routes you are not aware of. It is best to make sure the general cases (*i.e.*, those associated with no particular route or service) do not have entries by searching with the **From** and **To** pairings for a given connection, and not delete the general cases unless you are absolutely certain they are unused (see the sections on Patterns, Trips and the Timetable for more information). There are no negative consequences in keeping currently unused connections within the system.

Adding a Connection

The “Add Connection” button creates a new connection, which will bring you to a similar screen to the View Connection screen, covered below. This function is similar to editing an existing connection, only it does not have information populated by default.

Changing Connections

Clicking the **Change** button on a row will open **Change Connection** screen:

Change: Connection

From Node*
ALDR

To Node*
BOCA

From Route
4 - Bouquet Cyn/Newhall Metrolink

To Route
4 - Bouquet Cyn/Newhall Metrolink

From Service
Weekday

To Service
Weekday

From Pattern Name

To Pattern Name

From time of day
[HH:]MM:SS

To time of day
[HH:]MM:SS

Connection time
6:00
[HH:]MM:SS

Distance
mi

Comment

Two Way Running Time Travel Time Deadhead Time
 Equivalent Stop Stop AVL Equivalent

Save OK Cancel

Connections figure 5 –The Change: Connection screen

Fields:

- **From Node** (value required) and **To Node** (value required): the four-character names from the Nodes table
- **From Route** is the origin of the connection. In most cases, the **To Route** will match the From Route unless this connection represents an interline deadhead.
- The **Service** to which the connection applies. **To Service** is used when a connection spans service days. In all other cases, **To Service** matches the origin
- The Pattern to which the connection applies. You can specify all patterns or a single pattern.
- The **Time of Day** to which the connection applies. The range between the **From** and **To Time of Day** is when this connection would override the general case
- **(value required)Connection Time** is the time in hours, minutes, and sections for this connection
- The **Comment** drop-down allows you to associate a comment with this connection
- **Two Way**, when checked, states that the time from the **From Node** to the **To Node** is the same as the time from the **To Node** to the **From Node**.
- **Running Time** is checked when the entry is an “in-service” connection time
- **Travel Time** is used If the connection is a “driver movement” time for the runcutter
- **Deadhead Time** is checked when this is a vehicle “out-of-service” connection time
- **Equivalent** tells the system that two nodes with different names are indeed in the same place (e.g., Terminal “Depart” and Terminal “Arrive”)
- **AVL Equivalent** is for the benefit of those AVL systems that need to create transfer zones

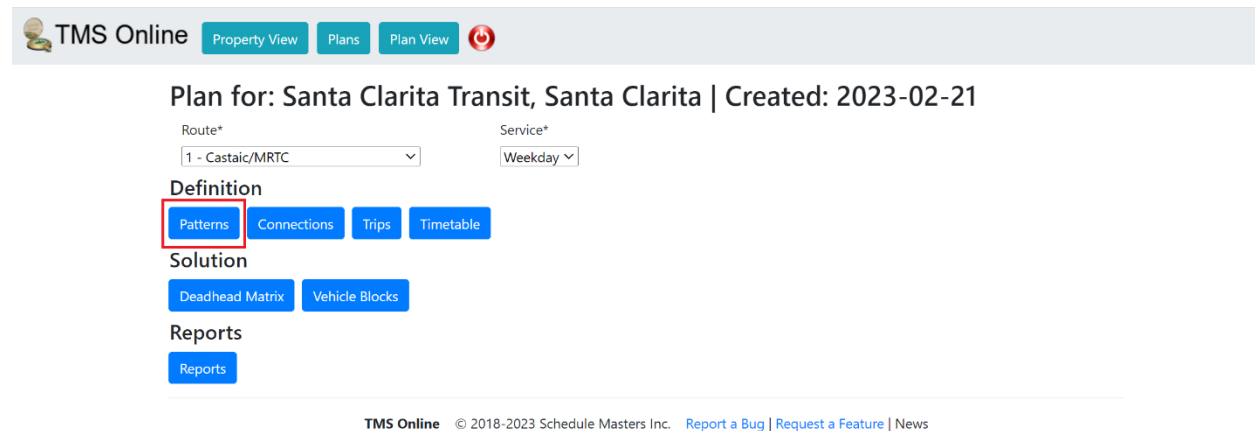
Save, OK, and Cancel buttons are used when you are finished with your edits to the connection.

Patterns

Overview of Patterns

Patterns are sets of nodes and stops that describe how a bus travels through a route. For example, a trip might travel from point A to point B and finish at point C. That ABC sequence is a pattern.

Accessing the Patterns Screen



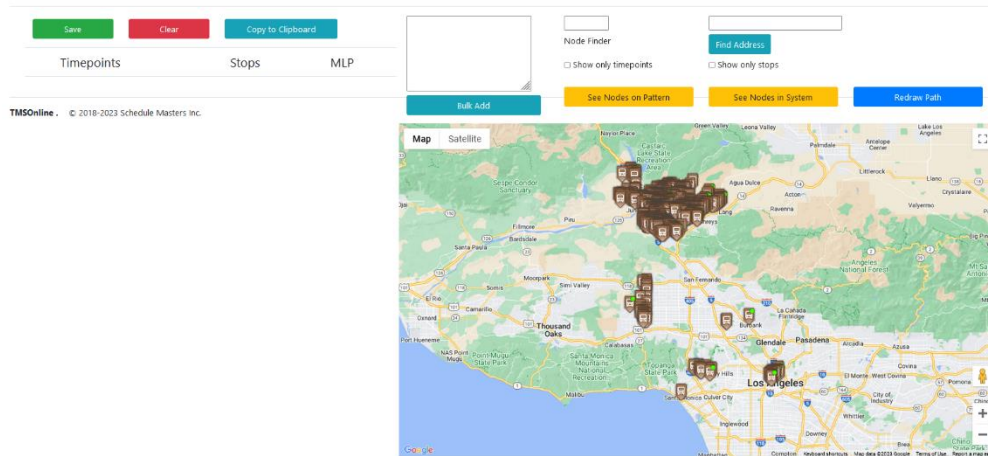
TMS Online © 2018-2023 Schedule Masters Inc. [Report a Bug](#) | [Request a Feature](#) | [News](#)

Patterns figure 1 – Opening the Patterns screen

Patterns are accessed via the Plan View for the current plan. From this screen, select the route and service then click the Patterns button..

Creating a New Pattern

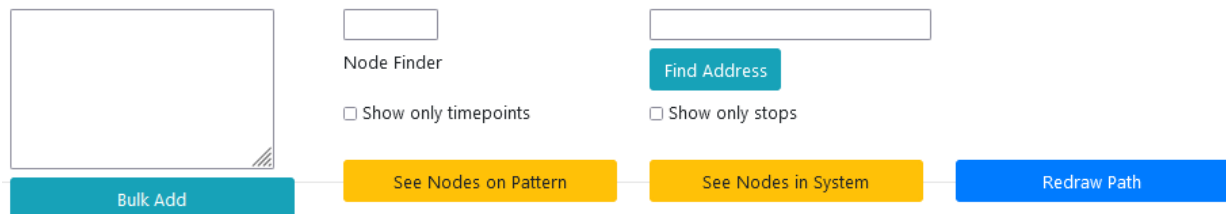
Create Base Pattern: 119 - New Route - OB



Patterns figure 2 –The Create Base Pattern screen

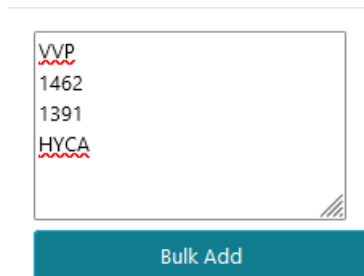
When you open the Patterns screen for the first time on a new route, you'll see the above screen: Create Base Pattern. The left side of the screen displays functions related to the sequence of nodes used in the pattern you are creating, and will be empty when you first view this page. The right side displays functions you can use to when first creating a pattern.

Commands for Creating New Patterns



Patterns figure 3 – Commands related to the creation of a new Pattern

The upper right portion of the screen contains commands for creating a new Pattern. The **Bulk Add** button can be used to add a sequence of stops if you already know the four character abbreviations they use, or you can locate them in the map.

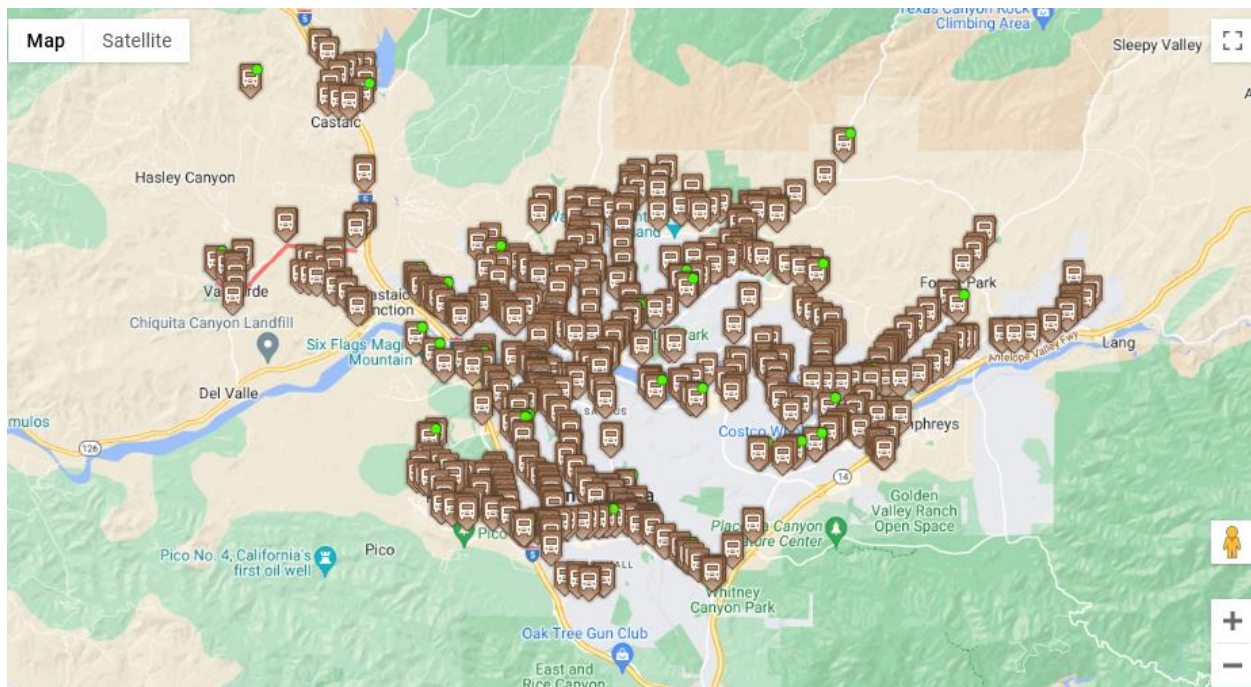


Patterns figure 4 –Using the Bulk Add button to add VVP, stop 1462, stop 1391 and HYCA to a Pattern

The **Node Finder** allows you to update the information that appears on the map by searching it for that specific node name. The **Show only timepoints** and **Show only stops** checkboxes may be used for filtering the types of points to appear on the map. Use the **Find Address** box to make a call to Google, then zoom the map into the nearest point that matches your description (*i.e.*, “Walmart” or “High School”).

Once you have added nodes to your pattern, **See Nodes on Pattern** is used to focus on those nodes, whereas **See Nodes in System** refocuses the map on the entire system. **Redraw Path** is used to reset the default routing assumed by Google for your pattern segment.

Double clicking on any of the points from the map will also add them to your pattern.



Patterns figure 5 –The Google map window, showing the nodes in the system

Create Base Pattern: 119 - New Route - OB

The screenshot shows a web interface for creating a base pattern. At the top, there are three buttons: 'Save' (green), 'Clear' (red), and 'Copy to Clipboard' (teal). Below these buttons is a table with three columns: 'Timepoints', 'Stops', and 'MLP'. The table contains four rows of data. The first row has 'VVP' in the Timepoints column, a dropdown menu in the Stops column showing '1927', and a blue checkmark in the MLP column. The second row has an 'X' icon in the Timepoints column, a dropdown menu in the Stops column showing '14...', and an empty MLP column. The third row has an 'X' icon in the Timepoints column, a dropdown menu in the Stops column showing '1391', and an empty MLP column. The fourth row has 'HYCA' in the Timepoints column, a dropdown menu in the Stops column, and a circled 'X' icon in the MLP column.

Timepoints	Stops	MLP
<input type="checkbox"/> VVP	1927	<input checked="" type="checkbox"/>
<input type="checkbox"/>	14...	
<input type="checkbox"/>	1391	
<input type="checkbox"/> HYCA		<input type="checkbox"/>

Patterns figure 6 –The Create Base Pattern’s left side, with the nodes we added from figure 4

Once you have added nodes to your pattern, you’ll see them reflected on the left side of the screen.

Use the **X** icon to remove nodes from the pattern.

You will also need to designate one timepoint as the Maximum Load Point (MLP). This defaults to the first node but can be changed to any timepoint. An MLP is typically the location where you’d like to maintain a consistent headway throughout the day. In TMS Online, it is used to determine where TMS will build your trips from.

You may also assign a specific stop to each timepoint (in the figure above, the system is suggesting that the timepoint VVP be associated with stop 1927, based on it being the closest stop to that timepoint).

The **Save** button is used when you want to save this pattern information, and the **Clear** button can be used to reset this side of the screen.

Copy to Clipboard produces a paste-friendly sequence based on your stops, which can also be used in the Bulk Add function for other routes.

Viewing and Editing Existing Patterns

Pattern Overview: Santa Clarita Transit

TMS Test Plan

Route*
7 - Magic Mountain/Seco Canyon

Pattern Name/Direction

OB01

OB

View Timetable

Follow all roads, Delete all Paths, Set vehicle Route, Copy to Clipboard, Sub Patterns Table

Trips on Pattern: 0

Delete All Trips, Add New Trips

Service, Time at MLP, Trip Number, Sign Code, Secondary Sign Code

Patterns figure 7 – Overview of an existing Pattern

When the **Pattern Name/Direction** dropdown is selected, the system shows the different patterns associated with this route.

TMS Test Plan

Route*
7 - Magic Mountain/Seco Canyon

Pattern Name/Direction

BASE

OB

View Timetable

Map, Satellite

BASE, BASE - Weekday!, IB01, IB02, OB01, OB02

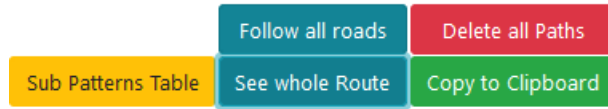
Map, Satellite

Patterns figure 8 – Overview of an existing Pattern

The **Route** dropdown allows you to select a route to view and can be used to toggle to a different route without going back to the Plans screen. The current route, pattern name, and direction are displayed in the upper right. The **View Timetable** button access to the timetable.

We use a **BASE** pattern to group and sort all the possible timepoints and stops that can exist on a given route. It may be the case that no trip travels to all of them; those trips would use sub-patterns instead. If, for example, a route can split and travel from point A to point B and then to point C or Point D to finish, the Base pattern would be ABCD, with the sub-patterns being ABC and ABD.

The **Pattern Name/Direction** dropdown is used to display sub-patterns. Once a selection is made, the sequence displayed (*i.e.*, the blue boxes for each timepoint) will update and the selected sub-pattern is displayed as well.



Patterns figure 9 – The Map Control buttons

In the upper right section of the Edit Pattern screen there are buttons used to control the dynamic map.

The **Follow all roads** button makes a series of calls to Google to draw paths between the timepoints in the map. In the map, undrawn (or reset) paths are red and drawn paths are blue. The **Follow all roads** button will try to (re)draw each red path.

The **Delete all Paths** button is the opposite of **Follow all roads**; it removes each of the paths.

See whole Route refocuses the map's zoom to display the entire route and path.

Copy to Clipboard copies the stop sequence so it can be pasted elsewhere or used for the Bulk Import section on another pattern.

The **Sub Patterns Table** links to a new screen and is used for creating new patterns utilizing the BASE.

Editing Sub Patterns

Edit Sub Patterns: TMS Test Plan

7 - Magic Mountain/Seco Canyon, Santa Clarita Transit, Santa Clarita

Route* Direction*

BASE	*SETA*	1179	1150	1151	1153	1011	1811	1013	1014	1010	1012	1791	MPDE	1793	1794	AV&C
<input checked="" type="checkbox"/> BASE - Weekday!	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> OB01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> OB02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Patterns figure 10 – The Edit Sub Patterns screen

The **Edit Sub Patterns** screen is used to build additional patterns once the BASE pattern has been established. You can use the **Route** and **Direction** dropdowns to navigate while staying within this screen.

Clicking the **New Sub Pattern** button prompts you to name the new sub pattern, then adds it to the table with all nodes and stops enabled by default. The top of this table displays the timepoints and stops from the BASE pattern. From here, use the tick boxes to toggle if a sub pattern services a given timepoint (larger font), stop (smaller numbers), or the maximum load point (larger font, asterisks).

The **X** icon to the left of each sub pattern can be used to delete it.

The **Save** button will commit your changes, and the **OK** button will take you back to the main Patterns screen once you are finished. **Cancel** will discard the changes you've made.

The Pattern Overview Screen



Patterns figure 11 – The Pattern Overview screen

The left side of this screen shows a blue box for each timepoint. Clicking one of these boxes will expand it to show more information about the pattern between it and the following timepoint. The above figure shows the connection between “Decoro Dr & MCBean Pky” and “Alta Vista Ave & Constellation Rd”. The information inside the expanded display includes the stop listing along the right side, and an entry for each path and connection between those points. Clicking a connection will expand it and clicking a path will expand that.

Changing a Path Within a Pattern

Change: Path

From Node* To Node*

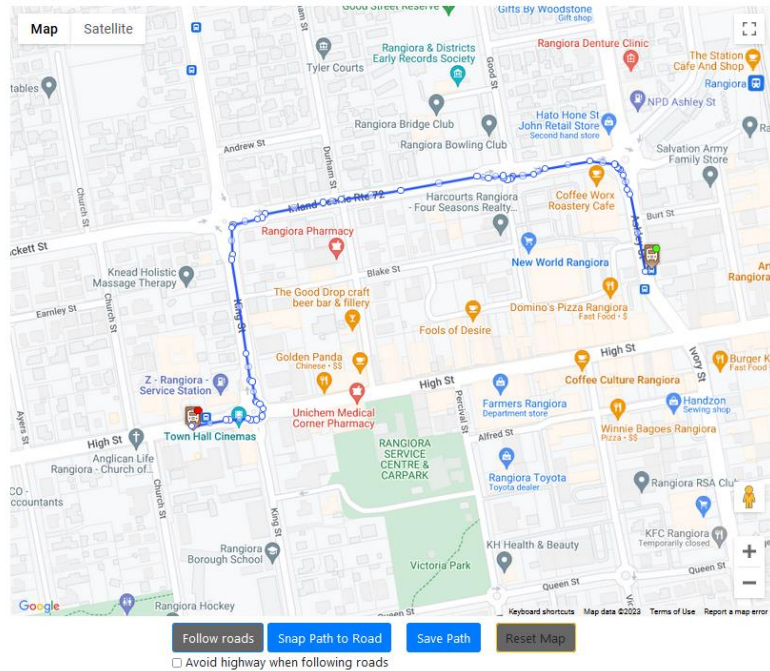
Service

Route

Pattern Name

From Time To Time

Distance mi



Patterns figure 12 – The Change: Path screen

This screen is used to trace the paths travelled when moving between points. It consists data pertaining to the path on the left, an interactive map on the right, and a set of map controls at the. The left side will automatically fill the data from the path you were looking at when you pushed the **Edit Path** button. The data on the left side can be adjusted as desired. The distance will automatically populate based on the map trace, once you click **Save Path**.

You can manually draw traces by repositioning the circles along the blue trace line.

Dragging those circles and dropping them in a new position will alter the path.

The **Follow roads** button is used to call Google for a suggested routing. This can be saved with **Save Path** or reset with **Reset Map**. **Snap Path to Road** is be used to have Google to redraw the path along the road(s).

Save, **OK**, and **Cancel** are used to commit your work once finished or to discard it and return to your previous page.

Adding Trips via the Patterns Screen

If you are unfamiliar with the way trips are defined and presented within TMS Online, please refer to the next section, “Trips – Overview of Trips” first and then refer back to here.

Trips on Pattern: 27 Delete All Trips Add New Trip(s) View Timetable

	Service	Time at MLP	MGMO	THOL	MRTD	NERN	AV&C	MPDE	MBNA	SETA	Trip Number	Sign Code	Secondary Sign Code
X Edit Trip	1. Weekday	7:53:00	7:53:00	7:57:00	8:08:00	8:14:00	8:24:00	8:27:00	8:31:00	8:38:00			
X Edit Trip	2. Weekday	17:46:00	17:46:00	17:50:00	18:02:00	18:08:00	18:18:00	18:21:00	18:25:00	18:32:00			
X Edit Trip	3. Saturday	19:11:00	19:11:00	19:15:00	19:26:00	19:32:00	19:42:00	19:45:00	19:49:00	19:56:00			
X Edit Trip	4. Saturday	17:46:00	17:46:00	17:50:00	18:02:00	18:08:00	18:18:00	18:21:00	18:25:00	18:32:00			
X Edit Trip	5. Saturday	16:21:00	16:21:00	16:25:00	16:37:00	16:43:00	16:53:00	16:56:00	17:00:00	17:07:00			
X Edit Trip	6. Sunday	12:06:00	12:06:00	12:09:00	12:21:00	12:27:00	12:37:00	12:40:00	12:44:00	12:51:00			
X Edit Trip	7. Sunday	7:53:00	7:53:00	7:57:00	8:08:00	8:14:00	8:24:00	8:27:00	8:31:00	8:38:00			

Patterns figure 13 – Adding Trips (bottom section of Patterns screen)

The bottom of the Patterns screen has a table and functions related to adding new trips. Each trip on the selected pattern has its own row. The header row shows the **Service**, **Time at MLP** (see below for more information on how trips are constructed), the timepoints on the pattern, and the **Trip Number**, **Sign Code**, and **Secondary Sign Code** assigned to the trip.

You can use the **X** icon to delete a single trip, or the **Delete All Trips** button to clear them all at once.

Add New Trip(s) is used to add trips to the list.

Patterns figure 14 – Add New Trip(s) drop-down menu

When **Add New Trip(s)** is pressed, the screen shown in figure 14 is presented. You may use this screen to add one or more trips using the selected pattern.

Verify or select the service you want your trips to appear on in the dropdown menu.

Enter the **Time at MLP** to determine the time of day at which TMS will build your trip. From this, TMS will use the connections and patterns you entered earlier to fill in the rest of the data for the timetable.

XM (past midnight) is used to tell TMS Online that you’re building a trip that starts after midnight on the current service day. Use this checkbox if you’re using military time and defining trips that start after 2400.

Headway is the number of minutes dictating the gap between trips (when adding more than one). If your headway is 60, each trip will be spaced out by an hour.

The **Until** and **Number of Trips** boxes tell the system when to stop creating trips. **Until** is a time of day. **Number of Trips** will create that many trips.

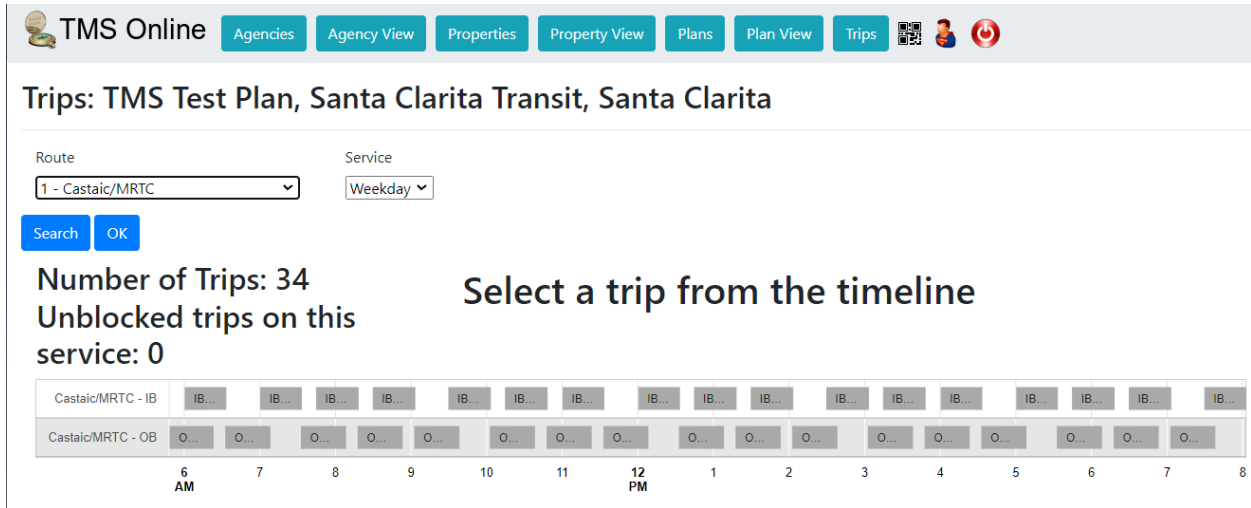
When finished, hitting **Add Trips** will commit your trip or trips to the table

Trips

Overview of Trips

The Trips screen displays the timetable for the specified **Route** and **Service**.

Opening the Trips Screen



Trips figure 1 – Opening the Trips screen

Across the top of the screen, select which **Route** and **Service** Day you want to work with.



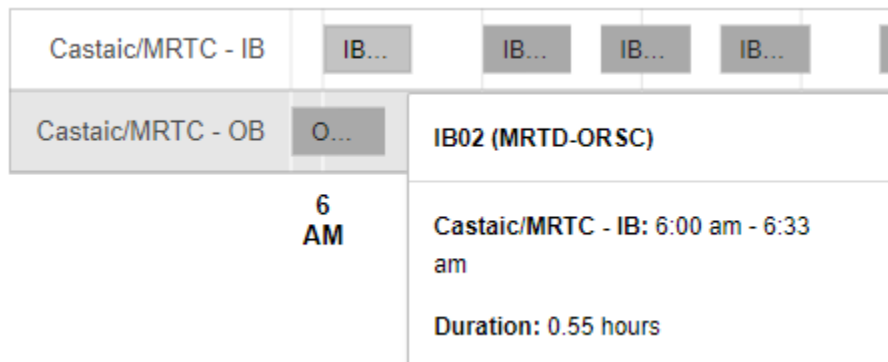
Trips figure 2 – Selecting a Route and/or Service

When a **Route** and **Service** day are selected, TMS Online will display the number of trips on this route and service, as well as any unblocked trips on the service:



Trips figure 3 – Trips information

You may hover your mouse over a trip to get a brief overview of information:



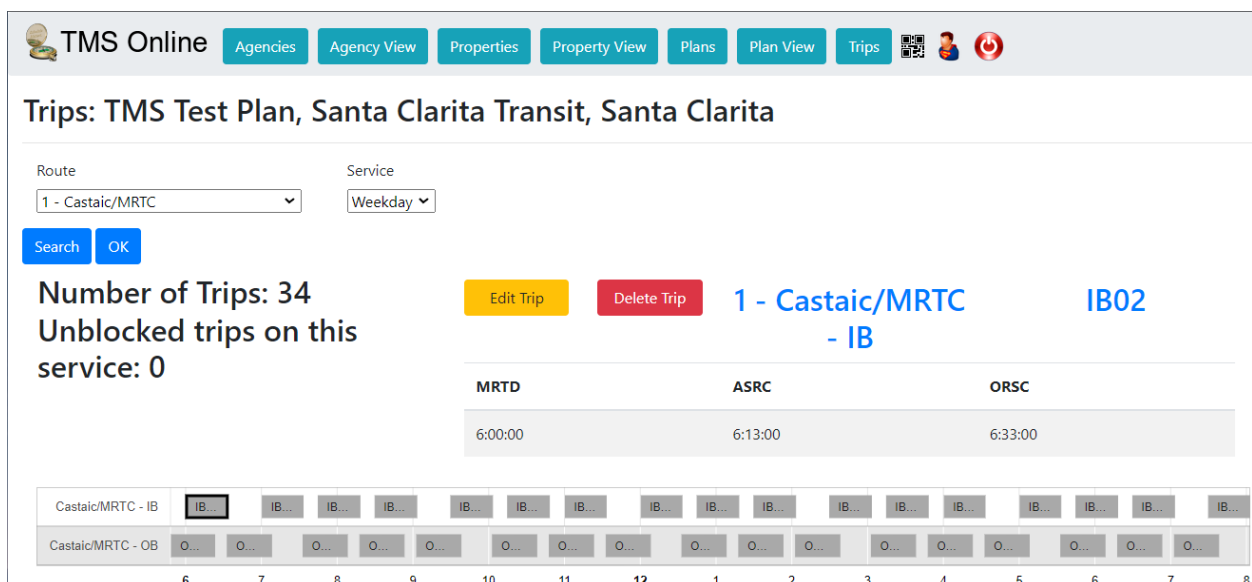
Trips figure 4 – Information at a glance

The information box that displays will tell you:

- The Pattern used for the trip
- The Route that the trip is on
- Its direction of travel
- When the trip starts and ends
- The duration of the trip

Clicking on the trip will bring up a more detailed look, including information about the timepoints that trip uses, the pattern, and the direction. You may edit the MLP time of the trip or delete the trip entirely.

Selecting an Individual Trip



Trips figure 5 – Selecting an individual trip

The Timetable

The **Timetable** section of TMS Online allows you view, edit, or delete trips from the schedule.

TMS Online Agencies Agency View Properties Property View Plans Plan View Timetable

Santa Clarita Transit, Santa Clarita

Route: 1 - Castaic/MRTC
Service: Weekday

Route/Service: [Dropdown] Direction*: [OB] [OK]

Pattern Name	ORSC	RYCA	MRTA	
1. OB02	05:48*	06:13	06:23	Edit Trip
2. OB02	06:33*	06:58	07:08	Edit Trip
3. OB02	07:33*	07:58	08:08	Edit Trip
4. OB02	08:18*	08:43	08:53	Edit Trip
5. OB02	09:03*	09:28	09:38	Edit Trip
6. OB02	10:03*	10:28	10:38	Edit Trip
7. OB02	10:48*	11:13	11:23	Edit Trip
8. OB02	11:33*	11:58	12:08	Edit Trip
9. OB02	12:33*	12:58	13:08	Edit Trip
10. OB02	13:18*	13:43	13:53	Edit Trip
11. OB02	14:03*	14:28	14:38	Edit Trip
12. OB02	15:03*	15:28	15:38	Edit Trip
13. OB02	15:48*	16:13	16:23	Edit Trip
14. OB02	16:33*	16:58	17:08	Edit Trip

Path: OB02 [Dropdown]

Map Satellite

MRTA

Timetable figure 1 – Timetable opening screen

You may switch between different Routes and Services by clicking on the **Route/Service** button. The dropdown displays the routes on its left-hand side and the services on the right:

1 - Castaic/MRTC	Weekday	Saturday	Sunday
2 - ValVerde/Transit Center	Weekday	Saturday	Sunday
3 - Magic Mountain/Seco Canyon	Weekday	Saturday	Sunday
4 - Bouquet Cyn/Newhall Metrolink	Weekday	Saturday	Sunday
5 - Stevenson Ranch/Vasquez Cyn	Weekday	Saturday	Sunday
6 - Stevenson Ranch/Shadow Pines	Weekday	Saturday	Sunday

Timetable figure 2 – Changing to a different Route/Service

You may change the direction of travel for the route they are on by selecting from the **Direction** dropdown:

Direction*

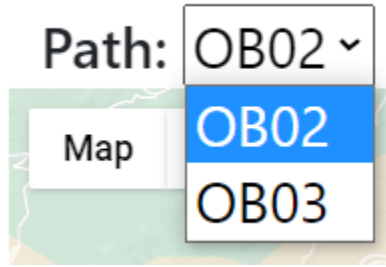
OB ▾

OB

IB

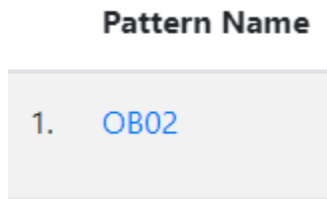
Timetable figure 3 – Changing direction of travel

Selecting the dropdown near **Path** will allow you to change the pattern:



Timetable figure 4 – Changing paths

If a pattern needs editing, simply click on the pattern shown under **Pattern Name...**

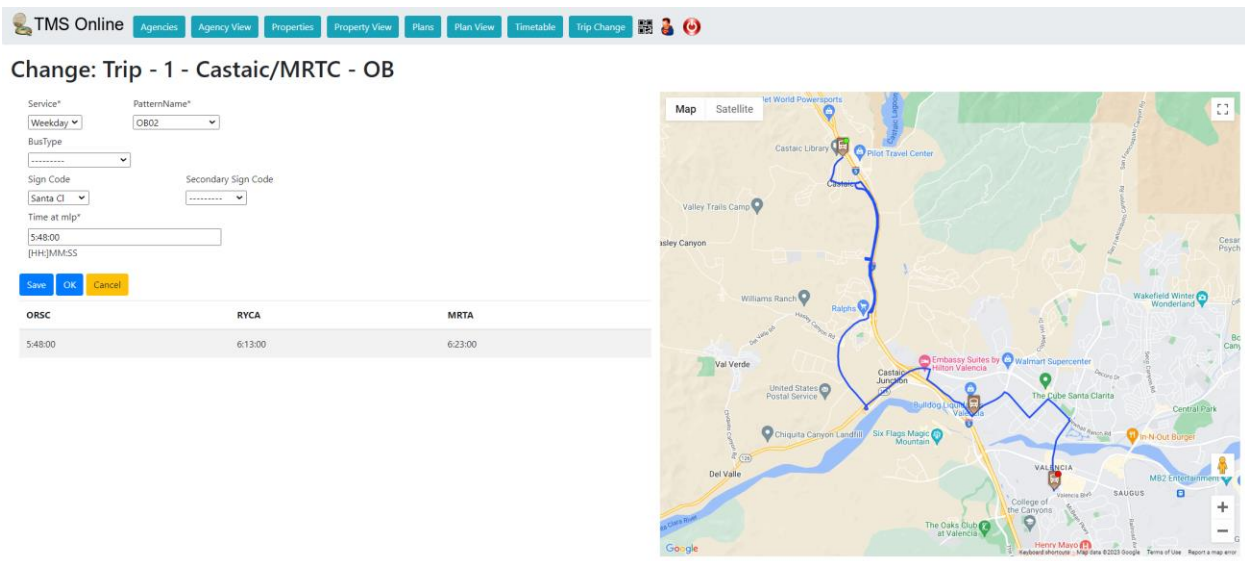


Timetable figure 5 – Selecting a Pattern

... and the system will bring you to the **Patterns** page described earlier in this document.

Changing Trips

To change a trip in TMS Online through the **Timetable** screen, click on the **Edit Trip** button.



Timetable figure 6 – Changing a Trip

On the **Change Trip** screen, you may change:

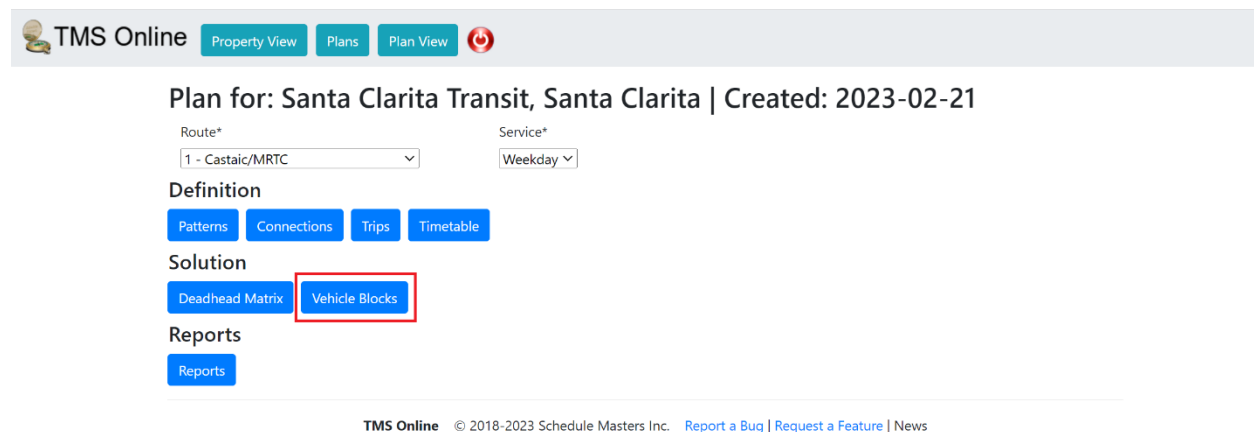
- Service Day (value required)
- Pattern Name (value required)
- Bus Type
- Primary Sign Code
- Secondary Sign Code
- Time at MLP (value required)

Vehicle Blocks

Overview of Vehicle Blocks

Vehicle blocks are sets of trips grouped together to represent what a vehicle does during a service day. Aside from in-service trips, blocks are made up of garage deadheads at the start and end of the block and possibly interline deadheads to reposition the vehicle.

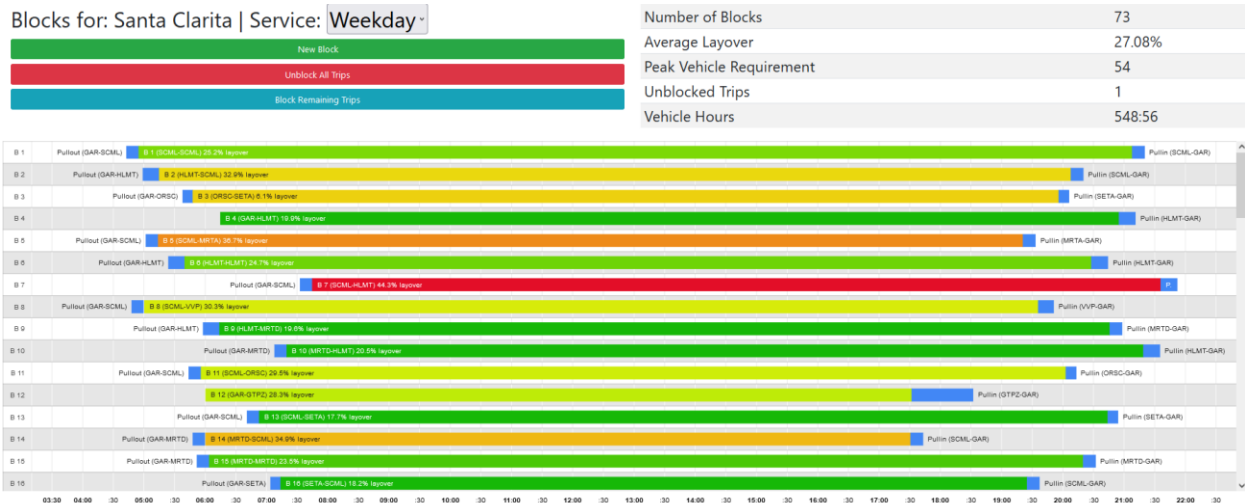
Accessing the Vehicle Blocks Screen



Vehicle Blocks figure 1 – Opening the Vehicle Blocks screen

Vehicle Blocks are accessed via the **Plan** view for the plan you have selected. From the **Plan** view, select the **Route** and **Service** you want to display the blocks for and then click the Vehicle Blocks button.

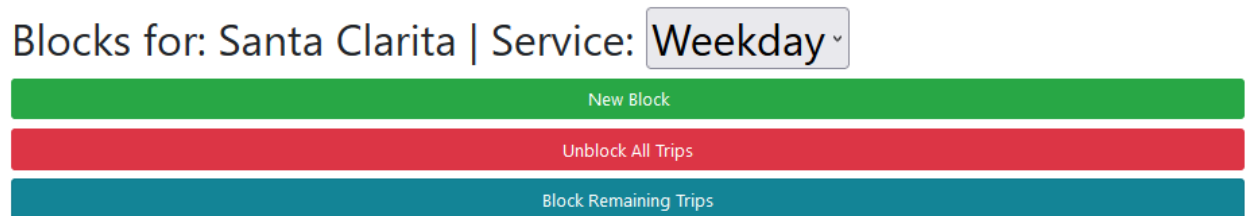
Blocks Display



Vehicle Blocks figure 2 – The main Vehicle Blocks Display

The **Vehicle Blocks Screen** contains summary data pertaining to your blocking solution, a timeline of the created blocks, and the functions available to create new blocks. There is a dropdown you can use to select your **Service**. When this screen is first opened, the **Service** from the **Plans** dropdown is shown. You may change the **Service** without exiting the screen.

Commands Used on the Blocks Screen



Vehicle Blocks figure 3 – Commands related to the creation of new blocks

The upper left portion of the **Blocks** screen contains commands for creating and undoing blocks. The **New Block** button opens a new screen and is used for creating a block from scratch. The **Unhook All Trips** button will undo your entire current blocking solution for the selected **Service**. The **Block Remaining Trips** button creates blocks automatically using your previously-entered deadhead connections from earlier in the system.

Block Summary

Number of Blocks	73
Average Layover	27.08%
Peak Vehicle Requirement	54
Unblocked Trips	1
Vehicle Hours	548:56

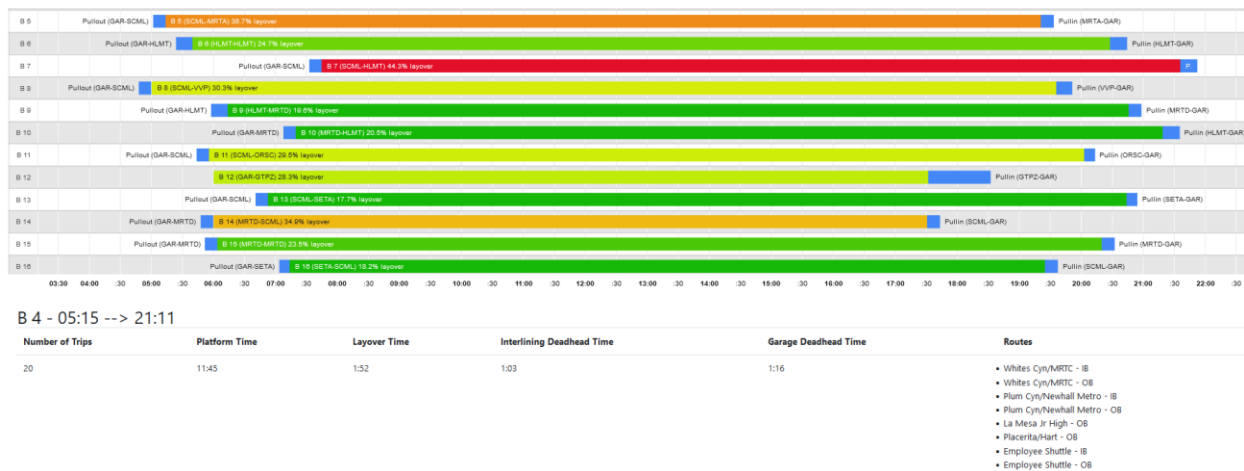
Vehicle Blocks figure 4 – Block summary

The upper right portion of the **Blocks** screen contains statistics for the current blocking solution. It includes the number of blocks, average layover, peak vehicle requirement (also displayed graphically at the bottom of the page), the number of unblocked trips, and the total number of vehicle hours.



You may want to make multiple plans until you find the exact version you want to use.

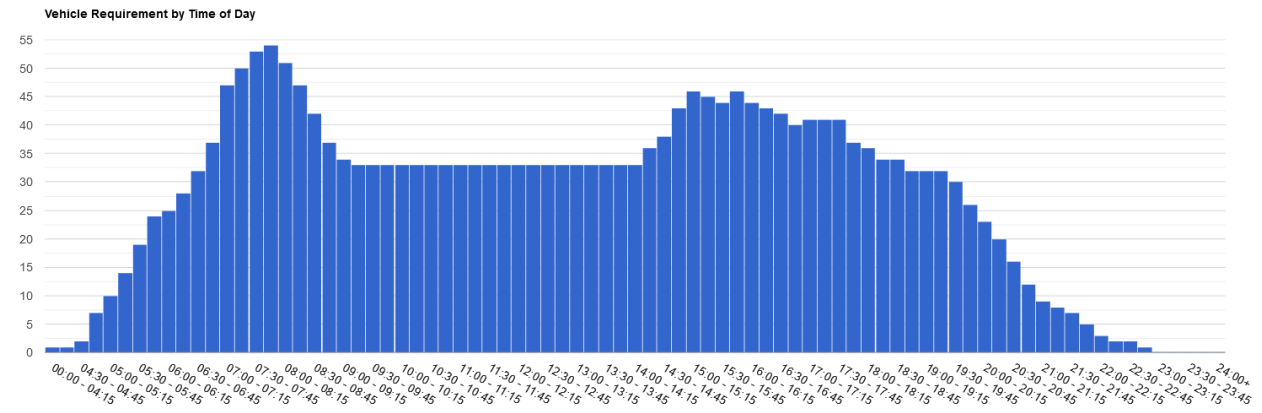
The Blocks Timeline / Individual Block Summary



Vehicle Blocks figure 5 – Block timeline and individual block summary

The middle portion of the **Blocks** screen is a visual timeline of the blocks in your system. Each line is a single vehicle, with the block number displayed at the leftmost side. Pullout and pullin information is displayed as well as the start and end timepoints and the block's percentage or layover. The color of each line corresponds to the layover percentage of the block, showing the relative efficiency of each block. The blue segment at the beginning and end of each block represents the garage deadhead (maintained in the Connections Table). Clicking a line will bring up more information for that block below the timeline, as well as the ability to edit or undo each block individually.

Peak Vehicle Requirement Graph



Vehicle Blocks figure 6 – Peak vehicle requirement graph

The bottom portion of the **Blocks** screen shows a graph of your vehicle requirements in fifteen-minute increments.

Editing and Creating New Blocks

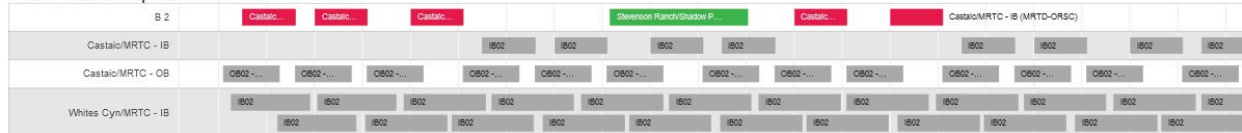
Santa Clarita Transit: TMS Test Plan

Service: **Sunday** | Block: **2** | New Block | Delete Block
 Block Number*: | PO Garage: | PI Garage:
Save OK

Select a trip from the timeline

Number of Trips: 6

Unblocked trips on this service: 286



Vehicle Blocks figure 7 – Blocks Workbench overview

The Blocks Workbench is the main screen for creating and editing individual blocks. It contains a set of controls, a map, and a visual timeline.

Using the Blocks Workbench

Santa Clarita Transit: TMS Test Plan

Service: **Sunday** | Block: **2** | New Block | Delete Block
 Block Number*: | PO Garage: | PI Garage:
Save OK

Vehicle Blocks figure 8 – Blocks Workbench controls

The top of the Blocks Workbench contains a series of controls used for the map and timeline. The **Service** dropdown lets you navigate without leaving this screen. The **Block** dropdown is used to update

the map with a new block's data, and the **Block Number** box allows you to reset the block number. **PO Garage** and **PI Garage** are used to (re)select the pullout and pullin garages.

The Trip Timeline

Number of Trips: 6
Unblocked trips on this service: 286



Vehicle Blocks figure 9 – Trip Timeline

This section of the Block Workbench is a visual timeline of the trips in your system. Grey trips are unblocked. Trips are assigned to a block via the **Add Trip to Block** button. Once added, those trips are grouped by color (based upon matching an existing pattern in that block).