

# What is new in PTV Vistro 2021

The background of the lower half of the page is black. It features several overlapping, semi-transparent geometric shapes in shades of red and orange. These shapes form a large, abstract, upward-sloping form that resembles a stylized ribbon or a series of overlapping planes, creating a sense of depth and movement.

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## Preamble

This document provides an overview of PTV Vistro's important updates from version 2020 to version 2021. The functionality previously added before version 2020, in version 2020, and service packs are not included in this document. Please see the prior release notes for these features. The release notes future versions of 2021.00-xy include additional new features that are not covered in this highlight document.

Detailed descriptions of how to use the new functionality can be found in the Vistro 2021 online help and in the document "Vistro 2021 - Manual.pdf".

## Release Highlight Summary

PTV Vistro 2021 rethinks agency workflows and provides targeted enhanced integrations centered around the [urban mobility system](#) concept. Entangled layers of mobility change the focus from macroscopic overviews to pinpointed meso- and microscopic urban planning. To address modern challenges, agencies need a regular supply of detailed engineering data fed to sophisticated model resolutions.

PTV Vistro 2021 answers the call by bridging the gap between an agency's Traffic Operations and Planning Teams. Fueled by PTV Vistro, Traffic Operations teams can create large PTV Visum planning models and maintain them with engineering-level data like updated traffic signal timings and coordination, and up-to-date roadway improvements.

Build your traffic network in PTV Vistro and experience accurate out-of-the-box microscopic simulations in PTV Vissim, utilizing Vistro's new model junction design features and tools upgraded export functionality. Create the most powerful microsimulation of urban corridor and alternative and innovative intersection designs with a click of a button.

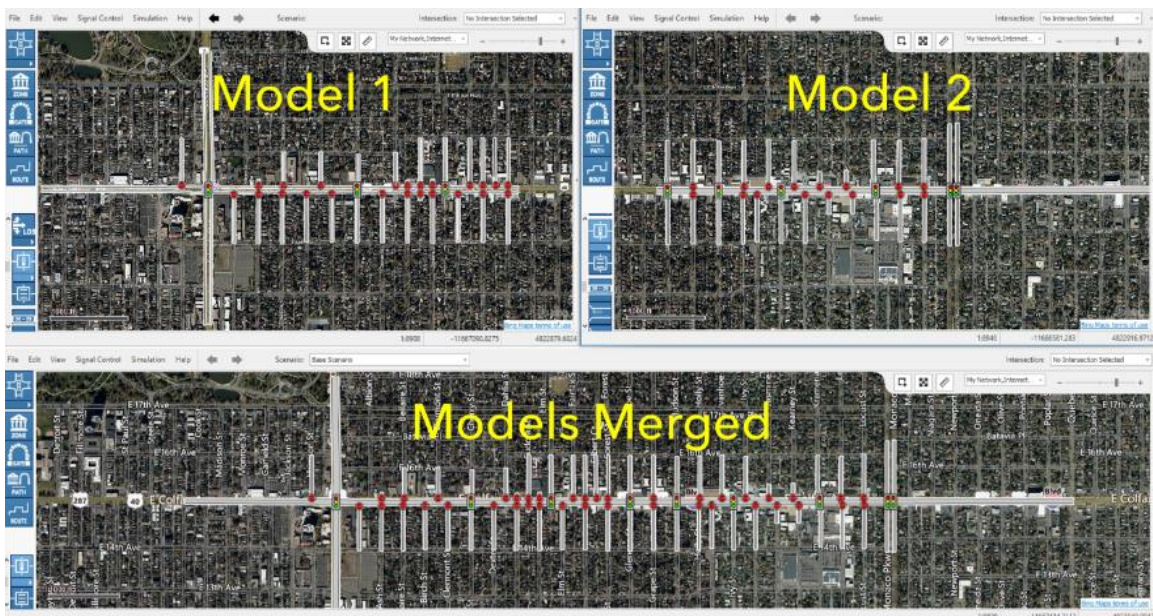
# 1 File Import / Export

## 1.1 Merging Models

Models can now be merged into one network. With this functionality, you can easily combine small projects scattered across a city and make one master citywide model. Additionally, competitor models can be converted to PTV Vistro, then stitched together. This feature is centered around the [urban mobility system](#) concept and opens the possibility to integrate Vistro's detailed traffic operation models into PTV Visum.

Create or maintain these large regional transportation Visum planning models with PTV Vistro. Moreover, this feature also enables you to create and insert Vistro templates and examples of complex intersections into any Vistro model to streamline model efforts.

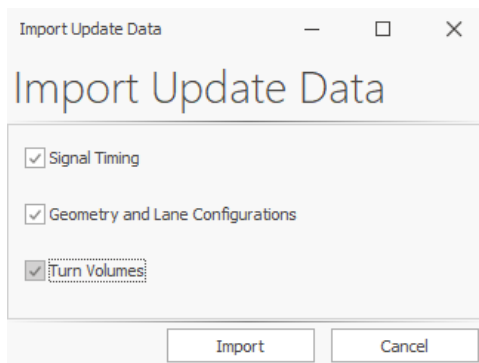
Use the **File->Import** or **File->Export** option to merge models. For more information see Chapter 14 of the User Manual.



## 1.2 Updating Models

Updating base models and scenarios data like signal timing, geometry and lane configuration, or volumes are now available. This feature is useful for updating peak period time-of-day information or updating a base model data from a test scenario. Also, this feature enables you to convert a competitor's numerous time-of-day models files into one managed PTV Vistro model utilizing scenario management.

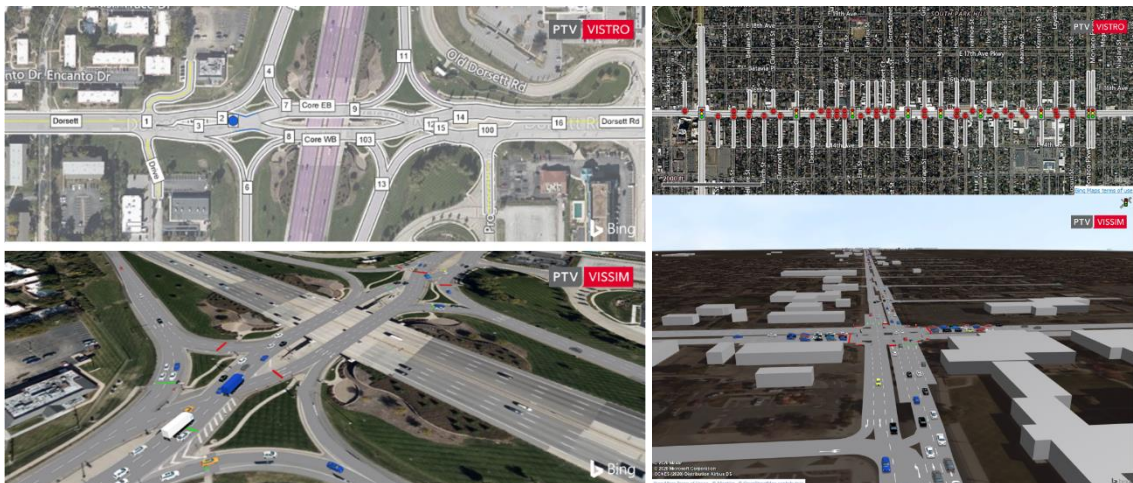
Use the **File->Import** or **File->Export** option to merge models. For more information see Chapter 14 of the User Manual.



### 1.3 PTV Vistro to Vissim Import Improvements

Simulate your PTV Vistro 2021 networks with the enhanced PTV Vissim 2021 ANM import or utilize the built-in *Preview in Vissim* functionality. This improvement positions items like stop bars, crosswalks, radii, and medians to the exact coordinates and locations in Vissim and correctly sizes the intersection and node structure. This improved integration enables you to create powerful 3D out-of-the-box simulations with a click of a button directly from your PTV Vistro 2021 model resulting in huge time-savings from the [urban mobility system workflow](#).

For more information see Chapter 14 of the User Manual.



## 2 Intersection Setup and Graphical Features

### 2.1 Stop Line and Crosswalk Setbacks

On the *Intersection Setup* tab, you can now define the locations of crosswalks and stop bars with positive and negative setbacks. This feature enables you to size intersection size width for visualization, optimization, and setbacks will transfer to PTV Vissim for accurate microsimulation.

For more information see Chapter 7.3 of the User Manual.

Parameter	Crosswalk				Crosswalk				Crosswalk				Crosswalk			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Name	Main St at Paul Herold Dr															
Signal	Signalized															
Control Type	HCM 6th Edition															
Analysis Method	HCM 6th Edition															
Approach	Northbound				Southbound				Eastbound				Westbound			
Lane Configuration	[Diagram]				[Diagram]				[Diagram]				[Diagram]			
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Peak Hour Arrival Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Peak Hour Analysis Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Width [ft]	10.00	10.00	10.00	10.00	10.00	10.00	11.00	11.00	11.00	10.00	10.00	10.00	10.00	10.00	10.00	
No. of Lanes in Entry/Exit	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	
Entry/Exit Lane Length [ft]	75.00	0.00	0.00	100.00	0.00	0.00	200.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
No. of Curbs in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Median	[Diagram]															
Median Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Approach Offset [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Stop Line Offset [ft]	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Stop Line Setback [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Grade [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Left Curb-to-Curb Width of the Crosswalk [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Right Curb-to-Curb Width of the Crosswalk [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Left Width of Paired Crosswalk Shoulder [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Right Width of Paired Crosswalk Shoulder [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Curb Profile	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	
Height of Paired Curbs [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Proportion of un-protected parking spaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Left Walkway Width of Crosswalk [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Right Walkway Width of Crosswalk [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Right Side Corner Curb [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Crosswalk	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	
Crosswalk Width [ft]	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	
Crosswalk Setback [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Crosswalk Length [ft]	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	
No. of Right Turn Channelizing Islands	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Channelized	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	
Channelized Control	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	[Diagram]	
Channelized Turn Lane Target Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	Right Lane	
Channelized Radius [ft]	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	

### 2.2 Turning Radii

Turning radii inputs are now visualized to show realistic conditions at intersections. These radii inputs are also utilized in the HCM 6th Edition multimodal calculations. Radii dimensions entered in PTV Vistro will transfer to PTV Vissim for accurate microsimulation and sizing of intersection widths for visualizations and better optimization.

Pre-Vistro 2021 networks that had a default 0 value will have a radius of 0 leading to sharp edges when the network is opened in Vistro 2021. To change the radius for all intersections at the same time use the *Radius Corner Curb* attribute in the *Multi-Change tool* under **Edit-> Multi Change**.

For more information see Chapter 7.3 of the User Manual.

The screenshot displays the PTV Vissim/Viswalk 2021 interface. On the left, an aerial view shows an intersection of Westwood Northern Blvd, Westwood Blvd, and Westwood Southern Blvd. A red circle highlights a specific area on the Westwood Northern Blvd approach. On the right, the 'Intersection Setup' window is open, showing a table of parameters for a 'New Intersection'.

New Intersection												
Signalized												
ICW/ISL Signal												
Approach	North-South			East-West			North-South			East-West		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Turning Movement												
Stop Volume (veh/h)	95	190	190	75	150	75	200	200	50	100	200	100
Total (veh/h)	95	200	200	25	225	225	400	400	150	400	400	100
Law Width (ft)	10.50	10.50	10.50	10.50	10.50	10.50	11.50	11.50	11.50	12.00	12.00	12.00
No. of Lanes in Entry/Exits	0	1	0	1	0	1	0	1	0	1	0	1
Entry/Exits Length (ft)	0	0	0	250.00	0	0	0	0	0	125.00	250.00	175.00
Exit/Exits Length (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Median	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Median Width (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Median Offset (ft)	-3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Stop Line Setback (ft)	3.00	2.00	2.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Queue Length	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Queue (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Width of Curb-to-Curb Width of the Crosswalk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Width of the Bicycle Lane (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Width of Paved Outside Shoulder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Curb Profile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Width of Shared Parking Lane (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Width of the Bicycle Lane (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Width of the Outside Shoulder	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R. Paved Concrete Curb (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crosswalk	<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"/>
Crosswalk Width (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Crosswalk Setback (ft)	-3.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
Crosswalk Length (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
No. of Right Turn Channelizing Islands	0	0	0	0	0	0	0	0	0	0	0	0
Channelized	<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"/>
Channelized Control	Yield right of way	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized	Signalized
Channelized Turn Lanes	<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"/>
Channelized Shoulder (ft)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



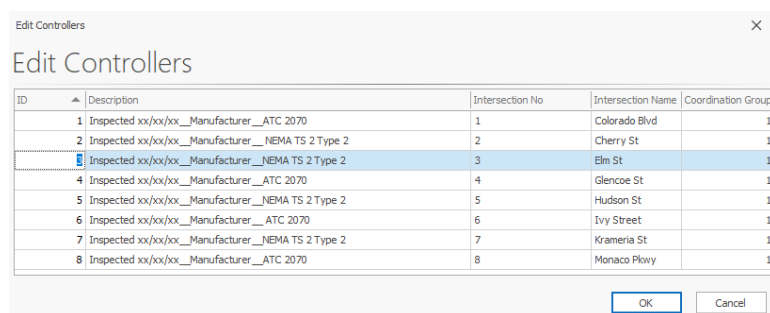
## 3 Traffic Signals

### 3.1 Traffic Signal Controller List and Handling

A Traffic Signal Controller summary is added to enable you to list and edit traffic signal controller ID numbers. Manage your traffic signal controllers with the editable description field. Here you can list the provide details about the signal controller like the manufacturer, type, or last inspection date. The Edit Controller window is under **Signal Controller ->Edit Controllers**.

Also, the handling of controller IDs was improved in general. When a new ID is assigned to an intersection, that ID will in general also be assigned to the corresponding controller.

For more information see Chapter 8.3 of the User Manual.



The screenshot shows a window titled "Edit Controllers" with a close button (X) in the top right corner. Below the title bar is a table with the following columns: ID, Description, Intersection No, Intersection Name, and Coordination Group. The table contains 8 rows of data. The third row is highlighted in blue.

ID	Description	Intersection No	Intersection Name	Coordination Group
1	Inspected xx/xx/xx_Manufacturer__ATC 2070	1	Colorado Blvd	1
2	Inspected xx/xx/xx_Manufacturer__NEMA TS 2 Type 2	2	Cherry St	1
3	Inspected xx/xx/xx_Manufacturer__NEMA TS 2 Type 2	3	Elm St	1
4	Inspected xx/xx/xx_Manufacturer__ATC 2070	4	Glencoe St	1
5	Inspected xx/xx/xx_Manufacturer__NEMA TS 2 Type 2	5	Hudson St	1
6	Inspected xx/xx/xx_Manufacturer__ATC 2070	6	Ivy Street	1
7	Inspected xx/xx/xx_Manufacturer__NEMA TS 2 Type 2	7	Krameria St	1
8	Inspected xx/xx/xx_Manufacturer__ATC 2070	8	Monaco Pkwy	1

At the bottom right of the window are two buttons: "OK" and "Cancel".

### 3.2 Minimum Green Global Settings Update

To make the creation of Default Signalization and Optimization a more efficient process, there are now two *Global Settings* for minimum green: "Minimum Green, Through" and "Minimum Green, Left". Under **Edit->Global Settings**, the through setting only applies to through movements, and the left setting is applied to left movements, but also the right movements and U-turns. It is not applied to pedestrian signal groups.

This update will allow you to specify a longer minimum green time for thru signal groups, but also a shorter minimum green for turning signal groups.

For more information see Chapter 6 of the User Manual.

## 4 Trip Assignment

### 4.1 Vehicle Miles (Kilometer) Traveled Calculations

Due to the increase in the importance of Vehicle Miles Traveled (VMTs) or Vehicle Kilometers Traveled (VKT), the *Trip Assignment Table* now has a VMT or VKT column. Vistro will automatically calculate the VMT or VKT (depending on the working units) along each *Path* in the *Trip Assignment* tab for both Trip Generation Zones being added or subtracted from the network.

The summary row at the bottom of the trip assignment table will report the total change in VMTs or VKTs along all of the Path assignments in the current scenario.

For more information see Chapter 9.3 of the User Manual.

## 5 Usability Improvements

### 5.1 Updating Approach Directions

The Approach Direction row is now editable to enable you to customize the preferred direction. This is useful for on diagonal networks – and for example, the physical east-bound approach may be locally considered “Northbound” due to the overall direction of the roadway.

When using the *Preferred Main Directions* setting in Global settings, at intersections with four approaches (no free directions), Vistro will automatically adjust the other approaches. However, it is possible to adjust the directions manually if there is a free direction or when using *Use Main and Secondary Directions*.

For more information see Chapter 8.1 of the User Manual.

### 5.2 Intersection Number Handling

The handling of intersection numbers has been updated. You can now freely use numbers in the range of 1000 and above for intersections without conflicts.

This improvement will enable you to use your agency’s preferred intersection numbering schemes in your Vistro model. This also enables better usage of the Values import and export tables to directly link up traffic volume data through a .csv format.

### 5.3 PTV Maps

PTV Maps are now available in Vistro with four color shades as a background. This replaces OSM Maps. To access PTV Maps, go to the Map Layers dialogue, hover over the Internet Map option.

For more information see Chapter 7.1 of the User Manual.

## 6 New Examples

In general, all Vistro examples and documentation have been updated to showcase the Vistro 2021 new features and improved simulation capabilities in PTV Vissim.

Also, the following are new Examples under **Help->Open Example Directory**:

New Examples	Folder	Summary
<b>CFI, DDI, RCUT, SPUI</b>	Alternative Intersections	These 4 examples are a collection of advanced intersection and interchange types. Documentation links to the PTV Vistro Knowledgebase and includes modeling tips.
<b>Freeway Ramps</b>	Freeway	Sample of how to model freeway junctions in PTV Vistro.
<b>Cycle Track with Green Bands</b>	Pedestrian and Bicycles	Demonstrating how to model parallel cycling facilities and green bands for vehicles and bikes.
<b>Austin, Texas</b>	Signal Optimization	This example replaces the older <i>Tyson's Corner</i> example in previous installations. This demos Vistro's capability to model larger signalized networks, optimize several coordination groups, and easily see coordination green band.

## 7 Technical Changes

### 7.1 CodeMeter Runtime

The CodeMeter Runtime deployed with PTV Vistro has been updated to CodeMeter 7.0.

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