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+ New Features and Changes

Calculation

- + Final saturation flow rate: It is now possible to define overrides for final saturation flow rates on signalized intersections in the Global Settings. If activated, flow rates for twelve different types of lane groups can be defined and will be used in the calculations. **(1784)**
- + Right turn on red based on percentage: All settings for right turn on red volumes were moved to the Volumes tab. It is now possible to calculate right turn on red volume based on a percentage of the movement's Future Total Volume. For this, a percentage can be set for each movement that has right turn on red. It is also still possible to enter an absolute right turn on red volume. **(1786)**
- + Two-way stops: The type of site, i.e. 2-lanes, 4-lanes, or 6-lanes, is now determined by the major flow approach with the larger number of through lanes. For example, if that approach has two through lanes, the site is treated as 4-lane-site, even if the other major flow approach is an outbound one-way street. **(1799 !)**

File import / export

- + OSM import: It is now possible to import open street map data. **(157)**

Graphical editors

- + Adding and removing through lanes: There are two new context menu entries 'Add through lane' and 'Remove through lane' on the button at the end of leg handles. They can be used to add extra lanes in the outbound direction, if in reality there are more outbound lanes that Vistro requires to accommodate all incoming movements. These lanes can also be removed, if there are more lanes than necessary. **(1873)**
- + Approach offsets: The new 'Offset' data row in the Intersection Setup grid can be used to change the offset of approaches in relation to their intersection. Positive offsets move the approach to the right, negative offsets to the left. **(1684)**

Intersection setup tab

- + Channelized control and bypass control: The value 'Target lane' was removed from the drop-down lists for 'Channelized control' and 'Bypass control'. There are now new data rows 'Channelized Turn has Target Lane' and 'Bypass has Target Lane' to define these geometric properties independently from the control types. **(1843)**
- + Exit pockets: The new data rows 'No. of Exit Pockets' and 'Exit Pocket Length' can be used to add and remove exit pockets. It is now possible to add inner exit pockets. Vistro no longer automatically removes exit pockets, when the lane allocation on a different approach is adjusted. Leg handles now have context menu entries 'Add through lane' and 'Remove through lane' to change the number of lanes, that leave the network. **(947)**

Non-graphical editors

- + Notes: A new data row 'Notes' was added to all grids. **(1495)**

Optimization

- + Master controller: It is now possible to set a controller as master controller for a given coordination group. In the optimization, the time offset of this controller is set to 0, and the offsets of all other controllers are calculated relative to the master controller. **(1691)**

Traffic control tab

- + Additional offset references: New references, per NCHRP Report 812 - Signal Timing Manual, 2nd Edition have been added under Intersection Settings. These references include: Beginning of Both Green; Beginning of First Yellow; Beginning of First Red; Beginning of First Flashing Don't Walk. **(1891)**

- ⊕ Delayed vehicle green: The new value Delayed Vehicle Green can be used to delay the green time start of a vehicle phase. The value is added to the point-in-time, where the green phase would usually start and the signal group split time remains. The value changes calculation results, but it is not taken into account in the calculation of right turn and left turn adjustment factors. **(1766)**

⚠ Breaking Changes

Calculation

- ⚠ Signalized intersections: When an approach has more than one right turn or more than one left turn, and the movements to different target approaches originate from different lanes, these lanes are no longer put in the same lane group. Instead, there is a lane group for each target approach. **(1896)**
- ⚠ Two-way stops: Calculation results differ, if the approaches of the major flow have a different number of inbound through lanes. **(1799 ⊕)**
- ⚠ Two-way stops: Results are different, when there is a major flow with non-zero grade. **(1900)**

Traffic control tab

- ⚠ Bicycle LOS: 'Bicycle LOS' may be different. **(1718)**
- ⚠ Signalized, Intersection V/C: Intersection V/C may be different on intersections with short permissive left turns and high volume. **(1858)**