SIDRA INTERSECTION 9.1 UPDATE HISTORY

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SIDRA INTERSECTION 9.1 UPDATE HISTORY

Version: 9.1.6.228

Release Date: 31 January 2024

Enhancements

- Improvements made to Progression Factor calculations for some coordinated cases in oversaturated conditions.
- The Code Signing Certificate has been updated to continue allowing trusted installation on user systems.
- Improvements to the Floating Licence system.
- Improvements to User Guide and Help.

Bug Fixes

- Short lane upstream delays were overestimated in some unusual signalised cases with very short green times.
- Priorities data was unintentionally reset to defaults when Movement Classes were added or removed in the Movement Definitions dialog.
- In some unusual cases, the Percentile Queue Distance value for All Movement Classes was incorrectly reported in some output reports.
- Fixed a problem that prevented Dummy Movement Minimum Green Time from being applied to a phase in some cases when User-Given Phase Frequency was specified.
- The Parclo Template has been modified to overcome some warning messages related to continuity of Movement Classes.
- In the Project Pane, a collapsed Network Folder opens unexpectedly if another empty Network Folder is deleted.
- Unintended access to the Priorities dialog for an Unsignalised Pedestrian Crossing was available via right-clicking the Site in the Sites in Network list or Network Configuration dialog. This access has been removed.

Version: 9.1.5.224

Release Date: 15 November 2023

Enhancements

- Improvements to User Guide and Help.

Bug Fixes

- Fixed a user interface error that occurred when attempting to delete a Phase Sequence.
- The Lane Editor in the Lane Geometry dialog showed lanes incorrectly in some cases where there were slip lanes turning both left and right from a one-way approach.
- The Lane Type setting in the Lane Geometry dialog was not blocked in pedestrian crossing Sites (no turns are possible at these Sites, so a slip lane specification should not be allowed).
- Fixed a problem where commands could not be accessed via a right-click in the Layout Picture.
- Disabling the Approach Table (Option A unchecked) in *User Report Templates for Sites* did not work for individual Sites. The table still appeared in the report despite being disabled.

Version: 9.1.4.221

Release Date: 21 September 2023

Enhancements

- Warning about zero Free Queue specification is now also given for cases of U-turns before the intersection.
- In addition to existing dialog messages, a processing diagnostic warning will be given if Pedestrian Movements have been included in the analysis but the Pedestrian Volumes have been left with default values.
- Short lane and two-segment lane overflow arrow will be shown in grey if the overflow is not applicable to the currently selected movement class.
- Improved error-checking process during project file saving and backup file creation.
- A message is now shown during the process of saving a project file, warning the user not to close the program before the process has completed.
- For the RCUT Network Templates, the folders have been renamed and a more detailed description about the facility is given in the Network Title.
- The broken (dashed) arrow shown at the last exit in the Route Output Midblock Flows display has been changed to a solid arrow to clarify the extent of the Route.
- Improvements to User Guide and Help.

Bug Fixes

- Fixed a Map Extract problem for roundabouts with some uncommon leg orientations.
- Negative end gain and pedestrian effective green time were not calculated correctly in some cases where Pedestrian Clearance Time 1 was user specified.

- Longest queue distance (in metres / feet) was not reported correctly for the approach in the Movement Summary report in some unusual cases where this queue occurred in a different lane to the longest queue in vehicles.
- A problem with delay calculations for continuous movements that queue behind a movement subject to gap-acceptance has been fixed.
- Fixed a problem with the upstream delay reported for some short lane cases with two green periods.
- Upstream delay was not being included in Route Travel Time calculations.
- Incorrect Site icon was shown for Arterial and Freeway segments in Network Movement Displays.
- An error related to the use of an ampersand character in Movement IDs has been fixed.
- An incorrect value of Peak Flow Period reported in Detailed Output for cases where this parameter was overridden by a Network specification has been fixed.
- Fixed some user interface problems related to overflow specification for short and two-segment exit lanes.
- Fixed a user interface error in the Parameter Settings dialog.
- Stopped the incorrect overriding of the Site Performance measure with the Network Performance measure if they differ in Network cases.
- Fixed a crash that occurred in Network processing when there was an unconnected Site and Network Optimum Cycle Time was selected.
- Lane editing via a right-click on the Layout picture within the dialog did not work in some circumstances.
- A processing error that occurred if a pedestrian crossing was specified across an approach that consisted only of a single shared slip lane has been fixed.
- When the Average Queue option was selected for Site or Network Graphs, the Graphs and Variable Run reports still showed Percentile Queue values.
- Removed a lag in the Volumes dialog that sometimes led to entry of incorrect volume data values when typing quickly.
- The "Movement Capacity and Performance Parameters" table in the Detailed Output for Network Sites was wrongly removed from the output when the option "Results for Approach Movements by Movement Class" was set in the Output Options tab in the Interface dialog.
- A spurious error message appeared if the Site Cost Unit differed from the Network Cost Unit.
- The red dot indicating Phase Transition was showing incorrectly in Phasing diagrams for some project files that had been converted from earlier SIDRA versions to SIP9 format.
- Layout pictures were incorrectly showing a Priority Merge layout when Zipper Merge was specified for a lane other than the outermost lane.
- The contents of the Interactive Offsets and Modify Network dialogs were not showing when the popup warning related to the dialog was enabled. This problem was isolated to some specific models of graphics card.
- Popups were not displaying correctly in some Network Displays.
- Specification of Pedestrian Actuation led to small adjustments to user-specified phase times in some unusual cases.
- In some cases of Optimum Cycle Time with the lower limit set to the Program option, the first cycle time shown in the Variable Run table was not correct. The correct value was shown in the Detailed Output.
- The Lane Editor was not showing correctly for some slip lane cases when the Setup was for driving on the right side of the road.

Version: 9.1.3.210

Release Date: 6 April 2023

Enhancements

- A change was made to the way that user-given phase frequency is applied to minimum required times in cases where phase times are not specified. If the program estimate was 100% (usually due to some movements not being actuated) and 100% is user specified, the minimum required times are not changed.
- Movement Displays for Queue, Queue Distance and Queue Storage Ratio will show a green (rather than grey) colour for continuous movements in cases where there is no queue extending from downstream. The legend for these displays has been improved to provide better explanation for the grey colour.
- When a Capacity Adjustment value of zero is applied as specified by the user (option checked for Network analysis), the Approach and Lane Displays will show a grey colour instead of green in Network output. This indicates that the user value is applied although no adjustment is being made to the capacity.
- Width of pop-up boxes in Movement Displays has been reduced to minimise overlapping.
- Restrictions in the Lane Geometry and Pedestrians dialogs related to continuous Lane Control and specification of Pedestrian Movements have been removed. These dialogs now work in the same way as they did in Version 9.0.
- Dialog Messages will be given if Pedestrian Movements have been included in the analysis but the Pedestrian Volumes have been left with default values.
- User Reports are now blocked in cases where a Site or Network has not been processed.
- Improvements to some diagnostic messages.
- Improvements to User Guide and Help.
- Improvements to Layout Pictures.
- Improvements to installation process, particularly in relation to FLOATING licences.

Bug Fixes

- In unusual cases, some incorrect values were shown for Queue Storage Ratio when the "Classic" Movement Display format was used.
- An error in the delay value occurred in cases of a downstream merge with no flow in the exit short lane.
- Some of the headings in the Project Summary Table were incorrect.
- A Diagnostic Message related to Movement Classes not having continuity between Sites in a Network was appearing unnecessarily.
- In some uncommon cases, an error message about a short lane overflowing into a shorter lane was incorrectly reported for a full-length overflow lane.
- When using Windows 7, a system error appeared and the report or display was not shown when the user tried to open some reports and displays.
- Some Network cases where Lane Change values were not appearing in reports and displays have been improved.

- In rare cases, opening the Network Routes Display with a certain set of Routes caused the program to become unresponsive.
- Use of the Interactive Offset tool incorrectly led to user-specified phase change times being changed for some cases.
- In rare cases, processing a Network after a Time-Distance Diagram is opened, or use of Interactive Offsets caused an internal program error which may have led to data corruption.
- Processing a Site or Network while changing its name in the Project Pane occasionally led to corruption of data.
- At signals, in some cases where a vehicle movement was opposed both by other vehicle movements and by pedestrian movements, the opposed movement lost time was reported incorrectly.
- In the case of two or more Sites in a Network connected by continuous lanes, the Back of Queue from the downstream Site was not passed on to upstream Sites beyond the first one.

Version: 9.1.2.202

Release Date: 21 December 2022

Enhancements

- The enhanced gap acceptance capacity model (applying the critical gap and follow-up headway parameters to each Movement Class separately) is now applied for Exit Merge calculations.
- Improved checking and reporting of input errors for some pedestrian movement timing cases.
- When using the Output to PDF function, if the specifications for the output PDF filename result in the name of a file that already exists, the user will be presented with a dialog to decide between replacing the existing file or creating a file with a new name.
- Improvements made to FLOATING Licence sign-in process.
- Enhanced the installation package to allow installation on some non-Windows computers.
- Improvements to the User Guide and Help System.

Bug Fixes

- In some cases of user-specified Phase Frequency, the value of the Terminating Intergreen time for the phase was not reduced in accordance with the Phase Frequency.
- The Site Input Comparison facility did not report differences in Phase Frequency data in some cases.
- User specification of Late Start or Early Cut-Off for a vehicle movement when a user-given phase time was less than the pedestrian minimum (implied phase frequency case) led to incorrect reporting of an input error.
- Desired Speed for Networks and Routes was not calculated correctly for some cases under the US HCM (Customary) software setup. This also led to incorrect reporting of Speed Efficiency.
- An incorrect tooltip for Network Templates was fixed.
- Output Comparison with a Site in another Project File wrongly selected Network Site rather than Single Site.
- Fixed a problem with excess queue calculations in Networks where a short queue related to continuous lanes downstream was incorrectly reported.

- Queue Storage Ratio was not reported correctly for a Route that consisted entirely of continuous movements.
- For a non-roundabout Site (e.g. Two-Way Sign Control) created in Version 9.0 and based on a User Setup, there was a bug that prevented the Site from being converted to a roundabout.
- For a roundabout created in Version 9.0 and based on a User Setup, it was not possible to add a leg.

Version: 9.1.1.200

Release Date: 2 November 2022

This is the first release of SIDRA INTERSECTION 9.1. The new features of this version available in the first release are listed below.

SIDRA INTERSECTION Version 9.1 introduces important traffic model enhancements and extensive user interface and model output improvements.

This is the **24th major SIDRA version** since its first release,

New Floating Licence

- A new cloud-based FLOATING Licence method introduced allowing a set number of seats to be shared by a number of simultaneous End Users within an organisation to access the software on a first come, first served basis.

Output Reports and Displays

- Output reports and displays by Movement Class, Pedestrians and Persons with the ability for the user to choose the Movement Classes (LVs, HVs, Buses, Bicycles, etc.) to include. Accordingly, all relevant performance statistics (degree of saturation, delay, travel time, stop rate, cost, emissions, etc.) will be presented by Movement Class (MC).
- User Reports function improved through Customise Report and Customise Display options to select individual elements of report and displays.
- PDF Output function improved allowing users to set the order of output reports and displays in the PDF file.
- Enhanced Time-Distance display functions include options to use Effective Timings or Displayed Timings (with phase names shown), and an option to show Secondary Platoons formed by vehicles queued on intermediate approaches.
- Parameters of HCM Roundabout Capacity models given in the Detailed Output report.
- In the SCATS Parameters table in the Detailed Output report, "NA" (Not Applicable) will be shown for a few more cases where it is considered not to be appropriate to estimate SCATS MF.
- Midblock Unsignalised Pedestrian (Zebra) Crossing Analysis table in the Detailed Output report.
- Significant improvements in Roundabout and Network layout pictures and various displays.
- Cost parameters updated to latest values available.
- Optional yellow highlighting of special results in output reports.
- Numerous other improvements to Site, Network and Route output reports and displays.

Model Improvements

- In addition to estimating the effects of short lanes on intersection capacity, the unique SIDRA short lane model has been enhanced to include:
  - a new model for delays and stops experienced by drivers in the queue that forms upstream of short lane entry, and
  - improvements to the model accounting for the effect of platooned arrivals on short lane capacity and performance.
- New Variable Demand Model with Initial Queued Demand input for multi-period congestion modelling using Residual Queued Demand for oversaturated lanes determined in the previous analysis period (with the facility to import available).
- The gap acceptance capacity model has been enhanced by applying the critical gap and follow-up headway parameters to each Movement Class separately. For lanes that include more than one Movement Class, the shared lane capacity equation is applied using the Movement Class capacity values. This method replaced the use of average critical gap and follow-up headway values of Movement Classes to calculate the shared lane capacity. The method applies to all gap acceptance situations (sign control, roundabouts, signals).
- HCM Edition 6 Extended Roundabout Capacity Model. This new capacity model option:
  - enables better model calibration by specifying parameter values that distinguish different lane configurations including separate parameters for bypass lanes,
  - is based on US research (roundabout surveys carried out for Wisconsin DOT as published by Campbell, Olsson and Sternke 2021), and
  - uses the roundabout capacity equations introduced in HCM Edition 6 which remain unchanged in HCM Edition 7.
- Enhanced method for program-determined Conflict Zone Length for unsignalised pedestrian crossings where vehicles give way / yield to pedestrians.
- Updated congestion term in performance functions.
- Improved Lane Blockage model for some specific conditions.
- Extra Midblock delay parameter as user input.
- Improved performance model for All Way Stop Control using lane-based Departure Headway parameter.
- Improved signal timing method combining Pedestrian Actuation and Minor Phase Actuation requirements.
- Improved multi-sequence and variable signal phasing and timing analysis.
- New input parameters:
  - Include Short Lane Upstream Delay & Stops
  - Initial Queued Demand
  - Apply US HCM 6 Extended Roundabout Capacity Model
  - HCM 6 Extended Roundabout Capacity Model Parameters
  - Extra Midblock Delay
  - Show Secondary Platoons (Time-Distance Display Option)

Site and Network Templates

- New and improved Network and Site Templates.
  - New Network and Site templates added and existing templates improved.
  - Network Templates command introduced for adding selected Templates into the Project easily.
  - New Site Templates:
    - Shuttle Flow Operation (Signals)
    - Raindrop Roundabout
    - Turbo Roundabout
    - Arterial Segment (One-Way and Two-Way)
    - Shuttle Flow Operation (Give-Way)
    - Two-Stage T-Intersection (Added Lane, Priority Merge and Zipper Merge)
    - Pelican Crossing
    - Pedestrian Hybrid Beacon (PHB) Crossing
  - New Network Templates:
    - Partial Cloverleaf (Parclo) Interchange
    - Double Teardrop Roundabout Interchange
    - Roundabout with Bicycle Circle (Dutch Roundabout)
    - Unsignalised Wide-Median Intersection

User Interface

- Improved roundabout layout pictures using a new method:
  - more realistic kerb lines, entry, exit and circulating lane markings, and transition lines,
  - improved drawings of elliptical roundabouts, small size roundabouts, raindrop (teardrop) designs, slip/bypass lanes and 45-degree approaches,
  - unsignalised pedestrian crossings shown, and
  - improved function for setting the number of downstream circulating lanes.
- Improved Network layout pictures by providing ability in the Network Configuration dialog to:
  - place Sites closer for the Network layout picture to match the Network geometry, and
  - select multiple Sites simultaneously for repositioning or removing from a Network.
- Right-clicking over a Site in Network layout pictures and Lane Displays for Networks to access Site functions including selection of the Site.
- New option to show the Route Output displays as part of the whole Network.
- Function to import signal sequences introduced.
- The method for default variable sequences added.
- Phase frequency defaults in User-Given Phase Data defaults changed to Program (was 100% as Input).
- Editable phasing diagrams in all tabs of the Phasing & Timing dialog.
- New US format labelling of signal phases.

VOLUMES Utility

- Updated API application VOLUMES Excel with a new function to Import Volumes from external sources (VicRoads and Matrix volume data spreadsheets).