

SIDRA INTERSECTION 7.0 UPDATE HISTORY

Version: 7.0.9.6902

Release Date: 27 Dec 2017

Enhancements

- "Average Number of Cycles to Depart" and "Average Queue Storage Ratio" added to Detailed Output report.
- Improved modelling of two-segment lane cases where vehicle movement classes are discontinued between Sites.
- The method for calculating phase time allocations in cases with pedestrian movements and excess green time available in the cycle has been improved.
- The method of shared lane delay splitting when the HCM Delay Equation is in use has been revised. This was done to fix a problem where very high movement delays were reported at unsignalised Sites where turn movements ran in shared lanes with continuous movements.
- Improved method for "From-To" phase determination in cases where a shared lane that is not a slip lane has a turning movement that runs in all phases.
- Lower limit for input of Roundabout Circulating Width reduced to 2 metres / 7 feet.
- Improved some messages in the Detailed Output.
- Site Type icon added to Site names in the Import Sites dialog.
- "Reset to Defaults" added to the Layout Options dialog.
- Quick Input added for Leg Names in the Intersection dialog.
- Improved some right-click menus so that items not applicable to the current selection are disabled.
- The Free Queue Distance input parameter in the Lane Geometry dialog is now blocked for exclusive lane cases where it is not applicable.
- Improved timing-related error messages for Common Control Group cases.
- Improved messages in Network Routes dialog and Route Data dialog.
- Various minor improvements to footnotes in output and to messages in the Diagnostics Report.
- Various minor improvements to output reports.
- Updates to the API help file.
- Various updates and significant additions to the User Guide and the Help system.

Bug Fixes

- Sites now reported in a consistent order in the Timing Analysis report for Common Control Groups.
- Back of queue values for lanes on internal legs in Network analysis were wrongly reported as zero in some cases.
- Optimum cycle time may not have been determined correctly if one of the following Performance Measures was selected: Cost, Fuel, CO₂, HC, CO or NO_x.
- Fixed a problem related to inclusion of effects of Late Start and Early Cut-off in Minimum Cycle Time calculations.
- Fixed several issues related to inclusion of pedestrian volumes in "Persons" statistics. Demand flow unit in Graphs and Variable Run report changed to "Persons".
- Fixed problems with Pedestrian options in Demand & Sensitivity settings. For results options, Pedestrian options are now only available for Signalised Sites.
- Fixed a problem related to calculation of queues in two-segment lanes.
- Fixed a two-segment lane case where queue overflow was not assigned correctly.
- Fixed an error related to timing calculations for exclusive lanes with two green periods.
- Fixed an error related to timing calculations for a shared lane with a movement that runs in all phases.
- Fixed a timing calculation error related to movements with very low demand and short minimum times.
- Fixed some opposed turn calculation problems that led to errors in cases where a phase was specified with zero intergreen time.
- Fixed a problem in the Timing Diagram that occurred in some cases with zero intergreen times.
- Fixed a bug in the Time-Distance diagram that occurred when vehicle movement classes in a Site were changed and the Network was re-processed.
- Fixed problems that occurred in the Lane Geometry dialog related to adding and deleting slip lanes.
- Fixed a problem related to data input range checking in Network and Route input dialogs.
- Fixed a data selection issue in the Volumes dialog.
- Fixed some unusual cases where net inflows were reported incorrectly in the Lane Changes report.
- Fixed a problem where zero probability of overflow was reported in the Lane Flows report for two-segment lanes.
- Fixed an error related to the calculation of Residual Demand value reported in the Detailed Output report.
- In the Input Comparison facility, reported dates and times have been changed to the local time format, rounding of some numbers has been made consistent and a number of errors have been fixed.
- Fixed a problem with outputs at roundabouts and sign control where an oversaturated short lane overflows into a continuous lane.
- Fixed program handling of various reports including Network Site LOS Summary, Movement Timing, Network Flows, OD Arrival Flows, Approach & Exit Arrival Flows that gave program error messages under certain circumstances.
- Phasing Summary and Timing Analysis report items were wrongly showing in the Site Output for Network/Route section in some Common Control Group cases.
- Fixed program error checking so that some input errors related to Pedestrian Timing are now reported correctly.

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- Fixed program error checking in relation to green time calculation errors (wrong error message was displayed previously).
 - Fixed some program errors in the Timing Analysis report and the Movement Timing report.
 - Fixed some problems related to "dragging and dropping" tabbed displays in the Display Pane.
 - The setting for roundabout splitter island colour in the Layout Options was not working.
 - The Cancel button was not working in the Signal Timing Output dialog in the Settings tab.
 - Fixed a problem with Approach Control settings when a Metered Roundabout Site is converted to an unsignalised roundabout.
 - Variable Run report was not being updated for Optimum Maximum Green settings.
 - Fixed a problem that prevented the Network Site Roundabout Circulating Flow Report showing data after a volume data change and reprocessing of the Network.
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Version: 7.0.8.6853

Release Date: 26 July 2017

Enhancements

- Significant changes to setting and usage of the Coordinated Site / CCG parameter in the Network Timing dialog. "Coordinated" setting is now always available.
- Improvements to platoon pattern calculations for cases with sign control major road between two coordinated signals.
- The program will now give an error message if User-Given Phase Times are specified with Variable Phasing.
- Various new and improved Diagnostic messages added. Formatting of Diagnostics Report improved.
- Improved messages and explanatory text throughout input dialogs and output reports.
- Improvements to Timing Analysis and Phasing Summary reports.
- Various improvements to Pedestrian, Roundabouts and Lane Geometry dialogs.
- Various improvements to Movement, Lane, Volumes, Phasing and Route Displays.
- Various Site, Network and Route Layout picture improvements.
- Improvements to net inflow calculations for User-Defined Movement Classes that do not continue upstream.
- Improved diagnosis of cases where the Network Minimum Cycle time was violated by user inputs.

Bug Fixes

- Area Type Factor was not included in calculation of SCATS MF estimates.
- Movement Timing Outputs fixed for continuous movements so that no red time is shown. This also improves Time-Distance diagrams that include continuous movements.
- Various fixes to Time-Distance diagrams where green bands were not shown correctly.
- Fixed some cases where 100% blockage was reported for internal sign control major road approaches between two coordinated signals.
- Fixed some cases where the Network Cycle Time calculated using the Program option was not correct.

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- Network Input Report and Network Input Comparison did not report phasing data correctly for CCGs.
 - Site Input Report and Site Input Comparison had incorrect table headers and did not report some Lane Geometry differences correctly.
 - Fixed some Route Display cases where movements at the start or end of the Route did not display.
 - Corrected gap-acceptance parameter values in Merge templates for US Customary Setup.
 - Quick Input was not working for Turn On Red Parameters in the Gap Acceptance dialog, Settings tab.
 - Fixed Approach Control setting for one-way exit legs at Sign Controlled Sites.
 - Fixed incorrect setting of Exit Distance in some cases where the Input option was used.
 - Fixed setting of Green Split Priority for movements in some Network analysis cases.
 - Fixed setting of Reference Site / CCG in cases where the current Reference Site / CCG is removed from the Network.
 - Fixed incorrect reporting of Reference Site / CCG in some phase deletion cases when variable phasing was used.
 - Fixed setting of Lane Control for signalised leg at a metered roundabout.
 - Fixed a problem with Reset to Defaults in the Vehicle Movement Data dialog, Path Data tab.
 - Fixed a problem with Quick Input for Inscribed Diameter in the Roundabouts dialog.
 - Selected Phase Sequence in Variable Phasing Analysis was incorrectly chosen in some cases.
 - Fixed Priority settings in Zebra Crossing templates in relation to Staged Pedestrians.
 - Demand Flows rather than Arrival Flows were shown in the table in the Arrival Flows display.
 - Fixed updating of the Input Volumes report when the option to include Pedestrians was changed.
 - Diagnostics incorrectly shown in relation to reduced arrival flow rates in some cases where these were not reduced.
 - Fixed a printing issue with Brother brand printers.
 - Fixed a problem with Shift-F2 selection in the Lane Geometry and Lane Movement dialogs.
 - Fixed an error that occurred if a Network Site was removed from a Network while its Diagnostics report was still showing.
 - Fixed a case where a particular arrangement of two closely-spaced Sites caused an error in the Network Configuration.
 - Fixed a user interface issue related to closing output tabs.
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Version: 7.0.7.6759

Release Date: 3 Apr 2017

Enhancements

- SIDRA Glossary of Road Traffic Analysis Terms included in software. Substantial improvements to the User Guide. Access to User Guide, Glossary and Help now available under the File tab.
- Major improvements to SIDRA INTERSECTION API to create a Project file, add a Site / Network / Common Control Group (CCG) / Route, specify geometry data (e.g. add and remove intersection legs and lanes, specify lane configuration and lane disciplines), specify phasing and timing data, and so on.
- Significant improvements to modelling of queue blockage where queues pass through continuous lanes between signalised Sites.
- Significant improvements to Network iterative method and stopping conditions including allowance for the variability of back of queue values in addition to degree of saturation. Maximum allowed number of Network iterations increased to 30.
- New parameters Demand Flow (Entry Total) and Midblock Inflow (Total) introduced in Network Summary and Route Summary reports.
- Improved Quick Input options for Lane Blockage Calibration Factor.
- Improvements to Roundabout Opposing Pedestrian tables in Detailed Output.
- Improvements to conversion process between Two-Way Stop and Two-Way Give Way/Yield Sites.
- New Common Control Groups Phase Sequence display added.
- Improvements to Movement Timing display and Phasing displays.
- Improvements to Network Cycle Time calculation method.
- Improvements to the Phasing Summary and Timing Analysis reports. User input values of Yellow, All-Red and Intergreen times added to Detailed Output.
- Improvements to timing calculations related to Phase Actuation, Pedestrian Actuation and Phase Frequency. New messages included in Timing Analysis report and Detailed Output in relation to this.
- Added new footnotes explaining zero required time for undetected movements in Timing Analysis report and Detailed Output.
- Improvements to input error checking in variable phasing cases.
- Improved rules related to determination of Green Split Priority for movements in Network Analysis.
- Improvements to handling of "No Leg" and One-Way Exits in Intersection dialog including requirement for user to specify Exit Distance for One-Way Exit legs.
- Improvements to Reset to Defaults and Quick Input in several input dialogs.
- Various improvements to the new SPUI Site that is created via the Site tab in the program.
- New and improved diagnostic messages related to Network results, including messages to alert users to high levels of inflows/outflows and lane changes, and to effects of capacity constraint and downstream blockage.
- New Diagnostic messages introduced to warn user if Arrival Type or % Arriving During Green was user specified in a Site which is part of a Network analysis and is overriding the SIDRA Network estimates. New diagnostics re cycle time calculation methods.
- Zooming added to Diagnostics report and consistent font sizes used. "Do not show again" checkbox added to Diagnostics popup message.

- Short Lane lengths are now checked to ensure that they do not exceed the length of any full-length lanes.
- Improved error messages related to problems with SQL installation to assist users in diagnosing these problems.
- "1PC" licence no longer allowed to be set up on a Windows Server.
- Various Site and Network Layout Picture improvements.
- Various improvements to Network Displays, Route Displays and Network Lane Displays.
- Improvements to Volumes and Flow displays.
- Improved efficiency of handling Route Output data in output database.
- Improvement to Route selection in Route Output Comparison.
- Improvements to internal data structures related to Network connections.
- Updated code signing certificate (important when SIDRA INTERSECTION is being installed on a computer with no internet connection).
- Improvements to movement selection methods in Phasing & Timing dialog, Advanced tab.
- Minor improvements to dialog layout and text generally.
- Improvements to Graph scaling for delays.
- Improved messages explaining cases where Graphs cannot be displayed.
- Minor improvements to Network Input Report and Network Input Comparison.
- Improved error checking during processing.
- Improvements to handling of SIDRA INTERSECTION Project Files to minimise the possibility of file corruption.
- Improved reporting of minor problems encountered in the user interface during software use, advising user of recommended action.

Bug Fixes

- Fixed incorrect range check for HCM6 Roundabout Capacity Model Parameter B for Multi-Lane Circulating: Subdominant Lane.
- Lane control was not being set to Signalised in some cases for lanes on the Metered leg at roundabout metering. This caused calculation problems in some unusual cases.
- Fixed reporting of Phase Times in Outputs in cases where Intergreen Time values differed between phases.
- Fixed a problem related to signal coordination calculations and Time-Distance display when signalised Sites were connected to unsignalised Sites with a one-way major road.
- Fixed a problem that prevented the showing of the Time-Distance Display for Sites in a CCG in some cases.
- User-Given Phase Times with Phase Frequency were not applied in Network Analysis.
- Fixed updating of Phase Sequence report when the selected Movement Class is changed.
- SCATS MF value was not shown ("NA" reported) for some lanes where a valid MF value should have been determined.
- Fixed incorrect display ordering of some staged pedestrian movements in the Phase Sequence and Phasing Summary.
- Fixed some error cases related to Variable Phasing in Network Analysis.

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- Minor corrections to Signal Coordination report footnotes.
 - Fixed some problems with Input Comparison related to Lane Geometry, Basic Saturation Flow, Priorities and Vehicle Volumes.
 - Fixed a problem with capacity calculations when extremely large Free Queue values were specified.
 - Minor fixes to Lane Geometry and Lane Movements dialogs.
 - Gap-acceptance capacity model was not set correctly in some zebra crossing templates – it is now set to one of the "M1" models for all Setups.
 - Fixed some printing problems where the right edge of some diagrams was cut off when Print All was used.
 - Fixed Diagnostics popup message so that input error messages were shown correctly.
 - Ensured that Diagnostic messages are cleared after changes to input data.
 - Removed spurious "Process Route" command from right-click menus.
 - Quick Input was not working for some Delay Model parameters.
 - Fixed the Start Loss (Input) text box in the Gap Acceptance dialog in cases when the turn movement is not opposed by pedestrians.
 - Average Queue Storage Ratio showed wrong values for movements, legs, Site and Network when the US setup with customary units was in use.
 - Fixed a Processing Error caused by exit short lane merge calculations in cases where different movement classes were used.
 - Improved internal error checking in Network Output processing.
 - Fixed various display issues with diagonal pedestrian crossings.
 - Incorrect pedestrian output values appeared in some cases in Movement Displays for Networks and Routes.
 - Some Movement Displays were showing pedestrian movement outputs although the output data did not exist for pedestrians. Pedestrians are now only shown in Delay (Control), Level of Service and Cost displays.
 - Labelling of Variable Phases made consistent across various Phase displays and dialogs.
 - Fixed updating of Site, Network and Route IDs across input dialogs and all reports and displays.
 - Fixed a highlighting problem in View Layout in the Lane Movements dialog related to selection of specific movement classes.
 - Fixed Volumes dialog updating issue with User Classes 3-6.
 - Fixed a Version 6 to Version 7 project file conversion problem related to Reference Phase specification.
 - Fixed project file conversion problems related to One-Way Exit legs.

Version: 7.0.5.6563

Release Date: 21 Oct 2016

Bug Fixes

- Fixed a problem that caused Project file corruption when a Site or Network was rotated.
- Fixed Persons/h value for Arrival Flows in the Network Summary.
- Right side of the Detailed Output report was cut off when viewed on some high resolution monitors.

Version: 7.0.4.6559

Release Date: 18 Oct 2016

Enhancements

- HCM Edition 6 features introduced including the new Chapter 22 Roundabout Capacity Model (as the "HCM 6" option) and new intersection and network Level of Service options. The implementation of the new HCM 6 roundabout capacity model in SIDRA INTERSECTION offers the same model extensions as the HCM 2010 model.
- Volume Display option introduced to show volume data in the same order as the movements in the displays.
- Network Rotation feature added.
- Early Cut-Off and Late Start vehicle movement timing parameters introduced.
- Diagnostics report now includes information about iterations for unsettled Site analysis cases and warnings of AWSC range problems.
- Improved warning messages and information in Diagnostic reports related to Network input and analysis results are introduced to assist users in understanding cases where input needs review or various Network conditions need attention.
- Network Model Accuracy Level and Number of Iterations are now reported in several Site Output reports under the Network and Route tabs, and in the Diagnostics report.
- When Phase Frequency is implied by specification of a phase time that violates movement minimum green, the intergreen time is adjusted using a method that is consistent with the method used for user-specified Phase Frequency.
- New check introduced to ensure that at least one phase has Phase Frequency = 100% specified.
- Improved error checking of phase sequences when variable phasing is used to ensure that invalid sequences are not generated.
- Minor improvements to various reports related to phasing and timing.
- Quick Input function for Blockage Calibration Factor added in Lane Movements dialog.
- New Lane Blockages report introduced.
- The layout of the Import Pedestrian Volume Data dialog has been made consistent with the corresponding dialog for vehicles.
- Facility to convert old SIDRA Version 3 project files (AAP extension) added to Convert (Batch).
- Improved reporting of Convert (Batch) progress in the Status Bar of the user interface.
- Overflow Lane Number now included in the Lane Flows report.
- Various Site and Network Layout Picture improvements.
- Site ID added to Site and Network Layout Pictures.
- Various improvements to Network Displays and Network Lane Displays.
- Improvements to various footnotes in output reports.
- Minor improvements to Site outline pictures used in Network Configuration.
- Minor improvements to some dialog option names and some error messages.
- Prevented editing of the Quick Access Toolbar as changes were not saved.

Bug Fixes

- Some cases where a fixed Start Loss value was incorrectly applied to a Vehicle movement when the Pedestrian and Vehicle movement did not run together have been fixed.

- The Timing Analysis report incorrectly displayed non-existent second green period data if the Site was re-processed with this report open.
- Fixed a problem that caused Silent Installation to fail if the folder name had spaces.
- Fixed a problem that caused the software not to run when used with some Turkish language versions of the Windows operating system.
- Fixed a problem that prevented copying some output tables when the decimal separator character was not a point.
- The Print All dialog was empty for AWSC Sites.
- The Circulating Transition Line item was unavailable in the Roundabouts dialog for one-way approaches and exits. This is now always available for every leg that exists at the Site.
- Fixed some selection problems with Continuous movements in the Priorities dialog.
- Continuous movements were sometimes not shown correctly in the Common Control Group Sequence Editor.
- Fixed some problems with Movement Displays when there was a pedestrian crossing across a slip lane.
- Fixed incorrect ordering of pedestrian movements in some Movement Displays.
- Fixed reporting of Network and Route Level of Service in cases where average speed exceeded Desired Speed.
- Fixed a problem with reporting of phasing in unusual cases that went to maximum iterations and had multiple phases deleted by the program.
- Fixed some inconsistencies in Network processing restrictions related to PLUS and Educational licences.
- Removed spurious Graphs output item when Common Control Groups are used.
- Fixed various minor issues related to Network by Routes output report.
- Route Layout did not update when Site geometry was changed.
- Fixed an error that sometimes occurred when converting very large earlier version Project Files to Version 7.
- Removed spurious blue text that sometimes appeared on top of Site output reports list in Project Pane.
- Fixed a minor problem with queue length calculation for two-segment lanes.
- Fixed a Network processing error that occurred with two-segment exit lanes.
- The Lane Changes report did not show Movement Classes that existed at the upstream Site but did not exist at the downstream Site.
- Variable Run report was not cleared after a Site input data change.
- Fixed a sizing problem and some problems when layout drawing errors occurred with the View Layout feature in the Lane Geometry and Lane Movements dialogs.
- Fixed a minor formatting error in the Actuated Signal Information table in the Detailed Output.
- Fixed an error that sometimes occurred when the Print Preview windows was clicked.
- Fixed a problem that stopped Lane Display reports being cleared after a change to input data.
- Fixed an error that occurred when adding and removing legs at a metered roundabout.

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- Fixed an error that occurred when converting some old Version 4/5/5.0 Project Files (.SIP extension) to Version 7.
 - Fixed a problem that caused the Site Layout button to be inactive immediately after adding a new Site in a new Project file.
 - The Ctrl+Up and Ctrl+Down keys were not working for moving Sites, Networks and Routes in the lists in the Project Pane.
 - Fixed some errors with pedestrian crossing distance values set in various templates which applied if the "Program" option was not used.
 - Incorrect Leg labels were shown in the Intersection dialog after the Site was rotated.
 - Fixed some incorrect data values in some Templates.
 - Fixed some alignment issues in the Input Comparison report and stopped reporting of Priorities as different if they were listed in a different order but were actually the same.
 - Fixed incorrect description of cycle time as "Network" cycle time for Sites in a Network that are not connected to the Network.
 - Layout view in some dialogs did not update correctly when Quick Input was used to change various input parameter values.
 - Fixed an error in the Priorities dialog that occurred when Turn on Red was allowed for some but not all Movement Classes for the TOR turn movement (e.g. if TOR was allowed for LVs but not for HVs).
 - Fixed naming of CCG phase sequence when Network is cloned.
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Version: 7.0.2.6341

Release Date: 25 May 2016

Enhancements

- All-Way Stop Control Departure Headway parameter added to allow calibration of AWSC capacity values using observed values or values from the HCM 2010 AWSC Capacity Model.
- Network Input Comparison to compare input data for two Networks in a Project introduced.
- Improvements to signal offset calculations where a set of Sites in a Common Control Group are connected to a signalised Site or another Common Control Group.
- Quick Input introduced in Common Control Groups dialog.
- Improvements to Quick Input in Phasing & Timing dialog.
- Improvements to roundabout templates for US HCM Software Setups.
- Some changes to roundabout geometry and Environment Factor parameters for the US HCM Software Setups.
- Environment Factor and Entry / Circulating Flow Adjustment added to Roundabout Analysis report. When the HCM Roundabout Capacity Model is used, parameters in this report that are not used in the capacity calculation are now flagged.
- When US Customary units are used, pedestrian crossing distances are now calculated using "extra distance" of 3 ft or 6 ft rather than 1 m or 2 m.
- Improvements to Site and Network Layout pictures.

- Total Demand and Arrival Flow values in Network and Route outputs are now stated as "Total for all Sites" to clarify that the reported value is summed over all Sites.
- Improvements to popup tooltips in various parts of the user interface.
- Minor improvements to user interface including some input dialog changes.
- Significant improvements and additions to User Guide and Help system.

Bug Fixes

- Opposed turns from a major road at sign control were not treated as opposed in some cases.
- Prevented selection of Continuous movements as opposed movements in the Priorities dialog.
- Incorrect messages about the reason for Lane Underutilisation that occurred in some cases have been fixed.
- Fixed importing from earlier version Project Files for short lane Overflow Lane Number, Roundabout Environment Factor and in cases where optional vehicle movement classes were not included in a Site.
- Resolved some installation problems related to SQL Compact installation and to the digital signature used on the installer.
- Print All did not print Phasing Summary pictures, Graphs or Pedestrian Movement arrows correctly.
- Fixed a problem with the Print All margin settings.
- Print All dialog did not show all options for Networks and Routes.
- Fixed a problem with printing of Network and Route Lane Displays.
- Movement Displays gave an error in some cases with pedestrian crossings across a slip lane.
- Fixed a problem with real number input when the decimal separator character was changed from its default setting.
- Fixed a problem with too many decimal places shown for volume data in Volumes dialog input in US Setups.
- The ribbon did not display correctly when the SIDRA INTERSECTION application window was reduced to a small size.
- "Worst Movement" and "Worst Lane" Level of Service target parameters in Demand and Sensitivity Analysis were interchanged.
- Fixed access to Roundabouts dialog when a Site was right-clicked in the Network tab.
- Units not shown correctly for some Route Output Comparison options.
- "R" indication for Route was missing from Route Output display tabs.
- Fixed some problems with incorrect warning messages related to approach and exit distance mismatches in Network Configuration.
- Diagnostics report did not show an error message if Network processing failed.
- Incorrect error message was shown in the Variable Run report for Sites in a case where Pedestrians were selected for the analysis result option but no pedestrian movements existed.
- Fixed some problems when pasting SIDRA INTERSECTION outputs into MS Word.

Version: 7.0.1.6263

Release Date: 26 April 2016

This is the first release of SIDRA INTERSECTION 7.0. The new features of this version available in the first release are listed below.

Major Features

- Network signal timings:
 - Network Cycle Time Calculations
 - Phase Time calculations for Sites and Common Control Groups in a Network
 - Signal Offset calculations
- Common Control Groups (CCGs) for multiple intersections under one signal controller
- ROUTES for performance reports and displays, and for Signal Offset calculations.
- Network output reports and displays By Routes.
- Route Output Comparison and Network Output Comparison By Routes
- Larger number of User Movement Classes.
- New roundabout capacity model option for HCM 6 (to be introduced when HCM Edition 6 is published)
- API for SIDRA INTERSECTION Version 7
- New UTILITIES for Version 7: VOLUMES, ANNUAL SUMS, NETWORK ANNUAL SUMS
- Model Improvements:
 - Common Control Group timing analysis
 - Network cycle time calculations
 - Signal Offset calculations
 - Lane Blockage Calibration Factors in lane blockage calculations
 - Short Lane Overflow Lane Number to allow for overflow to non-adjacent lanes
 - Separate Exit Distance parameter
 - Phase Frequency method for Phase Times
 - Start Loss (Input) option for Opposing Pedestrians at Signals
 - Capacity reduction due to lane blockage in gap acceptance process
 - Network and Route Level of Service method when Desired Speed varies in the Network or Route
 - Route performance calculations
 - Network performance calculations By Route (for a number of selected Routes)
 - Pedestrian Level of Service Target
 - Platoon Dispersion Model parameters included in user input for model calibration
 - Cost Model parameters updated
- Convert (Batch) function to convert old version Project files
- New Output Reports:
 - Diagnostics
 - Lane Changes
 - Roundabout Analysis
 - Sign Control Analysis
 - Timing Analysis

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- Timing Analysis (CCG)
 - Phasing Summary (CCG)
 - Signal Offsets
 - New Output Displays
 - Route Layout
 - Site Layout refinements
 - Volume Displays with all Movement Classes in table format
 - Time - Distance diagram (signal coordination)
 - Lane Displays for Sites, Networks and Routes
 - A large number of user interface improvements including:
 - Graphic-based Route Configuration dialog
 - View Layout function with lane highlighting in Lane Geometry, Lane Movements and Roundabouts input dialogs.
 - Site, Network and Route Output Comparison functions
 - Improved representation of Continuous movements and lanes in output reports and displays
 - Lane Geometry dialog:
 - Ability to add Approach Lane, Exit lane and Strip Island to Left and Right.
 - Strip Island with Parking style for Site Layout pictures.
 - View Layout function.
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