

(· E)

1 1

USER GUIDE





D

Contents

Introduction	1
License Agreement Acknowledgements Trademarks and Copyrights	6
Getting Started	7
System Requirements	
General Controls	8
Menu Items	8
Urban Street Reliability	10
HCM Chapter 17	10
Operational Data	
Urban Street Reliability Report	15
How To	16
Create a New File	16
Open an Existing File	18
Save a File	22
Close a File	24
Exit the Program	24
Edit the Default Settings	
Load a Base File	
Load Regional Weather	
Generate Scenarios	32
Generate Scenarios View Results of the Analysis	32 37
Generate Scenarios	32 37
Generate Scenarios View Results of the Analysis	32 37

Introduction

License Agreement

HIGHWAY CAPACITY SOFTWARE™ (HCS™) END-USER LICENSE AGREEMENT (EULA)

Effective Date: 10/15/2024

Copyright © 2024 University of Florida. All rights reserved.

This End User License Agreement ("Agreement") is a legal agreement between you ("End User", "you") and the University of Florida Board of Trustees for the benefit of the McTrans Center ("McTrans", "we") regarding the use of the Highway Capacity Software ("Software"). By accessing or using the Software programs within the electronically transmitted package or direct download, you agree to be bound by the terms and conditions of this Agreement.

1. INTEGRATION:

This License Agreement is the complete and exclusive statement of the agreement between End User and McTrans and supersedes any previous End User License Agreements distributed by older versions of the software proposal or prior agreement, oral or written, and any other communications between End User and McTrans relating to the subject matter of this License Agreement. This EULA will supersede the End User License Agreement contained in the HCS Version 5, 6, and 7 modules disseminated as part of the Software. This License Agreement made subsequent to the date hereof and signed by both parties.

2. LICENSE GRANT:

2.1 Subscription-Based License:

McTrans grants you a non-exclusive, non-transferable license to access and use the Software, subject to the terms of your active subscription. The license is valid only for the duration of your subscription and is contingent upon full payment of all applicable fees.

2.2 Access to Software Versions:

Your subscription grants access to versions 5 (selected modules), 6 (selected modules), 7 and 8 series and beyond (2022 onward) of the Software. When a new version of the Software is released, the End User with an active subscription can download and access the latest version at no additional cost for the remainder of their subscription term.

3. TYPES OF SUBSCRIPTIONS:

The type of subscription determines the permitted use of the Software. Once a subscription type is selected, it cannot be changed or exchanged for a different type.

3.1 Office-Based Subscription:

This subscription grants access to the Software for a predetermined number of computers within a physical office. An "office" refers exclusively to a fixed geographical location, typically a single physical address, where an organization conducts its business or operational activities. This location must consist of one or more contiguous rooms or spaces within a single building. Virtual offices or any non-physical locations are excluded from this definition.

The Software may be installed on multiple devices within the office, and access is restricted to end users officially assigned to that licensed office. End Users may also use the Software on portable computers, such as laptops, while on official travel, provided that all (100%) such use is exclusively on behalf of the office for which this Software license was purchased. Additional offices must obtain proper licensing prior to accessing the Software. The Software may only be installed on devices owned or controlled by the licensed office.

This subscription is intended exclusively for commercial use.

Virtualization Restriction:

The Software under an office-based subscription is prohibited from being used in a virtualized environment. All installations of the Software must be conducted on a physical computer, such as a desktop or laptop. Remote access technologies, such as remote desktop, are strictly prohibited under this subscription type.

3.2 Computer-Based Subscription:

This subscription permits the installation and use of the Software on a specified number of individual devices. An "individual device" refers to a single, standalone computing unit, such as a desktop or laptop, intended for use by a single user at a time. It is not shared concurrently with other users and is intended for use by a single user only The Software may only be accessed directly from the device(s) on which it is installed, regardless of whether the device is located in a physical office or used in a virtual office. End users working remotely or in virtual offices must ensure that the device remains dedicated to their use and fully complies with the terms of this subscription.

Virtualization Restriction:

The Software under a computer-based subscription is prohibited from being used in a virtualized environment. All installations must be conducted on a physical computer, such as a desktop, PC, or laptop. Remote access to the Software via any technology, including but not limited to remote desktop, is strictly prohibited under this subscription type.

3.3 Academic Subscription:

The academic subscription is available exclusively to academic institutions and grants access to a specified number of seats (copies) across the entire academic institution. This subscription is intended solely for use in a classroom setting for teaching or a lab for research purposes under the direct supervision of faculty or other authorized personnel. The Software may only be installed on devices owned or controlled by the academic institution.

The End User is required to implement appropriate protection measures to prevent students or any other individuals from copying the Software and removing it from the lab or classroom environment. The responsibility for safeguarding the Software and preventing unauthorized copying or distribution rests entirely with the End User.

Virtualization for Virtual Classrooms:

Under the academic license, the End User may request permission to utilize a virtual environment for the installation and use of the Software. Such virtualization is only permitted with prior written consent from McTrans. If such permission is granted, the virtual environment must adhere to all protections and restrictions outlined in this Agreement, ensuring that the Software is used exclusively for its intended educational purposes and its access is limited to the institution's faculty and actively enrolled students only. Additionally, the number of seats purchased must be sufficient to cover the number of students and faculty accessing the virtual classroom.

4. SUBSCRIPTION TERM:

4.1 Duration:

The subscription term begins on the date of purchase and continues for the period specified at the time of purchase ("Subscription Term"). The license granted under this Agreement is valid only for the duration of the Subscription Term.

4.2 Renewal:

Subscriptions may be renewed upon payment of applicable fees before the end of the Subscription Term. If the subscription is not renewed, access to the Software and all related services, including technical support, will be terminated.

5. TECHNICAL SUPPORT:

5.1 Support Services:

During the active Subscription Term, the End User is entitled to reasonable telephone or email support provided during the normal business hours of McTrans. McTrans reserves the right to determine the extent of the support provided.

5.2 Revisions and Enhancements:

McTrans reserves the right to make substantial revisions and enhancements to the Software and to market such substantially revised versions as separate products. The End User shall not be entitled to receive such separate products without additional charge. Upon the release of any such revised version of the Software, the obligation to provide the above-described technical support services to the End User shall cease unless the End User chooses to pay to license the enhanced version of the Software, regardless of whether the End User has previously requested or received support on the prior version.

6. NETWORK USE:

The End User is strictly prohibited from using the Software on any network. This prohibition includes but is not limited to the use of the Software either directly or indirectly through commands, data, or instructions transmitted to or from a computer that is not licensed or is not part of the licensed internal network. This also includes any use for Internet or web hosting services or by any user who does not hold a valid license for the Software from McTrans.

The Software is not designed for network use, and such use is unsupported. McTrans will not provide technical support for any issues resulting from network incompatibilities or unauthorized network use.

7. RESTRICTIONS ON USE

The End User agrees that they shall not, nor shall they permit any third party to:

- Software Modification: Modify, adapt, translate, or create derivative works based on the Software, in whole or in part, without the express prior written consent of McTrans.
- Reverse Engineering: Reverse engineer, decompile, disassemble, or otherwise attempt to derive the source code of the Software, except to the extent expressly permitted by applicable law.
- Unauthorized Use: Use the Software for any purpose other than as expressly permitted under this Agreement, including unauthorized copying, distribution, or dissemination of the Software.
- Intellectual Property Infringement: Engage in any activity that infringes on the intellectual property rights of McTrans, including any unauthorized copying or distribution of the Software or associated documentation.
- Copying and Distribution: Copy, reproduce, or distribute the Software or associated printed documentation for sale, distribution, or dissemination, except as expressly provided under the terms of this Agreement or with the express prior written consent of McTrans.
- Documentation Use: Reproduce the associated documentation only as necessary for use within the permitted scope of the subscription type as outlined in this Agreement.

Ownership of Software Modifications:

Any modifications, adaptations, translations, derivative works, or any other products or materials resulting from any prohibited actions shall become the exclusive property of McTrans, regardless of whether such actions were performed with or without McTrans' consent.

8. INTELLECTUAL PROPERTY RIGHTS:

The Software and all associated intellectual property rights are owned by McTrans. No rights are granted to the End User other than the limited license expressly set forth in this Agreement.

9. USE OF RESULTS IN RESEARCH AND COMMERCIAL PUBLICATIONS:

McTrans grants the End User legal permission to use the results generated by the Software in academic, research, or commercial publications, provided that such use complies with the terms of this agreement. The End User may publish or present findings derived from the Software as part of their research or commercial work as long as the Software is properly cited and all applicable license terms and restrictions are adhered to. Unauthorized reproduction or distribution of the Software itself remains strictly prohibited.

10. TRANSFER RESTRICTIONS:

The Software is licensed only to the End User, and this License Agreement may not be assigned or transferred to anyone without McTrans' prior written consent. Any authorized transferee of this License Agreement shall be bound by the terms of this License Agreement. The End User may not transfer, assign, rent, lease, sell, or otherwise dispose of the Software except as expressly provided in this License Agreement.

11. LIMITED WARRANTY AND LIMITATIONS OF REMEDIES:

End User acknowledges and agrees that it is the sole responsibility of End User to fully understand the limitations and assumptions underlying the Software and to refrain from using the Software without the assistance of personnel with appropriate expertise. The End User accepts full responsibility for reviewing, interpreting, applying, and utilizing the output of the Software and for ensuring that such output complies with any applicable design codes, standards, or project specifications.

Except as expressly provided herein, the Software is provided "AS IS" without warranty of any kind, whether expressed or implied, including, but not limited to, implied warranties of merchantability and fitness for a particular purpose. McTrans does not warrant that the functions contained in the Software will meet the End User's requirements or that the operation of the Software will be uninterrupted or error-free. The entire risk as to the quality and performance of the product is with the End User.

In no event will McTrans be liable to the End User for any damages, including any lost profits, lost savings, or other incidental or consequential damages arising out of the use of or inability to use the Software, even if McTrans has been advised of the possibility of such damages, or for any claim by any other party. The above warranty gives the End User specific legal rights, and the End User may also have other rights in the United States, which vary from state to state.

Use of the Software where the End User believes or has reason to believe that damage may occur constitutes a violation of any and all warranties. McTrans has no knowledge of the hardware or Software configurations of the End User and assumes no liability for their damage.

12. TERMINATION:

12.1 Termination by McTrans:

McTrans may terminate this Agreement immediately upon notice if you fail to comply with any term or condition of this Agreement. Upon termination, you must cease all use of the Software and destroy all copies of the Software in your possession.

12.2 Termination by End User:

You may terminate this Agreement at any time by discontinuing the use of the Software and notifying McTrans. No refunds will be provided for any remaining portion of the Subscription Term.

13. GOVERNING LAW:

This License Agreement shall be governed by the laws of the State of Florida, U.S.A. Venue for all disputes related to this License Agreement shall be in the United States District Court of the Northern District of Florida, Gainesville Division, or in the Circuit Court of the Eighth Judicial Circuit for Alachua County, Florida.

14. U.S. GOVERNMENT RESTRICTED RIGHTS:

The Software and associated documentation are provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subdivision (c)(1)(ii) of The Rights in Technical Data and Computer Software clause at 52.227-7013 or subparagraphs (c)(1) and (2) of the Commercial Computer Software - Restricted Rights at 48CFR52.227-19. The contractor is McTrans, University of Florida, PO Box 116585, Gainesville, FL 32611-6585.

15. EXPORT REGULATION:

The Software may be subject to U.S. export control laws and regulations, including the U.S. Export Control Reform Act and its associated regulations. End User will not directly or indirectly export, re-export, transfer, or release the Software to, or make the Software accessible from, any country, jurisdiction, or person to which export, re-export, transfer, or release is prohibited by applicable U.S. laws and regulations. End User will comply with all applicable laws and regulations and complete all required undertakings (including obtaining any necessary export license or other governmental approval) prior to exporting, re-exporting, transferring, or releasing, or otherwise making the Software available, outside the U.S. End User shall not export, re-export, transfer, or release the software or software source code to any country which is comprehensively sanctioned by the U.S. Department of the Treasury, Office of Foreign Assets Control (OFAC), as updated from time to time, which currently includes: Cuba, Iran, North Korea, Syria, and the Donetsk, Luhansk, and Crimea regions of Ukraine.

16. SEVERABILITY:

If any portion of this License Agreement shall be declared void or a nullity by a court of competent jurisdiction, then the remainder shall survive and remain in full force. Should you have any questions concerning this license, you may contact the McTrans Center, University of Florida, PO Box 116585, Gainesville, FL 32611-6585, U.S.A., [1] (800) 226-1013.

Acknowledgements

McTrans Center, University of Florida Transportation Institute PO Box 116585, Gainesville FL 32611-6585 Telephone: 1-800-226-1013 Fax: 352-392-6629 Web: mctrans.ce.ufl.edu Email: mctrans@ce.ufl.edu

We acknowledge the Transportation Research Board (TRB), the USDOT's Federal Highway Administration (FHWA), the American Traffic Safety Services Association (ATSSA), the Institute of Transportation Engineers (ITE), and the American Association of State Highway and Transportation Officials (AASHTO) for all text, figures, and references included in HCS and express our sincere appreciation for permission to include this information.

Trademarks and Copyrights

- Microsoft(R), MS-DOS(R), and Windows(TM) are registered trademarks of Microsoft Corporation.
- McTrans(TM), HCS(TM), HSS(TM), TSIS-CORSIM(TM), and TRANSYT-7F(TM) are trademarks of the University of Florida.
- HCS, HCS2025, HCS2024, HCS2023, HCS2022, HCS7, HCS 2010, HCS+, HSS, HSS2025, HSS2024, TRANSYT-7F, and T7F are copyright University of Florida.
- TSIS-CORSIM, TSIS-CORSIM2025, TSIS-CORSIM2024, TSIS-CORSIM2023, TSIS-CORSIM2022, TSIS, CORSIM, NETSIM, FRESIM, TRAFED, TRAFVU, and TShell are copyright University of Florida, with portions copyright ITT Industries, Inc., Systems Division.

Getting Started

System Requirements

HCS is designed for standard Windows installations. For optimal performance, the system should be Windows 10 or newer. While HCS may be compatible with older versions of Windows, any installation and operational issues arising from using these older versions will be the sole responsibility of the end user.

Getting Started

Urban Street Reliability Analysis

Urban Street Reliability analyses evaluate the travel time reliability experienced by motorists on an urban street facility. Travel time reliability reflects the distribution of trip travel time over an extended period of time. The distribution arises from the occurrence of a number of factors that influence travel time (e.g., weather events, incidents, work zone presence, etc.) The distribution describes *how often* these factors occur and *how bad* operations are as a result. The methodology of the application uses the HCM Chapter 17 procedure.

General Controls

Menu Items

New – Creates a new Streets Reliability file (*.xsr) and starts a new analysis project; shortcut is Ctrl+N

Open - Opens an existing Streets Reliability file (*.xsr); shortcut is Ctrl+O

Example Folder – Opens folder with all HCS examples in File Explorer

Save - Saves an opened Streets Reliability file (*.xsr) using the current file name; shortcut is Ctrl+S

Save As... - Saves an opened Streets Reliability file (*.xsr) using a specified file name; shortcut is F12

Close - Closes an existing Streets Reliability file (*.xsr); shortcut is Ctrl+W

Units

USC Units – Changes the units of the current file to U.S. Customary

Metric Units - Changes the units of the current file to Metric

Print - Bring up printer selection and prints a USR report to the printer or specified file type; shortcut is Ctrl+P

Print Preview – Displays preview of current report before printing; shortcut is Ctrl+F2

Report

Formatted Report – Displays formatted report including the most important values; shortcut is F4

Text Report – Displays text report with all input, intermediary, and final results; shortcut is F6

Default Settings – Opens a dialog box for user to input defaults for Analyst, Agency, and Jurisdiction, which will be applied to all new files; also allows selection of USC or SI units, which will be applied to all new files; shortcut if Alt+F

Help

Contents – Provides access to glossary, acknowledgements, copyrights, and information on the Chapter HCM procedure; shortcut is Ctrl+F1

Index – Allows user to search for keywords within the glossary

Search - Allows user to search for keywords within the Contents

User Guide - Opens a comprehensive user guide in PDF format; shortcut is Ctrl+G

HCM Reference Guide – Opens a reference guide for the HCM in PDF format

HCS Updates – Sends the HCS version number anonymously without any personally identifiable information to McTrans to check for a newer version

HCM/HCS Training - Opens the McTrans Training Page in the default web browser to view the latest training opportunities

HCQS Web Page – Opens the TRB Highway Capacity and Quality of Service Committee page in the default web browser

Support

Frequently Asked Questions – Opens the McTrans support page for HCS in the default web browser

HCS Overview - Opens the McTrans HCS Overview page in the default web browser

McTrans Website – Opens the McTrans home page in the default web browser

E-mail McTrans – Composes a new e-mail addressed to McTrans in the default e-mail client with registration number, serial key, module, and version number already populated in the Subject field

About HCS – Opens an about window with software version information, EULA, general acknowledgements, contact information, and other relevant links

Exit – Exits the HCS Streets Reliability module; shortcut is Alt+F4

Urban Streets Reliability

HCM Chapter 17

The Highway Capacity Software (*HCS*) faithfully implements the methodology prescribed in the Highway Capacity Manual (HCM) for analyzing travel time reliability on an urban street. This chapter's methodology relies on methodologies in other HCM chapters to compute the desired performance measures. Specifically, the methodology for aggregating segment performance measures to obtain an estimate of facility performance is described in Chapter 16. The methodology for evaluating the individual segments is described in Chapter 18. The methodologies in Chapters 16 and 18 are applicable to an urban street facility that typically has a length of 1 mi (or 1.6 km in metric) or more in downtown areas and 2 mi (or 3.2 km in metric) or more in other areas.

At its core, the reliability methodology consists of hundreds of repetitions of the urban street facility methodology presented in Chapter 16. In contrast to the Chapter 16 methodology, where the inputs represent average values for a defined analysis period, the reliability caries the demand, capacity, geometry, and traffic control inputs to the facility methodology with each repetition (i.e., scenario).

The reliability methodology can be used to evaluate the following sources of unreliable travel time:

- Demand fluctuations,
- Weather,
- Traffic incidents,
- Work zones,
- Special events,
- Inadequate base capacity, and
- Traffic control devices on urban streets.

Demand fluctuations are represented in the methodology in terms of systematic and random demand variation by hour of day, day of week, and month of year. Fluctuations due to diversion are not addressed directly by the methodology but can be optionally provided by the analyst for work zones and special events through the demand specified in an alternative dataset.

LIMITATIONS OF THE METHODOLOGY

Because the reliability methodology is based on applying the urban streets methodologies multiple times, they inherit the limitations of those methodology, as described in Chapters 16, 18, and 19, respectively. The reliability methodology has additional limitations as described in the following paragraphs.

In general, the urban street reliability methodology can be used to evaluate the performance of most urban street facilities. However, the methodology does not address the events or conditions in the following list:

- Truck pickup and delivery (double parking);
- Signal malfunction;
- Railroad crossing;
- Railroad and emergency vehicle preemption;
- Signal plan transition; and
- Fog, dust storms, smoke, high winds, or sun glare.

Lane or shoulder blockage due to truck pickup-and-delivery activities in downtown urban areas can be considered incident-like in terms of the randomness of their occurrence and the temporal extent of the event. The dwell time for these activities can range from 10 to 20 min.

A signal malfunction occurs when one or more elements of the signal system are not operating in the intended manner. These elements include vehicles detectors, signal heads, and controller hardware. A failure of one or more of these elements typically results in poor facility operation.

A railroad crossing the facility at a midsegment location effectively blocks traffic flow while the train is present. Train crossing time can be lengthy (i.e., typically 5 to 10 min) and can result in considerable congestion extending for one or more subsequent analysis periods.

Railroad preemption occurs when a train crosses a cross-street leg of a signalized intersection. The signal operation is disrupted for several cycles after train clearance.

When a new timing plan is invoked, the controller goes through a transition from the previous plan to the new plan. The transition period can last several cycles, during which traffic progression is significantly disrupted.

Some weather conditions that restrict driver visibility or degrade vehicle stability are not addressed by the methodology. These conditions include fog, dust storms, smoke, and high winds.

Operational Data

Base Dataset

On the Base Dataset page, the user is required to load a base file to run an Urban Streets Reliability analysis. There are two options when using a base file: *Select Base File* and *Create Base File*. The program requires the HCS Streets module for both these options. The *Select Base File* button opens a dialog that allows users to open an existing HCS Streets (*.xus) files. The *Create Base File* button launches the Streets module where a user can create a new HCS Streets dataset. If HCS is already installed on the computer, then the Streets module should open when this button is clicked. If HCS is not installed, an error will popup and HCS will need to be installed on the computer to continue with the Urban Streets Reliability analysis.

The Base Dataset page shows a summary of the data from the Streets file. When a Streets file is loaded, the required information from the dataset is extracted for reliability analysis. Two sections appear when the Streets file is loaded: *Street intersections and segments graph* and *Street general information*. The number of intersections and segments, along with the distance between the intersections and the posted speed limit are displayed graphically in the first section. The second section lists out the Street Name, Analysis Name, Analysis Year, Analysis Date, Start Time, Period Duration, number of periods, File Name, and any comments taken directly from the Streets file.

Analysis

The Analysis page is used to specify the duration of the reliability reporting period. There are three main sections in the analysis page: *Reporting Period*, *Study Period*, and *Analysis Summary*.

The reliability reporting period represents the specific days over which the travel time distribution is to be computed, for example, all nonholiday weekdays in a year. The period is specified by start and end dates as well as by the days of week being considered. The start and end dates can be selected by clicking the calendar in the respective textbox and selecting the date on the calendar or by typing the date in the format MM/DD/YYYY. The days of week to be considered in a reliability analysis can be selected by clicking the checkboxes provided for each day of the week.

If these values are not changed by the user, the following defaults will be used:

- Start Date: 1/1/2011
- End Date: 1/1/2012
- Days of Week: Mon, Tue, Wed, Thu, Fri (all weekdays)

The number of days should be reflected under each month based on the information input for reporting period. The reliability reporting period is used with the study period to describe the temporal representation of the performance measure fully (e.g., average travel time on nonholiday weekdays from 4:00 to 6:00 p.m. for the current year).

The study period is the time interval (within a day) that is represented by the performance evalutation. It consists of one or more consecutive analysis periods. The default analysis Start Time is taken from the base dataset and can be edited if needed. The End Time is calculated based on the Start Time, number of periods, and duration of Period from the base dataset. End Time and Duration cannot be edited in the Streets Reliability program, but can instead be changed in the base dataset through Streets.

The analysis summary includes: *Total number of analysis days*, *Number of scenarios per day*, *Number of standard scenarios*, and *Total Number of scenarios*. The *Number of standard scenarios* is the *Total number of analysis days* multiplied by the *Number of scenarios per day*. The *Total Number of scenarios* is the number of standard scenarios and alternate scenarios (if any).

Weather

A main source of variability that leads to travel time unreliability is weather. Weather events can affect capacity and possibly demand. The Reliability methodology provides default values for use by location.

On the weather page, a drop-down list is located at the top left of the screen where a city with available weather data can be chosen. A city can also be typed into the search bar, which will then match and select the city from the drop down list.

Once a city is selected, *Load Regional Weather* needs to be selected for the weather data to be reflected in the page. This button automatically imports historical weather data for the selected city from a local database file that is distributed with the program. The fields in the table can edited if necessary. If a mistake is made and the user wants to revert back to the previous values, then the *Reset to Regional Default* can be selected to discard recent changes and restore default values for the selected city.

Under the Weather Data table are also weather factors affecting demand. These include: *Pavement runoff duration for snow event (h), Demand change factor for dry weather, Demand change factor for rain event,* and *Demand change factor for snow event.* The defaults for these are 0.5 hours, 1.0, 1.0, and 0.8, respectively. The user has the option of changing these values if necessary. The duration of pavement runoff for a snow event is required. An appropriate local value should be established for the subject facility if possible.

Demand

Another main source of variability that leads to travel time unreliability is the temporal variability in traffic demand both regular variations by hour of the day, day of the week, and month or season of the year and random variations between hours and days. The Demand page is used to display user inputs related to demand and to specify demand factors.

One of the required inputs is the *Urban Street Funtional Class*. There are three urban street functional classes considered: *Expressway*, *Principal Arterial*, and *Minor Arterial*. The default in the program is *Expressway*. Once selected, the defaults for *Hours of the Day Ratios*, *Days of the Week Ratios*, and *Months of the Years Ratios* are displayed. Similar to the table on the Weather page, the fields in these tables can be edited if necessary. The *Base Dataset Traffic Count Date* is automatically set to the date found in the Streets base file, but can also be changed if necessary. Similar to the Analysis page, the date can be selected by clicking the calendar in the textbox and selecting the date on the calendar or by typing the date in the format MM/DD/YYYY. Depending on the date selected, the *Base Demand Ratio* is calculated using *Hours of the Day Ratios*, *Days of the Week Ratios*, and *Months of the Year Ratios*.

Incident

Another main source of variability that leads to travel time unreliability are incidents that block travel lanes or otherwise affect traffic operations and thus capacity. The Incident page is used to specify user inputs related to incidents, their frequencies, reponse time, clearance time, and distributions. There are three tabs within the Incident page: *General, Clearance Time*, and *Distribution*.

The *General* tab displays the crash frequency adjustment factors for different weather types, the incident response time in minutes for different weather types, the incident detection time in minutes, shoulder presence, and the average crashes per year for both segments and intersections. All these fields are pre-populated with the default values provided in Chapter 17. The shoulder presence checkbox is used to switch the different input tables for incident distirbutions. If the checkbox is checked, the input table under the Distribution tab will include *Shoulder* in the *Incident Location - Affected* column. If the checkbox is unchecked, the input table will only display *One Lane* and 2+ *Lanes* under the *Incident Location - Affected* column. Rows form under "Average Crashes per Year" depending on the number of Segments and the number of Intersections coded in the Streets Base File loaded for analysis. Segments will display before Intersections.

The *Clearance Time* tab displays a table with the incident clearance time in minutes for different incident types, which are based on Street Location, Event Type, Lane Location, Severity, and Weather Type. *Street Location* includes *Segment* and *Intersection. Event Type* includes *Crash* or *Non-Crash. Lane Location* includes *One Lane*, *2*+ *Lanes*, or *Shoulder. Severity* types include fatality/injury (*FI*) and property-damage-only (*PDO*) if the Event Type is Crash, and *Breakdown* and *Other* if the Event Type is Non-crash. Weather Types include *Dry*, *Rainfall, Wet Pavement*, and *Snow or Ice*.

The *Distribution* tab displays a table with the incident proportions based on *Street Location*, *Incident Type*, *Incident Location*, and *Incident Severity*.

Scenarios

The Scenarios page displays two sections: Scenario Generation Settings and Progress Status.

The checkboxes in the *Scenario Generation Settings* indicate whether or not the user wants to include the corresponding variability in the reliability analysis. The three variables include: *Weather, Demand*, and *Incident*. If a checkbox is unchecked, then the variable is not considered in the analysis. For example, if the *Incident* checkbox is unchecked, then incident scenarios will not be generated. Unique seed numbers are separately established for weather events, demand variation, and incidents. A seed is used so that the sequence of random events can be reproduced. For a given set of three seed numbers, a unique combination of weather events, demand levels, and incidents is estimated for each analysis period in the reliability reporting period. The user can also specify to randomize demand volume for every analysis period by checking the checkbox. This checkbox is automatically checked for an Urban Streets Reliability File (*.xsr).

Progress Status displays the *Replication* number currently generating, the *Scenarios Generated* out of the total number of scenarios, and the time elapsed in seconds for generating scenarios. If the user chooses to stop generating scenarios, a Cancel button is located below *Time Elapsed*.

Once all scenarios are generated, "Scenario Generation Completed." will display after *Scenarios Generated*. The user may select Save or Close from the menu if saving the scenarios generated is needed. If the user selects Save, a pop-up will appear asking if the user wants to save the scenarios generated. If the user selects Close, a pop-up will appear asking if the user wants to save the reliability analysis. Then, a second pop-up will appear asking if the user wants to save the scenarios generated, then each of the Streets files will be saved to a folder, based on the replication (R1, R2, R3, etc.), where the Streets Reliability (*.xsr) file is saved.

Events

Once all scenarios are generated, the Events page will display event predictions. There are four tabs for the Event Predictions: *Summary, Weather, Demand,* and *Incident.* Tabs will be populated depending on which types of

scenarios were included under the *Scenario Generation Settings*. If the number of replications specified by the user was greater than 1, the drop-down list next to *Replication* can be used to switch between replications.

Under *Summary*, the user can specify how many scenarios per page to display by selecting a number from the drop-down list in the upper left hand corner of the section. Since all scenarios cannot be displayed on the page, navigation buttons (<< First, < Previous, Next >, and Last >>) can be found at the bottom of the screen. The current page out of the total number of pages is also displayed at the bottom of the screen. On each Summary page, a table will be displayed with the Analysis Period, Weather Event, Precipitation Rate, Demand Factor, Incident Occurrence, and Incident Count.

Under *Weather*, the user can specify how many Weather details per page are displayed by selecting a number from the drop-down list in the upper left hand corner of the section. Since all scenarios cannot be displayed on the page, navigation buttons (<< First, < Previous, Next >, and Last >>) can be found at the bottom of the screen. The current page out of the total number of pages is also displayed at the bottom of the screen. On each Weather page, a table will be displayed with the Date, Precipitation RN, Precipitation (Yes/No), Temperature RN, Temperature (F), Snow/Rain, Precipitation Rate RN, Precipitation Rate (in./h), Total Precipitation RN, Total Precipitation (in.), Precipitation Start RN, Precipitation Start Time, Precipitation Duration (h), Time Wet After Precipitation (h), Day/Night?, Total Event Duration (h), End of Precipitation, and Wet Pavement End. A horizontal scroll bar is placed under the table to view all columns.

Under *Demand*, the user can specify how many Demand details per page are displayed by selecting a number from the drop-down list in the upper left hand corner of the section. Since all scenarios cannot be displayed on the page, navigation buttons (<< First, < Previous, Next >, and Last >>) can be found at the bottom of the screen. The current page out of the total number of pages is also displayed at the bottom of the screen. On each Demand page, a table will be displayed with the Analysis Period, Weather, Weather Factor, Hour Factor, Day Factor, Month Factor, Total Factor, and Total/Base. A horizontal sroll bar is placed under the table to view all columns.

Under *Incident*, there are two other tabs: *Crash Frequency* and *Other*. For each of the segments and intersections coded in the base dataset, the *Crash Frequency* tab displays the Observed Average Crash Frequency, Number of Years, Hours of Dry Weather, Hours of Rainfall, Hours of Wet Pavement, Hours of Snowfall, Hours of Snow Pavement, Crash Frequency Adjustment Factor for Rainfall, Crash Frequency Adjustment Factor for Snowfall, Crash Frequency Adjustment Factor for Snow Pavement, Crash Frequency for Dry Weather, Crash Frequency for Rainfall, Crash Frequency Adjustment Factor for Snow Face Pavement, Crash Frequency for Dry Weather, Crash Frequency for Rainfall, Crash Frequency for Wet Pavement, Crash Frequency for Dry Weather, Crash Frequency for Rainfall, Crash Frequency for Wet Pavement, Crash Frequency for Snowfall, and Crash Frequency for Snow Pavement.

The *Other* tab displays a Parameters section in which a user can set a date, a time, and a segment or intersection to gather information on incidents. Similar to the Analysis page and Demand page, the date can be selected by clicking the calendar in the textbox and selecting the date on the calendar or by typing the date in the format MM/DD/YYYY. A drop-down list with different hours of the day can be used to select a time and a drop-down list with the different segments and intersections can be used to select which segment or intersection is needed for information. Below these drop-downs is a Query button, which the user can click to check for incidents starting at the selected query hour. Once clicked, tables will appear for three subtabs: *Determination, Duration,* and *Location*.

The Determination tab displays Proportion, Frequency per Hour, exp (-fi x pi), Random Number, and Incident? for different types of incidents.

The *Duration* tab displays values for the following variables: Location, Incident type, Number of lanes involved, Incident severity, Weather, Incident detection time (min), Incident response time, dry weather (min), Incident clearance time (min), Average incident duration (min), Standard deviation of incident duration (min), Average incident duration of incident duration (h), Random number, Gamma function alpha parameter (mean²/variance), Gamma function beta parameter (mean/variance), Duration (h), Rounded duration (nearest 15 min) (h), Incident start time, and Incident end time.

The *Location* tab displays values for the following variables: Incident number; Incident type, location and severity; Random number; Location index; Location; and Directional probabilities for EB, WB, NB, and SB.

Summary

Once all scenarios are generated, the *Summary* page will display Scenario Details. If the number of replications specified by the user was greater than 1, the drop-down list next to *Replication* can be used to switch between replications. In the Scenario Details, the following are displayed for each scenario: *Scenario ID*, Analysis *Period*, *Travel Time FWD* (*s*), *Travel Time REV* (*s*), *Travel Speed FWD* (*mi/h*), *Travel Speed REV* (*mi/h*), and *Facility Delay* (*veh-h*). Hovering over each *Scenario ID* will show the path for the file location.

Urban Streets Reliability Report

The Report page displays the results of the analysis in the form of tables and graphs. There are two reports available to the user: the formatted report and the text report. The formatted report is initially displayed, but the user can switch to the text report by clicking the *Switch to Text Report* button located at the top of the screen. Similarly, if the user has the text report displayed, the *Switch to Formatted Report* button located at the top of screen can be used to display the formatted report instead.

The formatted report provides an overview of the results in a table. There are four sections in the table: Base Dataset Analysis, Realiability Input Summary, Reliability Performance Measure Results, and Travel Time results for each replication. Base Dataset Analysis provides general information that can be found in the base dataset. Reliability Input Summary provides general information on the reliability analysis and the random seed summary. The random seed numbers displayed on this report are for the first replication. Random seed numbers for each replication can be found in the text report. Reliability Performance Measure Results provides information on the following performance measures for each major street direction: Vehicle miles traveled (veh-m), Number of Scenarios, Base free-flow travel time (s), Mean TTI, 80th percentile TTI, 95th percentile TTI (PTI), Reliability rating (%), and Total delay (veh-h). The last section of the table includes information on travel time for each replication. The average travel time and the 95th percentile travel time is provided in the formatted report, but more information can be found in the text report. Below the table are two graphs displaying the Travel Time Frequency Distribution for both the Major Street Forward and Reverse directions.

The text report provides more detailed results. The results for the major street forward direction are displayed first and then the results for the other major street reverse direction is displayed. The following performance measures are displayed for each major street direction: Vehicle Miles Traveled (veh-mi), Base Free-Flow Speed (mi/h), Base Free-Flow Travel Time (s), Reliability Rating, and Number of Scenarios. Following this is information for each replication. Each replication displays the Random Number Seeds for Weather, Demand, and Incident. Then the Average, Standard Devaition, Skewness, Median, 5th Percentile, 10th Percentile, 80th Percentile, 85th Percentile, and 95th Percentile are displayed for Travel Time (s), Travel Speed (mi/h), Stop Rate (stops/veh), Running Time (s), Through Delay (s/veh), and Total Delay (veh-hr).

How To

Create a New File

- # HCS Streets Reliability X Start Help New File... Topics Open File... HCS Updates Example Folder... **HCS** Overview Recent McTrans Website HCM/HCS Training STREETS RELIABILITY E-mail McTrans About HCS MCS2025 Copyright © 2024 University of Florida. All Rights Reserved. HCS[™] Streets Reliability Version 2025
- 1. From the Start screen, there are three options for creating a new file:

Note: A new file can be created if an existing file is already open; you do not need to start from the Start screen.

a. Selecting *File > New* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "New"

HCS Streets Reliability			- 🗆 X
New	Ctrl+N		
Open Example Folder	Ctrl+O	150	Í
Save	Ctrl+S		Help
Save As	F12		Topics
Close	Ctrl+W		HCS Updates
Units	•		HCS Overview
Print Print Preview	Ctrl+P Ctrl+F2		McTrans Website
Report	•		HCM/HCS Training
Default Settings	Alt+F	STREETS RELIABILITY	E-mail McTrans
Help	•		About HCS
Exit	Alt+F4		All A
		A HCS2025	
Copyright © 2024 Unive	rsity of Florida.	All Rights Reserved.	HCS [™] Streets Reliability Version 2025

b. Selecting "New File..." from the Start screen; this can be found below in the red box

🚔 HCS Streets Reliability	- O X
Start New File Open File Example Folder Recent STREETS RELIABILITY	Help Topics HCS Updates HCS Overview McTrans Website HCM/HCS Training E-mail McTrans About HCS
HCS2025	HCS™ Streets Reliability Version 2025
Copyright © 2024 University of Florida. All Rights Reserved.	HCS™ Streets Relia

c. Using keyboard shortcut "Ctrl+N"

2. Once a new file is created, you will be brought to the Base page

StreetsReliability1.xsr* - HCS Streets Reliability	- 0	×
E START BASE ANALYSIS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY	REPORT	
Image: Start Dast Analisis Weather Demand Incident Scenarios Events Sommart I. Please select a Base Dataset. Select Base File Create Base File Geographic Back		() Next
Copyright © 2024 University of Florida. All Rights Reserved. HCS™ Streets Relia	bility Version 202	5 (USC)

Open an Existing File

1. From the Start screen, there are six options for opening an existing file:

HCS Streets Reliability	– 🗆 X
Start	11-la
New File	Help
Open File	Topics
Example Folder	HCS Updates
Recent	HCS Overview
	McTrans Website
C D	HCM/HCS Training
STREETS RELIABILITY	E-mail McTrans
	About HCS
HCS 2025	
	S
Copyright © 2024 University of Florida. All Rights Reserved.	HCS [™] Streets Reliability Version 2025

Note: A file can be opened even if another file is currently open; you do not need to start from the Start screen.

a. Selecting *File > Open* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Open"

🚔 HCS Streets Reliabilit	у		- 0	×
New	Ctrl+N			
Open	Ctrl+O			L.
Example Folder				
Save	Ctrl+S		Help	
Save As	F12		Topics	
Close	Ctrl+W		HCS Updates	
Units	•		HCS Overview	
Print	Ctrl+P			
Print Preview	Ctrl+F2		McTrans Website	
Report	•	STREETS RELIABILITY	HCM/HCS Training	
Default Settings	Alt+F	STREETS RELIABILITY	E-mail McTrans	
Help	•		About HCS	2
Exit	Alt+F4			1
		MCS2025	and the	
Copyright © 2024 Univ	versity of Florida.	All Rights Reserved.	HCS [™] Streets Reliability Version 2	2025

b. Selecting "Open File..." from the Start screen; this can be found below in the red box

HCS Streets Reliability	- 0 ×
Start New File Dpen File Example Folder Recent STREETS RELIABILITY	Help Topics HCS Updates HCS Overview McTrans Website HCM/HCS Training E-mail McTrans About HCS
HCS 2025	Sale La
Copyright © 2024 University of Florida. All Rights Reserved.	HCS™ Streets Reliability Version 2025

c. Using the keyboard shortcut "Ctrl+O"

d. Selecting a file under the Recent files list from the Start screen; this can be found below in the red box

	- 0 X
Start Mex.File. Open.File. TexetsBeliability1xx StreetsBeliability1xx StreetsBeliability2xx	Help Jopis HCS Updates HCS Overview McTrans Website HCMMFCS Training E-mail McTrans About HCS
	S.C.
Copyright © 2024 University of Rorda. All Rights Reserved	HC3** Streets Reliability Wasion 2025

e. Selecting *File > Example Folder* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Example Folder". Opening the example folder will open the path of the HCS example files in File Explorer. The desired example file can be double-clicked or right-clicked and selecting 'Open', which will open the example file in the Streets Reliability program.

HCS Streets Reliability			- 🗆 X
New	Ctrl+N		
Open	Ctrl+O		
Example Folder			
Save	Ctrl+S		Help
Save As	F12		Topics
Close	Ctrl+W		HCS Updates
Units	+		HCS Overview
Print	Ctrl+P		
Print Preview	Ctrl+F2		McTrans Website
Report	÷.	C	HCM/HCS Training
Default Settings	Alt+F	STREETS RELIABILITY	E-mail McTrans
Help	•		About HCS
Exit	Alt+F4		
		MCS2025	and the second
pyright © 2024 Unive	rsity of Florida. A	Rights Reserved.	HCS™ Streets Reliability Version 202

f. Selecting "Example Folder..." from the Start screen; this can be found below in the red box. Opening the example folder will open the path of the HCS example files in File Explorer. The desired example file can be double-clicked or right-clicked and selecting 'Open', which will open the example file in the Streets Reliability program.

HCS Streets Reliability	- 🗆 X
=	
Start	
New File	Help
Open File	Topics
Example Folder	HCS Updates
Recent	HCS Overview
	McTrans Website
	HCM/HCS Training
STREETS RELIABILITY	E-mail McTrans
	About HCS
	1 10
MCS2025	10/2
Copyright © 2024 University of Florida. All Rights Reserved.	HCS™ Streets Reliability Version 2025

2. Once an existing file is opened, you will be brought to the Base page

	START BASE ANALYSIS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUM	IMARY REPORT	
		Select Base File Create Base File Street Intersections and segments graph	
¢		1 1800 ft 35 mph 2 Street general information Street Analyst Analysis Vear Analysis Date	→ Next
Bac		Start Time 7:00 Periodo Daration 15 Minutes Periods 1 File Name StreettBase1.xus Comment	Next

Save a File

- 1. There are five options for saving an open file:
 - a. Selecting *File > Save* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Save"

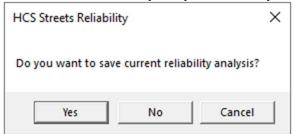
	ANALYSIS	WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY REPORT	0 1
New	Ctrl+N		
Open Example Folder	Ctrl+O	Select Base File Create Base File	
Save	Ctrl+S		
Save As	F12	Street intersections and segments graph	
Close	Ctrl+W		
Units	•		
Print	Ctrl+P		
Print Preview	Ctrl+F2	1 - 1800 ft - 2	
Report	Alt+F		
Default Settings Help	Alt+F		
Exit	Alt+F4		
Back		Start Time 7:00 Period Deartion 15 Minutes Periods 1 File Name Streets1-Motorized/Whicle.sus Comment Chapter 30: Example Problem 1	Ň
Copyright © 2024 Univer	rsity of Florida. All	Rights Reserved	HCS [™] Streets Reliability Version 2025 (U

b. Selecting *File > Save As...* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Save As..."

	SE ANALYS	SIS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY REPORT	
New	Ctrl+N		
Open	Ctrl+O		
Example Folder		Select Base File Create Base File	
Save	Ctrl+S		
Save As	F12	Street intersections and segments graph	
Close	Ctrl+W		
Units	,		
Print	Ctrl+P		
Print Preview	Ctrl+F2	1 - 1800 ft - 2	
Report	,	U Simpi	
Default Settings	Alt+F		
Help	•		
Exit	Alt+F4		
		- Street general information	
		Street Analyst	\sim
(\leftarrow)		Analysis Year 2024 Analysis Date 9/17/2024 12:00:00 AM	(\rightarrow)
Back		Start Time 7:00 Period Duration 15 Minutes	→ Next
		Periods 1 File Name Streets1-MotorizedVehicle.xus	
		Comment Chapter 30: Example Problem 1	
Copyright © 2024 Univ	versity of Florida.	HCS ^{we} Streets Relial HCS ^{we} Streets Relial	bility Version 2025 (USC)

- c. Using the keyboard shortcut "Ctrl+S" for Save
- d. Using the keyboard shortcut "F12" for Save As

e. Exiting the program or closing the file without saving changes beforehand; this will prompt you to save the current reliability analysis before anything is closed



- i. Selecting "Yes" will save the file if it is an existing file. If the file has not been previously saved, the Save As dialog box will pop up allowing you to change the file name and save it.
- ii. Selecting "No" will exit the program or close the file without saving the file
- iii. Selecting "Cancel" will prevent the file from closing
- iv. If you have generated scenarios and then decide to exit the program or close the file, you will receive two prompts: the aforementioned prompt and a Save Scenarios prompt

Save Scenarios		×
Do you want to save ger	nerated Reliability	y Scenarios?
	Yes	No

- 1. Selecting "Yes" will save all the scenario files generated and create folders based on the number of replications
- Selecting "No" will exit the program or close the file without saving the scenario files generated

Note: Using Save with an existing file will save a file without prompting you to specify a file name. Using Save with a new file will bring up the Save As dialog box for you to specify a file name for saving. Using Save As will always bring up the Save As dialog box for you to specify a file name for saving.

Close a File

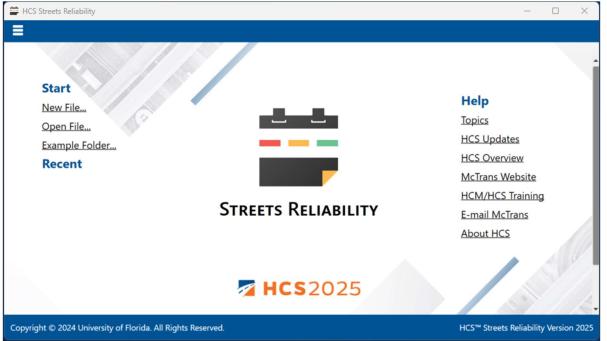
- 1. There are three options for closing an open file:
 - a. Selecting *File* > *Close* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Close"

StreetsReliability1.xsr		isairy Is weather demand incident scenarios events summary report	- 0	×
		IS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY REPORT		
New Open Example Folder	Ctrl+N Ctrl+O	Select Base File Create Base File		
Save	Ctrl+S			
Save As	F12	Street intersections and segments graph		
Close	Ctrl+W			
Units	•			
Print	Ctrl+P			
Print Preview	Ctrl+F2	1 100 ft 2 35 mph 2		
Report	•			
Default Settings	Alt+F			
Help	•			
Exit	Alt+F4			
(C) Back		Analysis Veer 2024 Analysis Date 9/17/2024 12:000 AM Surt Time 7:00 Period Carbon 15 Minutes Periods 1 File Name Streets1-Motorbred/ehicle.sus Comment Chapter 30: Example Problem 1		(T) Net
Copyright © 2024 Un	iversity of Florida.	All Rights Reserved HCS® Storets Reliability	y Version 202	5 (US

- b. Using the keyboard shortcut "Ctrl+W"
- c. Exiting the program itself; please see How To: Exit the Program

Exit the Program

1. From the Start screen, there are three options for exiting the program:



Note: The program can be exited even if a file is still open; you do not need to start from the Start screen.

a. Selecting *File* > *Exit* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Exit"

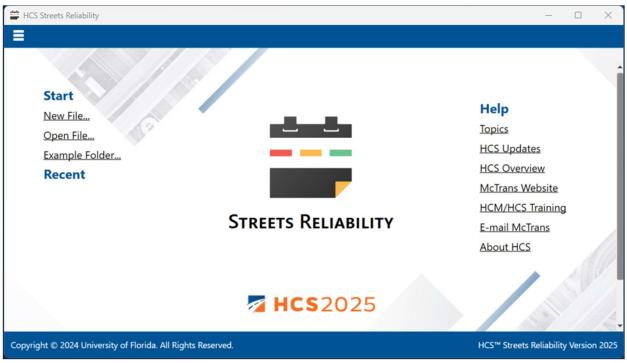
HCS Streets Reliability			_		×
New	Ctrl+N				
Open Example Folder	Ctrl+O	1 Store State			N
Save	Ctrl+S		Help		
Save As	F12		Topics		
Close	Ctrl+W		HCS Updates		
Units	•		HCS Overview		
Print	Ctrl+P		McTrans Website		
Print Preview	Ctrl+F2				
Report	÷	STREETS RELIABILITY	HCM/HCS Training		
Default Settings	Alt+F	STREETS RELIABILITY	E-mail McTrans		
Help	•		About HCS		62
Exit	Alt+F4				11
		MCS2025			
pyright © 2024 Unive	rsity of Florida.	Il Rights Reserved.	HCS [™] Streets Reliability	Version	2025

- b. Using the keyboard shortcut "Alt+F4"
- c. Selecting "X" in the top right-hand corner of the screen; this can be found below in the red box

Help Topics HCS Updates HCS Overview McTrans Website HCM/HCS Training E-mail McTrans About HCS	·
ICCM Strate Balishillto Ma	2025
	Topics HCS Updates HCS Overview McTrans Website HCM/HCS Training E-mail McTrans

Edit the Default Settings

1. From the Start screen, there are two options for editing the Default Settings:



Note: The Default Settings can be changed even if an existing file is already open; you do not need to start from the Start screen.

a. Selecting *File > Default Settings* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Default Settings"

HCS Streets Reliability			- 0 X
New	Ctrl+N		
Open Example Folder	Ctrl+O		
Save	Ctrl+S		Help
Save As	F12		Topics
Close	Ctrl+W		HCS Updates
Units	•		HCS Overview
Print	Ctrl+P		McTrans Website
Print Preview	Ctrl+F2		
Report	+	STREETS RELIABILITY	HCM/HCS Training
Default Settings	Alt+F	STREETS RELIABILITY	E-mail McTrans
Help	•		About HCS
Exit	Alt+F4		SUP.
		MCS2025	
opyright © 2024 Unive	ersity of Florida. A	Rights Reserved.	HCS [™] Streets Reliability Version 2025

b. Using the keyboard shortcut "Alt+F"

2. Opening the Default Settings will cause a Default Settings window to pop up:

🚔 Default Settings	×
Analyst	
Agency	
Jurisdiction	
New File Defaul	t Units
• U	SC O Metric
ОК	Cancel

- 3. You can Specify Analyst, Agency, and Jurisdiction by clicking the corresponding text boxes and typing the desired text.
- 4. Under 'Units', you are given the option of running the analysis in either U.S. Customary (USC) or SI (Metric) units.
- 5. Clicking "OK" will save the changes made and close the Default Settings window; clicking "Cancel" will close the Default Settings window without saving any changes.
- 6. When a new file is created, the Analyst, Agency, and Jurisdiction fields will automatically be populated with the text specified in the Default Settings.
- 7. When starting a new file, the input and results will display according to the units specified in the Default Settings.

Load a Base File

1. On the Base page, there are two options to load a base file: 'Select Base File' and 'Create Base File'



a. 'Select Base File' will bring up an Open dialog box to allow selection of an existing Streets (*.xus) file

StreetsReliability1.xsr*-H	S Streets Reliability ANALYSIS WEATHER DEMAND INC					- 0 ×
= START BASE	ANALYSIS WEATHER DEMAND INC	IDENT SCENARIO	S EVENTS S	SUMMARY REPORT		
				1. Please se	elect a Base Dataset.	
				Solart Bara Fila	Create Base File	
				Select base file	Create base File	
\sim						\sim
e Back						→ Next
Back						Next
	and a second					
Copyright © 2024 Universit	y of Florida. All Rights Reserved.					HCS [~] Streets Reliability Version 2025 (USC)
StreetsReliability1.xsr* - Hi	25 Streets Reliability			×	2	HC5 Streets Reliability Version 2025 (USC) — O X
StreetsReliability1.xsr * - Hi	S Streets Reñability					
 StreetsReliability1.xsr⁺ - Hi Open ← → ✓ ↑ 	S Streets Reliability > This PC > OS (C) > Program Files (x06) > McTrat			C Search Example	rt a Base Dataset.	
 StreetsRefability1.xtr* - H Open ← → ∨ ↑ Organize * New folds 	S Streets Reliability This PC > OS (C) > Program Files (x86) > McRar r	ıs → HCS2024 → Example	~ 0	C Search Example A ≣ • □ 0	t a Base Dataset.	
StreetsReliability1.xsr * - H Open ← → ~ ↑ Organize • New folde HCS ★	S Streets Reliability This PC > OS (C) > Program Files (x86) > McRam Rame	ns > HCS2024 > Example	у С	C Search Example	rt a Base Dataset.	
StreetsRefiability1.ser * - HI Deen ← → ∨ ↑ Organize * New folde HCS # HSS #	S Streets Relability	Date modified 9/9/2024 1:43 PM	V C	C Search Example A ≣ • □ 0	t a Base Dataset.	
StreetsReliability1.xxr*-H Den € → ∨ ↑ Organize • New fold HCS # HSS # TSS-CORSIM # HCM #	S Streets Relability > This PC > OS IC) > Program Files (dbl) > McSar * Name * Alternative Intersections * Alternative Intersections * Streets Relability	ns > HCS2024 > Example Date modified 9/9/2024 1:43 PM 9/9/2024 1:43 PM 9/9/2024 1:43 PM	V C	C Search Example	t a Base Dataset.	
 StreetsRefability1.xxr⁺ - H ○ Open ← → ∨ ↑ Organize * New fold HCS # HSS # TSS - CORSIM # 	5 Streets Reliability Storets Reliability Thane Rame Rame Rame	IS → HCS2024 → Example Date modified 9/9/2024 1:43 PM 9/9/2024 1:43 PM 9/9/2024 1:43 PM 10/17/2023 7:05 AM	Type File folder File folder File folder XUS File	3 Search Example	t a Base Dataset.	
BreetsBriability1xxr*-H Copen ← → ∨ ↑ Organize - New fold H KS → KS → SCORSM # → HSM	S Sneeth Reliability Trans Tame Tame Tame Tame Tame Tame Tame Tame	B → HCS2024 → Example Date modified 9/9/2024 1-43 PM 9/9/2024 1-43 PM 10/17/2023 7-05 AM 10/17/2023 7-05 AM	V C Type File folder File folder File folder XUS File XUS File	3 Search Example	t a Base Dataset.	
	S Streets Reliability S Tarrets Reliability Tarret Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Mann	s → HCS2024 → Example Date modified 9/9/2024 143 PM 9/9/2024 143 PM 9/9/2024 143 PM 10/17/2023 705 AM 10/17/2023 705 AM 10/17/2023 705 AM	V C Type File folder File folder XUS File XUS File XUS File	2 Search (sample	t a Base Dataset.	
	S Streets Reliability S Streets Reliability Tarse Ta	b HCS2024 > Example Date modified 99/2024 143 PM 99/2024 143 PM 99/2024 143 PM 10/17/2023 7:05 AM 10/17/2023 7:07 AM	V C Type File folder File folder File folder SUS File XUS File XUS File XUS File XUS File	3 Search faample	t a Base Dataset.	
Operationality (ser + - H) Operationality (ser + - H) Operative New Vold M CS # M SS COSM # M SS MARK # M SS MARK # M SS COSM # M SS MARK #	3 Streets Reliability 3 Streets Reliability Thane Manue Manue	s → HCS2024 → Example Date modified 9/9/2024 1:43 PM 9/9/2024 1:43 PM 9/9/2024 1:43 PM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM	Type File folder File folder XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Search Loample	t a Base Dataset.	
Stretetilizability Lue *- III Copin Copinite * New Iolds INSS INSS <th>3 Streets Reliability 3 Streets Reliability Thane Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne M</th> <th>Is > HCS2024 > Example Date modified 9/9/2024 143 PM 9/9/2024 143 PM 9/9/2024 143 PM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 767 AM 10/17/2023 767 AM</th> <th>Type File folder File folder XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File</th> <th>3 Search Lample A = - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <</th> <th>t a Base Dataset.</th> <th></th>	3 Streets Reliability 3 Streets Reliability Thane Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne M	Is > HCS2024 > Example Date modified 9/9/2024 143 PM 9/9/2024 143 PM 9/9/2024 143 PM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 767 AM 10/17/2023 767 AM	Type File folder File folder XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Search Lample A = - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <	t a Base Dataset.	
Operationality (ser + - H) Operationality (ser + - H) Operative New Vold M CS # M SS COSM # M SS MARK # M SS MARK # M SS COSM # M SS MARK #	S Streets Behability S Streets Behability Tame Hanne	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 2:05 AM 10/17/2023 2:05 AM 10/17/2023 2:05 AM 10/17/2023 2:07 AM 10/17/2023 2:07 AM 10/17/2023 2:07 AM	Type File folder File folder File folder SUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	Start Lumple A ■ ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00 ■ ■ 109 00	t a Base Dataset.	
■ Enterstatisticy Law *-11 ■ Open ← → ∞ ← ↑ ■ Open ← → ∞ ← ↑ ■ SS COBSM ≠	3 Streets Reliability 3 Streets Reliability Thane Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne Manne M	Is > HCS2024 > Example Date modified 9/9/2024 143 PM 9/9/2024 143 PM 9/9/2024 143 PM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 765 AM 10/17/2023 767 AM 10/17/2023 767 AM	Type File folder File folder XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Search Lample A = - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - <	t a Base Dataset.	
■ Enterstatisticy Law *-11 ■ Open ← → ∞ ← ↑ ■ Open ← → ∞ ← ↑ ■ SS COBSM ≠	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Search Lample A 2 Search Lample A 3 Search Lample A 109 08 109 08 109 08 109 08 109 08 109 08 109 08 109 08 109 08 109 08 109 08 109 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08 40 08	t a Base Dataset.	- σ x
Street-Gluidability Luce * - Hi Copinit Copinite * New Iddit Street-Street	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Search Lample A ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■	t a Base Dataset.	- σ x
Street-Gluidability Luce * - Hi Copinit Copinite * New Iddit Street-Street	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	
Street-Gluidability Luce * - Hi Copinit Copinite * New Iddit Street-Street	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Street-Gluidability Luce * - Hi Copinit Copinite * New Iddit Street-Street	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x
Stretekturability Luce *- Hi Copini Copinie New Idde Stretekturability Luce *- Hi Strete	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- 0 X
Stretebulasbilty Law *-1 H Cogenie Cogenie Cogenie Cogenie Cogenie SSS 00504 SSS 00504 SSSS	S Streets Reliability Tarree	s > HCS2024 > Example Date modified 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 9/9/2024 1-38 PM 10/17/2023 7:05 AM 10/17/2023 7:05 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:07 AM 10/17/2023 7:08 AM 10/17/2023 7:08 AM	Type File folder File folder File folder KUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File XUS File	3 Seach Lample ₽ Ξ • ■ • ■ 500 500 ■ ● ■ ● ■ ● ■ ● ■ ● ■ ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	t a Base Dataset.	- σ x

b. Create Base File' opens the *HCS Streets* program allowing you to create a Streets (*.xus) file which can then be saved and loaded into *HCS Streets Reliability* using the 'Select Base File' button

Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024
Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024
Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024
Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024
Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 Univer
Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved.
Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. Cognight C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 University of Fords All Rights Reserved. C 2024 Univer
Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved. MCST Streets Riskbilly Version 2025 (DSC) Cognight C 2024 University of Fords All Rights Reserved.
Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. C Cognight C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024
Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. Cognight C 2024 University of Fords. All Rights Reserved. C Cognight C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C D C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024 University of Fords. All Rights Reserved. C C 2024
🛎 StreetsRelability
1. Finan valet a fine fataset
Till MCG Streets
File View Edit Windows Help ① Do Do Do Do O to To O do Su
HCS Streets Version 2025 ×
Open New
Select mode to create new dataset
€ Dest
Lack

Load Regional Weather

1. On the Weather page, a weather location must be selected for an analysis if Weather is included in scenario generation.

			1. P	llease sele	ect a Weat	ther Locati	tion.							
	Choose Nearest City		. م	L	oad Re	gional V	Weathe	er	R	eset to I	Regiona	l Defau	lt	
	Current Location:													
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	Total normal precipitation (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Total normal snowfall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Days with precipitation*	0	0	0	0	0	0	0	0	0	0	0	0	
	Average temperature (degree F)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Precipitation rate (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	*Precipitation of 0.01 inch or more													
	Pavement runoff duration for snow even	nt (h)	0.5											
	Demand change factor for dry weather		1											
-	Demand change factor for rain event		1											$(\rightarrow$
ck	Demand change factor for snow event		0.8											Nex

2. A drop down list of U.S. cities is provided. You can open the list by selecting the down arrow and scrolling through to search for a particular city or you can type a city in the box which will find the location in the list.

StreetsReliabilityTxsr* - HCS Streets Reliability
E START BASE ANALYSIS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY REPORT
START BASE ANALYSIS WEATHER DEMAND INCIDENT SCHARIOS EVENTS SUMMARY REPORT Pleventer Stimute Create There there is the intervent of the interven
opyright © 2024 University of Fordal. All Rights Reserved. HCS ⁼ Streets Reliability Version 2025 (L

	GAINESVILLE FL		8.*	1	and D	gional	Son				Regiona	1D-fai		
					LOad Re	egional	vveatne	21	R	eset to	Regiona	il Defau		
	Current Location:	-	1	1	-				lesson a	-				
	A	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	Total normal precipitation (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Total normal snowfall (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Days with precipitation*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0	0	
	Average temperature (degree F) Precipitation rate (in.)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	*Precipitation of 0.07 inch or more	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
	Pavement runoff duration for snow ev	ent (h)	0.5											
	Demand change factor for dry weathe		1											
	Demand change factor for rain event		1											
)	Demand change factor for snow event		0.8											

3. Once a city is selected, click the 'Load Regional Weather' button. This will populate the table below with information based on the location selected.

GAINESVILLE, FL		× •	Load	Regional	Weathe	er	Re	set to R	egional	Default		
Current Location: GAINESVILLE, FL												
	Jan		Mar Ap		Jun	Jul	Aug				Hec .	
	3.51	3.39 4	1.26 2.8	_	6.78	6.1	6.63		-	-	56	
Total normal snowfall (in.)	_			0		0		0		0	_	
	8		7 5	_	14	15	16	11	7		6	
	54.3	_	2.5 67	_	79.2	80.9		-	-	-	6.3	
	0.145	0.116 0	216 0.1	83 0.285	0.19	0.232	0.206	0.193	0.137 (0.154 0	106	
*Precipitation of 0.01 inch or more	_	_										
Pavement runoff duration for snow event	t (h)	0.5										
Demand change factor for dry weather		1										
Demand change factor for rain event		1										
Demand change factor for snow event		0.8										$(\rightarrow$
												Next
												THEAT

- 4. This table is editable so individual cells can be changed if necessary.
- 5. If cells are changed, and you wish to reload the defaults of your chosen location, a 'Reset to Regional Default' button is provided.

Generate Scenarios

1. On the Scenarios page, Scenario Generations Settings are provided.

	etsReliability1.xxr * - HCS Streets Reliability						- 0 X
=	START BASE ANALYSIS WEATHER DEMAND INCIDENT SCI	ENARIOS EVENTS SUMMA	RY REPORT				
		Scenario Generation Settings					
		194 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 - 1949 -		Weather	Demand	Incident	
			Include		8		
			Random Seed*	82	11	63	
			*Random seed is a w	hole number in	range (0100)	1	-
			🗹 Randomize I	Demand Volum	e for every ana	lysis period	
			Number of re	eplications*		1	
		*Number of t	imex each scenario is g	penerated to mi	nimize any bia	that rare events	its may cause.
				Generate So	cenarios		
		Progress Status					
Æ							
Back							Next
Сору	ight © 2024 University of Florida. All Rights Reserved.						HCS™ Streets Reliability Version 2025 (USC)

2. Checkboxes are provided for Weather, Demand, and Incident to indicate whether or not to consider the input provided on their respective pages in the scenario generation process.

StreetsReliability1xsr*-HCS Streets Reliability			0 X
START BASE ANALYSIS WEATHER DEMAND INCIDENT SC	ENARIOS EVENTS SUMMARY REPORT		
€ Back	Scenario Generation Setting: Index Ind		() Next
Copyright © 2024 University of Florida. All Rights Reserved.	HCS ^{III} Sta	eets Reliability Versio	

3. Random Seed numbers are provided for Weather, Demand, and Incident so that a sequence of random events can be reproduced.

StreetsReliabidyTust*+HCS Streets Reliability	CENARIOS EVENTS SUMMA	ARY REPORT						- 0 X
	Scenario Generation Settings						7	
			Weather	Demand	Incident			
		Include	V	V	V			
		Random Seed*	82	11	63			
		Random seed is a w			the second second			
		Number of re		rior every anal	1			
	Mountain of	times each scenario is g		inin any hier		10.01 CO 01		
	And the second s	tanes ouch scenario a g	personal to ma	unge uny olus	THE THE ETCHA	only cause.		
			Generate Sc	enarios				
	Progress Status							
~								
€ Back								
Back								Nex
Copyright © 2024 University of Florida. All Rights Reserved.								HCS [™] Streets Reliability Version 2025 (USC

4. A checkbox is also provided to give the option of randomizing demand volume for every analysis period.

_	E START BASE ANALYSIS WEATHER DEMAND INCIDENT SCENARIOS EVENTS SUMMARY REPORT	
	Scenario Generation Settings	
	Weather Demand Incident Include Gr Gr Gr	
	Include v v v v	
	Bandlam seed is a whole an impact of the second and the se	
	Set Randomize Demand Yolams for very analysis period	
	Number of replications* 1	
	"Humber of times each scenaria is generated to minimize any bias that one events may cause.	
	Generate Scenarios	
	Progress Status	
_		0
(+ Back		() Next
Back	Back	Next
Copyr	Copyright & 2024 University of Florida. All Rights Reserved.	HCS ¹⁴ Streets Reliability Version 2025 (USC)
		(or a second

5. The number of replications can be indicated before scenario generation. This is the number of times each scenario is generated to minimize any bias that rare events may cause. For example, if there are 260 scenarios in an analysis and 2 replications, each replication will have 260 scenarios or a total of 520 scenarios. The default number of replications is 1.

START BASE ANALYSIS WEATHER DEMAND INCIDENT S	CENARIOS EVENTS SUMMAR	RY REPORT					
	Scenario Generation Settings						
			Weather	Demand	Incident		
		Include	V	V	X		
		Random Seed*	82	11	63		
		*Random send is a w			als pariod		
		Number of re		rui every aliai	1		
	Mumber of ti	imes oach scenaria is g		imire any hias		ents may cause.	
			Generate Sc	enarios			
	Progress Status						
\sim							\sim
e Back							() Next
Back							Next
Copyright © 2024 University of Florida. All Rights Reserved.						HCS ¹⁴ Streets Reliability Version 20a	

6. Once everything is set, click on the 'Generate Scenarios' button to start the scenario generation process.

-	START BASE ANALYSIS WEATHER DEMAND INCIDENT SU	ENARIOS EVENTS SUMMAR	RY REPORT						
	START BASE ANALYSIS WEATHER DEMAND INCIDENT SC	⊙ Scenario Generation Settings	Include Random Seed* *Random seed is a w Randomize D Number of re mere each scenaria is g	Demand Volume	e for every anal nimize any bias	1			
Eac		♥ Progress Status							Ne
Cop	yright © 2024 University of Florida. All Rights Reserved.							HCS [™] Streets Reliability Version 2025	5 (US

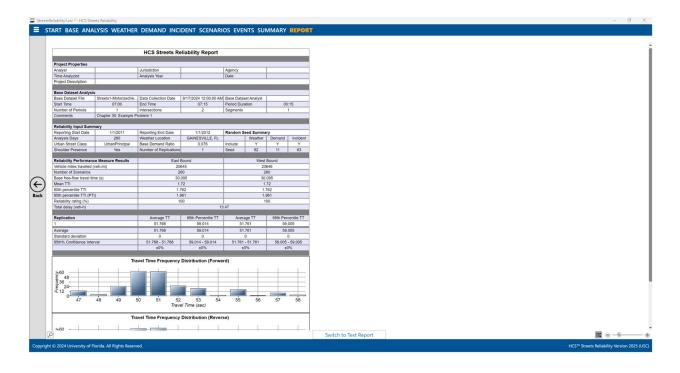
7. When scenario generation starts, the Progress Status section will indicate the current replication generating scenarios, the current number of scenarios generated within the replication, and the time elapsed for scenario generation. There is also a progress bar at the bottom of the window to indicate scenario generation is in progress.

StreetsReliability1.xsr * - HCS Streets Reliability		-	σ×
START BASE ANALYSIS WEATHER DEMAND INCIDENT SCEN	ARIOS EVENTS SUMMARY REPORT		
6	Scenario Generation Settings		
	Progress Status		
	Replication : 1		
	Scenarios Generated : 5 out of 260 Scenarios Time Elapsed : 0 hours 0 minutes 3 seconds		
	Cancel		
	Carrier		
		1	
€ Back			() Next
Back			Next
			_
Copyright © 2024 University of Florida. All Rights Reserved.		HCS [™] Streets Reliability Version	2025 (USC)

8. When scenario generation is done, Scenarios Generated will say "Scenario Generation Completed."

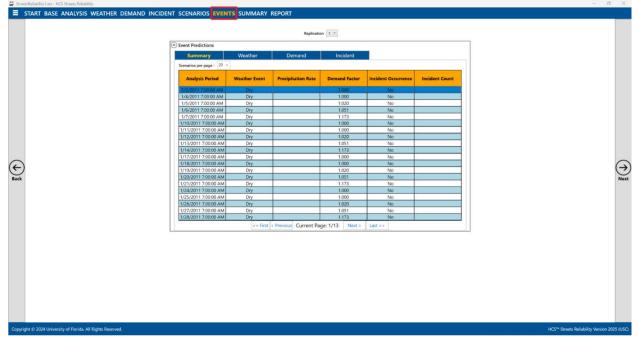
9. The Events, Summary, and Report pages will be populated with results after completion of scenario generation.

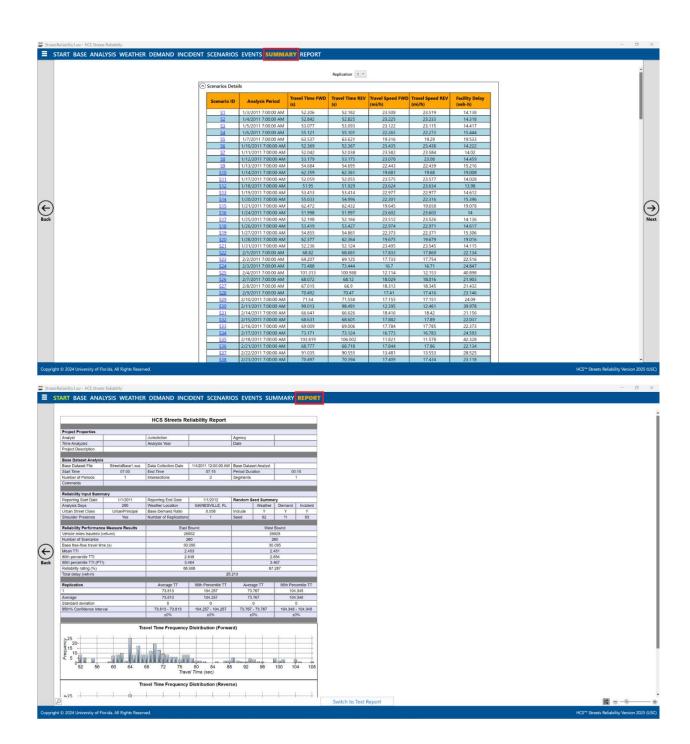
	HCS Streets Reliability ANALYSIS WEATHER DEMAND INC	CIDENT SCENARIOS	EVENTS SUMM	ARY REPORT							- 0
wind wind wind wind Image: Image					Replication 1 *						
appment appment< appment				Dema	and In	cident					
				Provinitati	an Pate Dama	nd Frates Inci	dant Occurrence	Incident Count			
sigma to be		1/3/2011 7:00	:00 AM Dry	ent Precipitati	0	762	No	incident Count			
a potencia b potencia <td></td> <td>1/5/2011 7:00</td> <td>:00 AM Dry</td> <td></td> <td>0</td> <td>.777</td> <td>No</td> <td></td> <td></td> <td></td> <td></td>		1/5/2011 7:00	:00 AM Dry		0	.777	No				
width bin in the state of		1/7/2011 7:00	00 AM Dry 0:00 AM Dry		0	.894	No No				
Image: Transmission of the state of the		1/12/2011 7:00	0:00 AM Dry		0	.777	No				
Image: 1 mage:		1/14/2011 7:00	0:00 AM Dry		0	.894	No				
Image:		1/18/2011 7:00 1/19/2011 7:00	0:00 AM Dry 0:00 AM Dry		0	.762	No No				
<u>bit is </u>		1/21/2011 7:00	D:00 AM Dry		0	.894	No				
 		1/25/2011 7:00	0:00 AM Dry		0	.762	No				
ad		1/27/2011 7:00	D:00 AM Dry		0	.801	No				
Image: Contract			<.	First < Previous C	urrent Page: 1/13	Next > Last	>>				
Securito D Analysis Period Toreal Toreal No. Toreal Speed FWD Toreal Speed FWD Toreal Speed FWD Formality Display 51. 17/2011 70000 AM 47.289 47.249 25.974 10.094 53. 17/2011 70000 AM 47.289 47.241 25.976 25.975 10.094 54. 14/2011 70000 AM 44.2759 47.241 25.977 10.183 54. 14/2011 70000 AM 49.735 49.785 24.665 24.651 12.291 55. 11/1/2011 7000 AM 49.739 47.785 25.976 10.149 52. 11/1/2011 7000 AM 44.7393 47.781 26.071 10.080 51. 11/1/2011 7000 AM 44.798 26.015 26.011 20.012 52. 11/1/2011 7000 AM 44.798 26.010 26.010 25.000 10.980 51.0 11/14/2011 7000 AM 44.798 26.017 25.67 10.980 51.1 11/12/2011 7000 AM 44.793 26.177 25.181 10.007 51.1 11/12/2011 7000 AM 44.793 25.91 25.91 10	sity of Florida. All Rights Reserved. HCS Streets Reliability									HCS™ Streets Relia	
Activation Constraint Constraint Constraint Constraint Constraint S1 11/2/2011 70000 AM 47.425 47.411 25.874 25.864 10.094 S2 11/2/2011 70000 AM 47.425 47.411 25.878 25.864 10.183 S3 11/2/2011 70000 AM 47.425 47.411 25.878 25.864 10.183 S4 11/2/2011 70000 AM 47.855 47.978 25.868 25.575 10.731 S5 11/2/2011 70000 AM 47.357 47.355 25.976 25.917 10.149 S2 11/1/2/011 70000 AM 47.291 47.138 26.070 26.001 10.007 S3 11/2/2/01 7000 AM 47.291 47.178 24.866 24.966 12.069 S10 11/2/2011 7000 AM 47.975 47.478 25.971 10.398 12.991 S110 11/2/2011 7000 AM 47.975 47.48 25.971 26.114 997 S121 11/2/2011 7000 AM 47.975 47.	HCS Streets Reliability	CIDENT SCENARIOS	EVENTS SUMM	ARY REPORT						HCS [™] Streets Relia	
\$2 14/4011 70000 AM 47.425 47.411 25.878 25.864 10.185 \$3 1/6/011 70000 AM 47.444 47.165 26.027 26.011 10.183 \$4 1/6/011 70000 AM 47.857 47.856 25.858 25.575 10.731 \$5 1/0/2011 70000 AM 47.357 47.355 25.916 25.917 10.149 \$5 1/0/2011 70000 AM 47.357 47.355 25.916 25.917 10.000 \$2 1/1/2011 70000 AM 47.936 45.916 25.917 10.000 \$3 1/1/2011 70000 AM 47.936 47.918 26.010 26.000 10.307 \$10 1/1/2011 70000 AM 47.917 94.9475 24.806 24.806 12.069 \$11 1/1/20011 70000 AM 47.955 47.936 25.911 26.113 10.967 \$12 1/1/20011 70000 AM 47.955 47.936 25.91 10.306 13.999 \$12 1/1/20011 70000 AM 47.955 47.93 25.92 25.666 10.002 \$14 1/2/20011 70000 AM 47	S Streets Reliability			ARY REPORT	Replication 1 ×				7	HCS ^w Streets Relia	
S4 1/6/2011 70000 AM 48 47/98 25/64 25/57 10/71 55 1/10/2011 7000 AM 49778 92/465 24615 12/211 56 1/10/2011 7000 AM 4737 47355 25/91 10.149 57 1/11/2011 7000 AM 44978 42/91 25/91 10.033 58 1/12/2011 7000 AM 47201 47198 26/01 25/671 05/96 510 1/14/2011 7000 AM 47831 4781 25/671 25/671 05/96 511 1/14/2011 7000 AM 47951 49/475 24/96 24/965 12/963 5111 1/14/2011 7000 AM 47956 47391 25/911 10.366 5111 1/14/2011 7000 AM 47356 47391 25/91 10.366 514 1/20/2011 7000 AM 47356 4736 25/91 10.366 514 1/20/2011 7000 AM 47366 47372 25/91 10.366 514 1/20/2011 70000 AM 44726 4772 <td></td> <td>Scenarios Deta</td> <td>ils Analysis Period</td> <td>Travel Time FWD (s)</td> <td>Travel Time REV (s)</td> <td></td> <td></td> <td>(veh-h)</td> <td></td> <td>HCS²⁴ Streets Refu</td> <td>ability Version 20</td>		Scenarios Deta	ils Analysis Period	Travel Time FWD (s)	Travel Time REV (s)			(veh-h)		HCS ²⁴ Streets Refu	ability Version 20
56 1/10/2011 70000 AM 47357 47355 25.917 10.149 52 1/11/2011 70000 AM 47291 47.189 26.001 22.002 10.2071 58 1/12/2011 70000 AM 47.090 47.198 26.001 22.002 10.2071 59 1/12/2011 70000 AM 47.090 47.11 25.673 25.67 10.598 510 1/14/2011 70000 AM 49.475 49.475 24.806 12.063 511 1/17/2011 70000 AM 45.956 46.54 26.117 25.146 9.979 513 1/19/2011 70000 AM 47.955 47.36 25.592 25.666 10.702 514 1/2/2011 70000 AM 47.955 47.33 25.592 25.666 10.702 515 1/2/2011 70000 AM 47.956 47.31 26.138 9.99 512 1/2/2011 70000 AM 47.366 47.372 25.51 10.055 518 1/2/2011 70000 AM 47.365 47.372 25.977 10.036 512 <td></td> <td>Scenarios Deta Scenario ID S1 S2 S2 S</td> <td>ils Analysis Period 1/3/2011 7:00:00 AM 1/4/2011 7:00:00 AM</td> <td>Travel Time FWD (s) 47.269 47.425</td> <td>Travel Time REV (s) 47.249 47.411</td> <td>25.964 25.878</td> <td>25.974 25.886</td> <td>(veh-h) 10.094 10.185</td> <td>]</td> <td>HCS³⁴ Streets Refu</td> <td></td>		Scenarios Deta Scenario ID S1 S2 S2 S	ils Analysis Period 1/3/2011 7:00:00 AM 1/4/2011 7:00:00 AM	Travel Time FWD (s) 47.269 47.425	Travel Time REV (s) 47.249 47.411	25.964 25.878	25.974 25.886	(veh-h) 10.094 10.185]	HCS ³⁴ Streets Refu	
S8 11/12/2011 70000 AM 47.198 26.001 26.002 10.2071 S9 11/12/2011 70000 AM 49.493 47.81 25.757 25.677 10.598 S10 11/12/2011 70000 AM 49.475 49.475 24.406 24.806 12.683 S11 11/17/2011 70000 AM 44.975 49.475 24.111 10.007 S12 11/18/2011 70000 AM 44.956 46.94 26.117 25.16 97.97 S13 11/92/011 70000 AM 47.955 47.93 25.92 25.966 10.70.2 S15 12/202011 70000 AM 47.955 47.93 25.950 25.75 10.05 S12 12/22/011 70000 AM 44.971 46.971 26.128 25.97 10.05 S13 12/22/011 70000 AM 47.365 47.372 25.95 25.97 10.05 S13 12/22/011 70000 AM 47.365 44.93 24.8 24.902 12.068 S22 12/12/011 7000 AM 45.05 40.99 25.59 <t< td=""><td></td><td>Scenarios Deta Scenario ID S1 S2 S3 S4</td><td>ils Analysis Period 1/3/2011 7.00.00 AM 1/5/2011 7.00.00 AM 1/5/2011 7.00.00 AM</td><td>Travel Time FWD (s) 47.269 47.425 47.154 48</td><td>Travel Time REV (s) 47.249 47.411 47.165 47.988</td><td>25.964 25.878 26.027 25.568</td><td>25.974 25.886 26.021 25.575</td><td>(veh-h) 10.094 10.185 10.183 10.731</td><td></td><td>HCS^m Streets Refu</td><td></td></t<>		Scenarios Deta Scenario ID S1 S2 S3 S4	ils Analysis Period 1/3/2011 7.00.00 AM 1/5/2011 7.00.00 AM 1/5/2011 7.00.00 AM	Travel Time FWD (s) 47.269 47.425 47.154 48	Travel Time REV (s) 47.249 47.411 47.165 47.988	25.964 25.878 26.027 25.568	25.974 25.886 26.021 25.575	(veh-h) 10.094 10.185 10.183 10.731		HCS ^m Streets Refu	
S11 1/17/2011 7000 AM 44 6956 46 544 26 117 26 146 9375 S12 1/18/2011 7000 AM 47 365 47 366 25 117 25 146 9375 S13 1/19/2011 7000 AM 47 365 47 366 25 911 10 306 S14 1/20/2011 7000 AM 47 395 47 366 25 912 25 606 10 702 S15 1/21/2011 7000 AM 49 559 49 541 24 748 24 763 12 103 S16 1/22/2011 7000 AM 44 571 45 418 26 128 26 199 939 S12 1/25/2011 7000 AM 47 366 47 372 25 591 25 507 10 036 S13 1/26/2011 7000 AM 44 365 46 399 25 55 25 486 10 662 S12 1/27/2011 7000 AM 44 471 44 843 24 84 24 802 12 668 S12 1/27/2011 7000 AM 44 547 44 244 25 974 10 406 S12 1/27/2011 7000 AM 50 986 24 498 12 666 13 145 S12 2/2/2011 7000 AM 50 986 50 986 24		Scenarios Deta Scenario ID S1 S2 S3 S4 S5 S6	ils Analysis Period 1/3/2011 7:00:00 AM 1/4/2011 7:00:00 AM 1/5/2011 7:00:00 AM 1/7/2011 7:00:00 AM 1/1/2011 7:00:00 AM 1/1/1/2011 7:00:00 AM	Travel Time FWD 47 269 47 425 47,154 49,758 47,357 46,995	Travel Time REV (s) 47.249 47.411 47.165 47.988 49.785 47.355 46.992	25.964 25.878 26.027 25.568 24.665 25.916 26.115	25.974 25.886 26.021 25.575 24.651 25.917 26.117	(veh-h) 10.094 10.185 10.183 10.731 12.291 10.149 10.003		HCS ^{ar} Streets Refu	
S13 1/19/2011 70000 AM 47.365 47.366 22.911 22.931 10.306 S14 1/20/2011 70000 AM 47.955 47.36 22.550 10.702 S15 1/2//2011 70000 AM 49.559 49.541 24.744 24.713 12.103 S16 1/2/4021 70000 AM 49.559 47.248 25.168 25.175 10.956 S11 1/2/5/011 70000 AM 47.275 47.248 25.56 25.575 10.095 S12 1/2/5/011 70000 AM 44.015 48.019 25.55 25.548 10.662 S21 1/2/2011 70000 AM 47.025 47.224 25.974 25.989 10.08 S22 2/2/2011 70000 AM 50.966 50.955 24.079 24.006 13.151 S23 2/2/2011 70000 AM 50.968 50.955 24.079 24.006 13.165 S24 2/2/2011 70000 AM 50.964 21.476 24.578 13.971 S24 2/2/2011 70000 AM 50.951 50.952 24.078			Is Analysis Period 1/3/2011 70000 AM 1/4/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/10/2011 70000 AM 1/12/2011 70000 AM 1/12/2011 70000 AM 1/12/2011 70000 AM	Travel Time FWD (s) 47,269 47,425 47,154 48 49,758 46,975 46,995 47,201 47,803	Travel Time REV (s) 47.249 47.411 47.165 47.988 49.785 47.385 46.992 47.198 47.81	25.964 25.878 26.027 25.568 24.665 25.916 26.115 26.001 25.673	25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.002 25.67	(veh-h) 10.094 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.598		HCS ^{an} Streets Relia	
515 1/2/1/2011 7:0000 AM 49:559 49:541 24.774 12.013 516 1/2/4/011 7:0000 AM 4771 46:71 26:128 29:975 10:095 517 1/2/5/011 7:0000 AM 47:275 47:248 25:59 10:095 518 1/2/6/011 7:0000 AM 47:275 47:248 25:59 10:095 519 1/2/7/011 7:0000 AM 440:05 440:039 25:55 25:548 10:662 520 1/2/2011 7:0000 AM 440:05 47:248 24:962 12:06 521 1/2/011 7:0000 AM 47:25 47:224 25:974 25:899 10:08 522 2/2/011 7:0000 AM 50:965 24:079 24:086 13:165 523 2/2/011 7:0000 AM 51:08 51:82.9 23:676 12:367 12:371 524 2/4/2011 7:0000 AM 50:365 50:95 24:079 24:085 12:499 522 2/4/2011 7:0000 AM 50:31 50:542 24:285 13:161 522 <		 ○ Scenarios Deta Scenario ID 51 52 53 54 54 56 57 58 59 510 511 	IS Analysis Period 1/3/2011 70000 AM 1/3/2011 70000 AM 1/3/2011 70000 AM 1/7/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM	Travel Time FWD (a) 47 269 47 425 47,154 48 49,758 47,357 46,995 47,201 47,803 49,475 47,001	Travel Time REV (s) 47 249 47,411 47,165 47,988 49,785 47,355 47,355 47,355 47,311 47,411 47,415 47,355 47,355 47,315 47,81 49,475 46,998	25.964 25.878 26.027 25.568 24.665 25.916 26.115 26.001 25.673 24.806 26.111	25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.002 25.67 24.806 26.113	(veh-h) 10.094 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.598 12.063 10.007		HCS ^{an} Streets Refu	
S18 11/26/2011 70000 AM 47.376 47.372 25.91 12.5807 10.308 S19 1.727/2011 70000 AM 49.05 48.099 25.55 25.54 10.662 S20 1.728/2011 70000 AM 49.487 49.483 24.8 24.802 12.068 S21 1.731/2011 70000 AM 47.25 47.224 25.574 25.98 10.06 S22 21/2011 70000 AM 51.03 50.996 24.05 24.066 13.125 S24 21/2011 70000 AM 51.08 50.995 24.079 24.088 13.163 S24 21/2011 70000 AM 51.08 51.829 23.676 23.679 13.751 S25 2.4/2011 70000 AM 55.351 50.542 24.281 13.011 S22 2.4/2011 70000 AM 55.352 24.377 24.388 12.859 S24 2.4/2011 70000 AM 55.35 55.222 24.371 13.374 S25 2.1/2011 7000 AM 55.75 56.74 21.624 16.42 <tr< td=""><td></td><td>© Scenarios Deta Scenario ID 51 52 53 54 55 56 56 57 59 510 511 512 513 513</td><td>IIS Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/1/2011 70000 AM</td><td>Travel Time FWD (s) 47.269 47.425 47.154 48 49.758 47.201 47.803 49.975 47.201 46.995 47.201 46.995 47.001 46.995 47.365</td><td>Travel Time REV 47.249 47.411 47.165 47.908 49.785 47.355 47.198 47.198 47.198 47.198 47.81 49.925 46.998 46.594 47.366</td><td>25964 25878 26027 25568 24665 25916 26115 26001 25673 24806 26111 26137 25911</td><td>25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.002 25.67 24.806 26.113 26.146 25.91</td><td>(veh-h) 10.094 10.185 10.185 10.731 12.291 10.149 10.003 10.207 10.598 12.063 10.007 9.979 10.306</td><td></td><td>HCS^m Streets Refu</td><td></td></tr<>		© Scenarios Deta Scenario ID 51 52 53 54 55 56 56 57 59 510 511 512 513 513	IIS Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/1/2011 70000 AM	Travel Time FWD (s) 47.269 47.425 47.154 48 49.758 47.201 47.803 49.975 47.201 46.995 47.201 46.995 47.001 46.995 47.365	Travel Time REV 47.249 47.411 47.165 47.908 49.785 47.355 47.198 47.198 47.198 47.198 47.81 49.925 46.998 46.594 47.366	25964 25878 26027 25568 24665 25916 26115 26001 25673 24806 26111 26137 25911	25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.002 25.67 24.806 26.113 26.146 25.91	(veh-h) 10.094 10.185 10.185 10.731 12.291 10.149 10.003 10.207 10.598 12.063 10.007 9.979 10.306		HCS ^m Streets Refu	
S20 1/28/2017 0000 AM 49.487 49.483 24.8 24.80 12069 S21 1/21/2017 0000 AM 47.25 47.24 25.94 25.995 10.08 S22 21/2017 7000 AM 50.956 24.07 24.066 13.163 S23 22/2017 7000 AM 50.956 24.07 24.086 13.163 S24 22/2017 7000 AM 50.956 24.079 24.086 13.163 S24 22/4017 7000 AM 50.985 24.679 24.268 13.163 S25 21/4017 7000 AM 50.935 50.52 24.479 13.571 S26 21/2017 7000 AM 50.53 50.52 24.385 13.245 S28 21/02017 7000 AM 50.93 24.116 24.115 13.476 S29 21/1/2017 7000 AM 50.95 50.954 24.624 24.52 16.421 S20 21/1/2017 50.00 AM 50.954 24			is Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/2/2011 70000 AM 1/2/2011 70000 AM 1/2/2011 70000 AM 1/2/2011 70000 AM 1/2/2011 70000 AM 1/2/2011 70000 AM	Travel Time FWD Gi 47.269 47.425 47.154 48 49.758 47.201 47.803 49.475 47.201 49.475 47.365 47.365 47.355 47.355 46.955 47.355 46.955 46.971	Travel Time REV (5) 47.249 47.11 47.165 47.988 49.785 47.986 47.186 47.186 47.986 47.986 47.986 47.986 47.986 47.986 47.986 47.986 47.986 47.986 47.986 47.986 46.997 46.971	25964 25878 26027 25568 24665 25916 26115 26001 25673 24806 26111 26137 25911 25592 24764 26128	25974 25886 26021 25575 24651 26597 2602 2567 24806 26113 26146 2591 25606 24773 26128	(veh-h) 10.094 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.598 12.063 10.007 10.306 10.722 12.103 9.99		HCS ^m Streets Refu	
S22 21/2011 70000 AM 50.39 50.996 24.065 13.125 S23 22/2011 70000 AM 50.896 50.85 24.079 24.086 13.163 S24 23/2011 70000 AM 51.836 51.829 23.676 23.679 12.879 S25 24/2011 70000 AM 50.318 50.542 24.081 21.456 16.557 S26 27/70011 70000 AM 50.531 50.542 24.282 12.011 S27 24/0011 70000 AM 50.535 50.542 24.383 12.859 S28 24/2011 70000 AM 50.399 50.983 24.116 24.115 13.475 S28 24/2011 70000 AM 56.756 56.734 21.624 21.632 16.42 S31 21/4011 70000 AM 50.951 50.944 24.091 13.044 S32 21/5011 7000 AM 50.951 50.944 24.091 13.047 S32 21/5011 7000 AM 50.951 50.941 24.091 13.047 S33 21/5010 7000 AM<			is Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/2/2011 70	Taxwel Time FWD (a) (a) 47.425 (47.425) 47.425 (47.425) 47.327 (47.425) 47.327 (47.427) 47.421 (47.427) 47.421 (47.427) 47.421 (47.555) 47.355 (47.555) 47.355 (47.275) 47.236	Travel Time REV (s) 47.249 47.11 47.165 47.988 49.785 47.988 47.988 47.989 46.992 47.198 46.996 46.596 46.596 47.366 47.93 49.541 46.971 47.248 47.322	25 964 25 878 26 027 25 568 24 665 26 115 26 011 25 673 24 806 26 111 26 137 25 911 25 592 24 764 26 128 25 96 25 91	25974 25.886 26.021 25.575 24.651 26.517 26.002 25.67 24.806 26.113 26.146 25.91 25.606 24.773 26.128 25.95 25.907	(veb.h) 10.094 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.596 12.063 10.007 9.979 10.306 10.702 12.103 9.99 10.095 10.308		HCS ^m Streets Refu	
S24 22/2011 7000 AM \$18.36 \$18.29 22.6776 12.6779 13.751 S23 22/2011 7000 AM \$70.06 \$70.94 21.491 21.466 16.557 S26 27/2011 70000 AM \$50.51 \$50.542 24.282 13.011 S22 27/2011 70000 AM \$50.51 \$50.542 24.288 24.282 13.011 S23 27/2011 70000 AM \$51.35 \$50.322 24.375 24.388 12.659 S24 27/0011 70000 AM \$51.27 \$12.66 22.939 13.374 S23 27/10/2011 70000 AM \$56.756 \$56.734 21.662 16.82 S13 27/40/2011 70000 AM \$50.951 \$50.944 24.091 13.044 S13 27/50/01 7000 AM \$50.951 \$50.944 24.091 13.044 S13 27/50/01 7000 AM \$50.951 \$50.947 24.951 13.047 S14 27/50/01 7000 AM \$50.422 \$24.957 13.041 S14 27/50/01 70000 AM \$50.977			Is Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/1/2011 70000 AM 1/2/2011 70	Taxwel Time FWD (a) (a) 47.425 (a) 47.425 (a) 47.425 (a) 47.425 (a) 47.935 (a) 47.937 (b) 47.937 (c) 47.937 (c) 47.935 (c) 47.935 (c) 47.935 (c) 47.936 (c) 47.936 <td>Travel Time REV (s) 47.240 47.111 47.61 47.012 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 49.715 46.994 47.366 47.366 47.366 47.366 47.366 47.366 47.372 48.039 49.483</td> <td>25 964 25.878 26.027 25.568 24.665 25.916 26.011 25.673 24.806 26.111 26.137 25.911 25.592 24.764 26.128 25.96 25.91 25.59 24.8</td> <td>25974 25886 26021 25575 24651 25917 26117 26117 26117 26117 26147 26147 26147 25917 26148 25917 25917 2591 26128 25975 25997 25548 24802</td> <td>(veb.h) 10.094 10.185 10.183 10.731 12.291 10.003 10.207 10.598 12.063 10.007 9.979 10.306 10.702 12.103 9.99 10.095 10.095 10.068</td> <td></td> <td>HCS^m Streets Refu</td> <td></td>	Travel Time REV (s) 47.240 47.111 47.61 47.012 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 47.11 49.715 46.994 47.366 47.366 47.366 47.366 47.366 47.366 47.372 48.039 49.483	25 964 25.878 26.027 25.568 24.665 25.916 26.011 25.673 24.806 26.111 26.137 25.911 25.592 24.764 26.128 25.96 25.91 25.59 24.8	25974 25886 26021 25575 24651 25917 26117 26117 26117 26117 26147 26147 26147 25917 26148 25917 25917 2591 26128 25975 25997 25548 24802	(veb.h) 10.094 10.185 10.183 10.731 12.291 10.003 10.207 10.598 12.063 10.007 9.979 10.306 10.702 12.103 9.99 10.095 10.095 10.068		HCS ^m Streets Refu	
S26 2/7/2011 7000 0AM 50531 50542 24.288 24.282 13.011 S22 2/8/2011 7000 0AM 5035 50322 24.375 24.380 12.859 S28 2/9/2011 7000 0AM 5127 51266 23.937 23.939 13.374 S22 2/10/2011 7000 0AM 50.99 50.983 24.116 24.115 14.475 S30 2/11/2011 70000 AM 56.756 56.734 21.624 16.42 S31 2/14/2011 70000 AM 50.956 50.944 24.652 12.711 S32 2/15/2011 70000 AM 50.951 50.944 24.087 24.691 13.084 S33 2/15/2011 70000 AM 50.942 54.35 24.35 13.047 S34 2/17/2011 70000 AM 50.942 54.35 24.351 13.047 S34 2/17/2011 70000 AM 51.07 51.199 23.967 23.971 13.598 S215 2/11/2011 70000 AM 57.7 57.387 21.27 21.368 16.753 <td></td> <td></td> <td>Is Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM</td> <td>Taxwel Time FWD (a) (a) 47,425 (a) 47,425 (a) 47,425 (a) 47,425 (a) 47,837 (a) 47,837 (b) 47,237 (c) 47,235 (c) 47,235 (c) 47,236 (c) 47,236</td> <td>Travel Time REV (c) 47.26 47.21 47.21 47.25 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.91 46.94 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.97 40.9541 40.9541 47.97 40.9541 47.97 47.97 49.83 47.24 50.96</td> <td>25 964 25 878 25 878 25 568 24 665 25 916 25 911 25 673 24 886 26 111 26 137 25 911 25 931 25 931 25 931 25 931 25 931 25 931 26 128 26 128 25 91 25 95 24 86 25 91 25 95 24 82 25 91 25 95 24 82 25 91 25 92 25 92 25 91 25 92 25 92 25 91 25 92 25 95 25 9</td> <td>25974 25886 26021 25575 24651 25917 26117 26502 2567 24806 265113 26146 2591 25506 24773 26128 2591 25548 2597 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 255558 255558 255558 255568 255568 255558 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 25</td> <td>(veb.h) 10.094 10.185 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.596 12.063 10.007 10.306 10.702 10.306 10.702 10.306 10.095 10.308 10.662 12.068 10.08 13.125</td> <td></td> <td>HCS^m Streets Refu</td> <td></td>			Is Analysis Period 1/3/2011 70000 AM 1/5/2011 70000 AM 1/5/2011 70000 AM 1/7/2011 70000 AM	Taxwel Time FWD (a) (a) 47,425 (a) 47,425 (a) 47,425 (a) 47,425 (a) 47,837 (a) 47,837 (b) 47,237 (c) 47,235 (c) 47,235 (c) 47,236	Travel Time REV (c) 47.26 47.21 47.21 47.25 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.91 46.94 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.95 47.97 40.9541 40.9541 47.97 40.9541 47.97 47.97 49.83 47.24 50.96	25 964 25 878 25 878 25 568 24 665 25 916 25 911 25 673 24 886 26 111 26 137 25 911 25 931 25 931 25 931 25 931 25 931 25 931 26 128 26 128 25 91 25 95 24 86 25 91 25 95 24 82 25 91 25 95 24 82 25 91 25 92 25 92 25 91 25 92 25 92 25 91 25 92 25 95 25 9	25974 25886 26021 25575 24651 25917 26117 26502 2567 24806 265113 26146 2591 25506 24773 26128 2591 25548 2597 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 25548 255558 255558 255558 255568 255568 255558 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 255568 25	(veb.h) 10.094 10.185 10.185 10.183 10.731 12.291 10.149 10.003 10.207 10.596 12.063 10.007 10.306 10.702 10.306 10.702 10.306 10.095 10.308 10.662 12.068 10.08 13.125		HCS ^m Streets Refu	
522 21/02011 70000 AM 50.893 24.116 24.115 13.475 530 21/12011 70000 AM 5576 56.774 21.824 216.82 16.42 511 21/14/2011 70000 AM 50.046 50.042 24.523 16.42 512 21/15/2011 70000 AM 50.046 50.042 24.523 12.457 513 21/15/2011 70000 AM 50.042 24.091 13.064 533 21/15/2011 70000 AM 50.042 24.35 24.35 13.047 534 21/15/2011 70000 AM 50.402 50.401 24.957 13.064 532 21/15/2011 70000 AM 51.047 51.199 23.967 23.971 13.599 535 21/16/2010 70000 AM 57.7 57.387 21.27 21.366 16.753			Analysis Period Analysis Ananalysis Analysis Analysis Ananaly	Travel Time FWD (a) 47.425 47.425 47.425 47.425 47.425 47.425 47.425 47.425 47.425 47.425 47.201 44.975 47.201 47.201 47.201 47.201 47.201 47.201 47.205 47.205 47.205 48.005 47.205 48.015 48.015 49.407 47.25 51.03 50.566 51.886 57.108	Tavel Time RIV (b) 47.249 47.241 47.165 47.765 47.765 47.765 47.765 47.785 46.592 47.781 46.593 46.593 46.593 46.593 46.593 46.593 46.593 47.246 47.266 47.326 47.248 48.039 49.843 47.224 50.9996 50.95 50.595 51.829 57.094 57.094	25 964 25 877 26 027 25 568 25 916 25 916 25 917 25 95 24 764 26 129 25 95 25 95 25 95 25 95 26 25 97 26 25 97 27 25 97 26 25 97 26 25 97 27 25 97 27 25 97 26 25 97 27 25 97 27 25 97 26 25 97 27 25 97 25 97 26 25 97 25 97 26 25 97 27 26 97 26 27 97 27 97 26 27 97 27 97 26 27 97 26 27 97 26 27 97 26 27 97 26 27 97 27 97 26 97 27 97 26 97 27 97 26 97 27 97 26 97 27 97 26 97 27 97 27 97 27 97 26 97 27 97 27 97 26 97 27 97 27 97 26 97 27 97 27 97 26 97 27 97 27 97 27 97 26 97 27 97 26 97 27 97 27 97 26 97 27 97 27 97 26 97 27 97 27 97 27 97 26 97 27 97 27 97 26 97 27	25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.117 26.117 26.102 23.567 24.806 26.113 26.146 25.91 25.606 24.173 26.128 25.975 25.948 24.802 24.802 25.999 24.802 25.999 24.068 24.068 24.068	(veh.) (vel.) (0.085 10.085 10.185 10.231 12.231 10.49 10.237 10.49 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207 10.207		HCS ^m Streets Rafia	
530 27/17/2017 70000 AM 56756 56.734 21.624 21.632 16.42 531 27/4/2017 70000 AM 50.046 50.042 24.523 24.55 12.711 532 27/5/2017 70000 AM 50.951 50.944 24.091 13.064 533 27/5/2017 70000 AM 50.92 24.35 24.35 13.047 534 27/17/2017 70000 AM 50.402 55.437 22.971 13.599 535 27/17/2017 70000 AM 57.7 57.387 21.27 21.366 16.753			Analysis Period Analysis An	Travel Time FWD File 47 425 47 425 47 425 47 425 47 47 45 49 75 47 47 201 49 75 47 47 201 49 47 55 47 47 201 49 47 55 47 47 201 47 401 46 995 47 201 47 401 47 201 47 47 201 47 201 47 395 49 4959 46 9596 47 205 47 395 49 4959 47 201 47 205 50 566 51 303 50 566 51 308 57 100 50 31 50 31 50 31	Tavel Time RIV (b) 47.249 47.241 47.165 47.765 47.765 47.765 47.765 46.592 47.716 46.592 47.718 46.593 46.592 47.31 46.593 47.266 47.264 47.24 40.372 48.032 40.372 50.555 50.595 51.82 50.595 51.82 50.324 20.324	25 964 25 878 26 027 25 556 25 916 25 916 25 673 25 673 24 4006 25 673 25 917 25 917 25 917 25 917 25 917 25 917 24 764 26 129 24 764 25 95 25 95 24 8 25 974 26 027 27 97 24 079 23 676 24 079 24 079 25 91 25 91 26 91 25 91 26 91 27 91 27 91 26 91 27 91 26 91 26 91 27 91 26 91 26 91 27 91 26 91 26 91 27 91 26 91 27 91 26 91 27 91 26 9	25.974 25.886 26.021 25.575 24.651 25.917 26.117 26.117 26.117 26.117 26.12 25.606 24.173 26.146 25.91 25.606 24.173 26.128 25.91 25.548 24.802 24.802 25.999 24.066 24.008 24.008 24.008 24.008	(veh.) 10,04 10,05 10,04 10,08 10,08 10,221 10,149 10,221 10,149 10,003 10,207 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,		HCS** Streets Rafia	
533 2/16/2011 70000 AM 59.402 59.401 24.35 13.047 534 2/17/2011 70000 AM 51.207 51.199 23.967 23.971 13.599 535 2/18/2011 70000 AM 57.7 57.387 21.27 21.366 16.753	ty	 	Analysis Period Analysis	Travel Time FWD 01 47.425 47.425 47.435 47.425 49.736 44.737 44.937 44.937 44.937 44.938 47.9201 44.947 59.94 47.001 46.955 47.921 47.365 47.935 49.955 46.935 49.477 47.236 48.035 50.966 51.836 57.108 50.331 50.331 50.331 50.331 50.38	Taved Time REV (b) 47.249 47.241 47.165 47.765 47.765 49.755 47.765 47.765 47.714 46.592 47.715 46.592 47.736 47.266 47.746 47.244 47.244 47.274 47.245 49.551 46.599 50.55 50.595 51.829 50.955 51.829 50.955 50.522 50.282 50.283	25 964 25 878 26 027 25 556 25 916 25 916 25 917 25 91 25 95 24 764 25 95 25 95 24 764 25 95 25 95 24 764 25 95 25 974 24 079 23 676 24 079 23 676 24 079 24 070 24	25974 25886 26021 25575 24651 25917 26117 26517 26517 26517 26517 26502 26517 26502 26517 26502 26517 26502 26517 25566 24602 2591 25566 24773 26575 25548 244802 25999 24066 24088 23679 24486 24088 23679 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 24486 25999 25588 26002 25588 25597 25588 26002 26002 25597 25588 26002 26002 25597 25588 24606 24672 25597 25588 24696 24696 24697 25588 24696 24696 24697 25588 24696 24697 25588 24696 24697 25597 25588 24696 24697 25597 25588 24696 24773 25588 24697 25597 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 24773 25588 24696 2478 24696 2478 24696 2478 24696 2478 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24696 24697 24697 24697 24697 24697 24697 24697 24697 24697 24697 24697 24697 24697 24697 24788 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 24787 247877 247877 24787777 24787777777777	(veh.) 10,04 10,05 10,04 10,08 10,03 10,221 10,149 10,231 12,231 10,149 10,003 10,207 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,		HCS** Streets Rafia	
SL4 21/17/2011 70000 AM 51:207 51:199 22:367 23:971 13:599 SL3 2.178/2011 70000 AM 57.7 57:387 21:27 21:365 16:753	liability		Analysis Period A	Travel Time FWD 01 47.425 47.425 47.425 47.425 49.736 44.7201 44.978 47.421 44.978 47.423 44.978 47.421 44.978 47.001 44.978 47.01 47.985 47.955 49.959 47.935 49.497 47.235 50.966 51.03 50.966 57.108 57.103 50.331 50.331 50.331 50.331 50.756 50.046	Taved Time REV (b) (b) 47.249 47.249 47.115 47.715 47.755 47.755 46.592 47.718 46.592 47.731 46.592 47.736 47.266 47.736 47.244 47.748 47.724 47.724 40.039 49.551 47.235 50.55 51.829 50.55 51.829 50.55 50.832 50.283 50.283 50.283 50.283	25 964 25 878 26 027 25 558 25 916 25 917 25 91 25 95 24 764 25 95 25 95 24 764 25 95 25 95 24 764 25 95 24 764 24 765 24 764 24 765 24 764 24 765 24 767 24 767 247	25974 25886 26021 25575 24651 25917 26117 26517 26517 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 26502 26502 26502 26502 26502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502	(veh.) 10,04 10,05 10,04 10,08 10,08 10,221 10,149 10,221 10,149 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,221 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,225 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,255 10,		HCS ^m Streets Relia	
S36 2/21/2011 7:00:00 AM 51:03 51:016 24:05 24:057 13:127	lity	 Scenarios Deta Scenario ID 51 53 54 55 59 51 51 51 51 511 512 512 512 513 516 516 516 519 520 521 522 523 524 525 526 527 528 529 530 531 532 532 533 	Is Analysis Period Jy/2011 70000 AM	Travel Time FWD 47 425 47 425 47 425 47 475 47 475 47 475 47 4701 48 975 47 201 48 975 47 201 48 975 47 201 47 201 48 955 47 201 47 201 47 201 47 305 48 955 47 201 47 203 47 375 48 955 48 955 47 205 50 966 51 808 57 108 50 3046 50 3045 50 3045 50 3045 50 3045 50 3045 50 3045 50 3045	Taved Time REV (b) 47.249 47.249 47.165 47.755 47.755 47.755 47.757 47.758 47.758 47.758 47.758 47.758 47.748 47.746 47.748 47.748 47.748 47.748 47.724 40.039 49.851 47.224 50.95 51.829 50.95 51.22 50.95 50.22 50.93 50.704 50.93 50.704 50.92 50.93 50.704 50.94 50.92 50.92 50.94 50.94 50.94 50.94 50.94 50.94 50.94 50.94 <	25 964 25 878 26 027 25 556 25 916 25 916 25 917 25 917 26 12 92 26 12 9	25974 25886 26021 25575 24651 25917 26117 26517 26517 26517 26517 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 25502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502 26502	(veh.) 10,04 10,185 10,185 10,185 10,231 12,231 10,149 10,207 10,207 10,207 10,207 10,009 10,007 10,009 10,007 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,009 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000 10,000		HCS ^m Streets Relia	
S22 2/2/2/17/10/000 AM S1/03 S1/010 2/4/05/ 13.127 S37 2/2/2/0117/0000 AM 62.176 62.108 19.739 19.76 14.102 S38 2/2/2/0117/0000 AM 51.247 51.266 23.948 23.959 13.36	y	Scenarios Deta Scenario ID 51 52 53 55 55 55 55 55 55 55 55 55 55 55 55	Analysis Period 17/2011 70000 AM 15/2011 70000 AM 17/2011 70000 AM 17/2011 70000 AM 17/2011 70000 AM 17/2	Travel Time FWD 01 47.425 47.425 47.425 47.425 49.735 44.978 49.742 44.978 47.921 47.425 47.921 47.426 47.921 47.921 47.921 47.925 47.921 47.925 47.925 47.925 47.936 48.925 50.946 50.966 50.9331 50.935 50.2046 50.9045 50.9046 50.9051 50.9045 50.9051 50.9042 50.9051 50.9042 50.9051 50.707	Transformer REV (c) 47 219 47 211 47 155 47 235 47 235 47 235 47 235 47 235 47 235 47 236 47 238 47 238 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 47 236 500 230 500 230 500 204 500 204 500 204 500 204 500 204 100 204	25 964 25 877 26 027 25 568 25 916 26 017 25 917 26 017 25 917 25 917 25 917 25 917 25 917 25 917 25 917 25 917 26 107 25 91 25 95 28 95 2	25974 25886 26021 25575 24651 25917 26117 26517 26517 26517 26517 26502 26517 26502 26517 26502 26517 26502 26517 26502 26517 25566 24002 25907 25568 24002 25907 25548 24006 24008 25975 25548 24006 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 24008 25975 25548 24008 25575 25999 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 26008 20008 20008 20008 20008 20000000000	(veh.) 10,04 10,185 10,185 10,185 10,231 10,231 10,231 10,231 10,231 10,231 10,231 10,231 10,231 10,231 10,231 10,237 10,203 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,003 10,005 10,003 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005 10,005		HCS ^m Streets Relia	



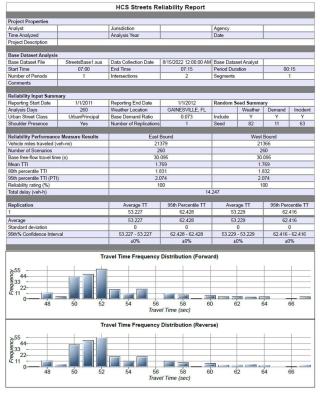
View Results of the Analysis

1. After editing all the necessary inputs and generating scenarios, results of the analysis can be found in the form of tables on the Events and Summary pages, and in the form of reports on the Report page.





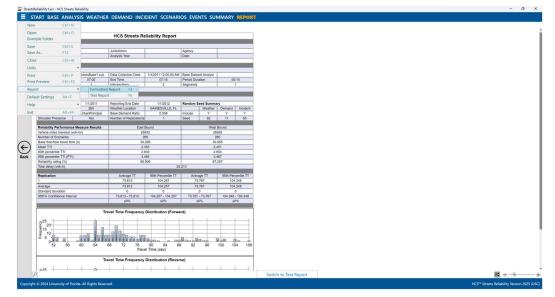
- 2. There are two options for reports: Formatted and Text
 - a. Formatted reports show the most important results in a presentable format.



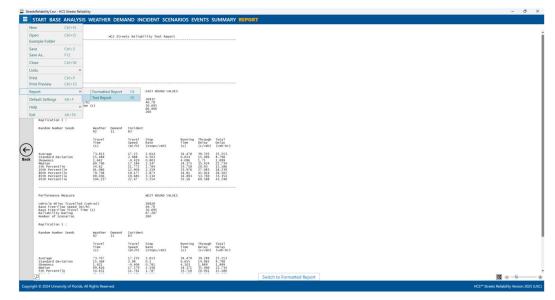
b. Text reports show a more detailed analysis in plain text.

		HCS Stre	ets Reliab	ility Text Report				
Project Properties								
Analyst								
Jurisdiction								
Agency								
Time Analyzed Analysis Year								
Date								
Project Description								
Performance Measure				EAST BOUND VALUE	s			
Vehicle Miles Travelled	(veh-mi)			21379				
Base Free-Flow Speed (mi Base Free-Flow Travel Tr	(h)			40.78				
Base Free-Flow Travel Ti	me (s)			30.095				
Reliability Rating Number of Scenarios				100				
Replication 1 :								
Random Number Seeds	Weather 82	Demand 11	Incident 63					
	Travel		Travel	Ston	Running	Through	Total	
	Time		Speed	Rate	Time	Delay	Delay	
	(=)		(mi/h)	(stops/veh)	(=)	(s/veh)	(veh-hr)	
Average	53,227		23.18 1.612 -1.129 23.608 19.659	1,695	33.652 0.591 6.103 33.556 33.186	19,576	14,247	
Standard Deviation	4.07		1.612	0.223	0.591	3.704	2.093	
Skewness Median	1.489		-1.129	1.426	6.103	1.512	1.032	
Sth Percentile	48,536		19,659	1.61/	33.556	18.415	13.83	
10th Percentile	49.878		20.587	1.509	33.334	16.503	12.305	
	55.117				33.776	21.371	15.376	
85th Percentile	57.202		24.329 24.486 25.286	1.936	33.855	23.383 27.375	16.458	
95th Percentile	62.428		25.286	2.172	34.087	27.375	18.416	
Performance Measure				WEST BOUND VALUE	s			
Vehicle Miles Travelled	(veh-mi)			21366				
Base Free-Flow Speed (mi Base Free-Flow Travel Tr	/h)			40.78				
Reliability Rating	me (s)			30.095				
Number of Scenarios				260				
Replication 1 :								
Random Number Seeds	Weather 82	Demand	Incident 63					
	Travel		Travel	Stop	Running	Through	Total	
	Time (s)		Speed (mi/h)	Rate (stops/veh)	Time (s)	Delay (s/veh)	Delay (veh-hr)	
Manufacture of the second								
Average Standard Deviation	53.229		23.179	1.695	33.652	19.577	14.247 2.093	
Skewness	1.493		-1.137	1,432	0.592	3.707	1.032	
Median	51.97		23.615	1.617	33.557	18.417	13.83	
5th Percentile 10th Percentile	48.542		19.663 20.561	1.463	33.188	15.369	11.061	
80th Percentile	55.143		20.561 24.329	1.509	33.336 33.776	21.394	12.305	
85th Percentile	57.204		24.488	1.936	33.855			
95th Percentile	62.416		25.283	2.175	34.087	27.383	18.416	
This Streets Reliabilit; 01:59:39.	y Text Report	was crea	ated in HC	S™ Streets Reliab	ility Vers	ion 2024	on October	16, 2023 a

- 3. The type of report displayed can be changed by using the main menu items, keyboard shortcuts, or toggle buttons found under the report
 - a. Main Menu Items
 - i. To switch to the Formatted Report, select *File > Report > Formatted Report* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen, hovering over "Report", and then selecting "Formatted Report".

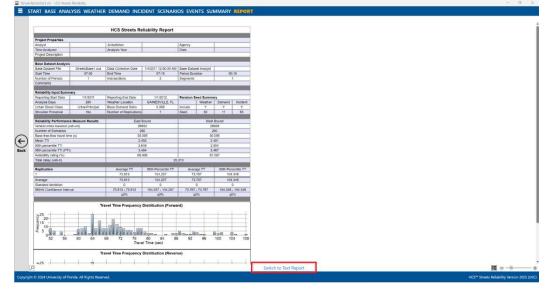


ii. To switch to the Text Report, select *File > Report > Text Report* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen, hovering over "Report", and then selecting "Text Report".



- b. Keyboard Shortcuts
 - i. Formatted Report: keyboard shortcut is "F4"
 - ii. Text Report: keyboard shortcut is "F6"
- c. Report Toggle Buttons
 - i. A toggle button is available at the bottom of the screen underneath the report.

ii. If the formatted report is currently being displayed, the toggle button will say "Switch to Text Report" which will allow you to display the text report if clicked.



iii. If the text report is currently being displayed, the toggle button will say "Switch to Formatted Report" which will allow you to display the formatted report if clicked.

			HCS Stre	ets Reliab	ility Text Report	t		
	Project Properties							
	Analyst Jurisdiction Apency Time Analyzed Analysis Year Date Project Description							
	Performance Measure				EAST BOUND VALU			
	Vehicle Hiles Travelled (Base Free-Flow Speed (min Base Free-Flow Travel Tim Reliability Rating Number of Scenarios	veh-mi) h) e (s)			26932 40,78 30,095 66,906 260			
	Replication 1 :							
	Randon Number Sends	Weather 82	Demand 13	Incident 63				
2		Travel Time (5)		Travel Speed (s1/h)	Stop Rate (stops/veh)	Running Tine (S)	Through Delay (s/veli)	Total Delay (veh-hr)
Back	Average Standard Deviation Skewnes Median Sih Percentie Dit Percentie Bit Percentie Sit Percentie Str Percentie	73,813 15,488 1,642 69,796 34,62 61,086 79,708 89,036 104,257		17.23 2.988 -0.419 17.584 11.772 12.904 19.177 19.685 22.47	2,614 0,503 2,547 1,784 2,159 3,134 3,554	34,478 0,654 4,096 34,375 33,718 33,718 33,976 34,81 34,893 35,16	39.335 15.089 1.71 35.424 20.93 27.083 45.014 53.769 69.588	25,213 8,798 1,899 72,754 15,186 18,299 28,502 13,354 43,248
	Performance Measure				WEST BOUND VALU			
	Vehicle Miles Travelled (Base Free-Floe Speed (mi/ Base Free-Floe Travel Tim Reliability Rating Number of Scenarios	veh-mi) h) e (s)			26928 40,78 30,095 67,287 260			
	Replication 1 :							
	Randon Number Seeds	weather 82	Demand 11	Incldent 63				
		Travel Time (s)		Travel Speed (mi/h)	Stop Rate (stops/veh)	Running Time (5)	Through bellay (s/veh)	Total Delay (veh-hr)
	Average Standard Deviation Skemess Median Sth Percentile	73,767 15,368 1,621 69,816 54,631		17,235 2,98 -0,406 17,579 11,761	2.613 0.5 0.781 2.548 1.787	$\begin{array}{c} 34.478 \\ 0.655 \\ 4.103 \\ 34.371 \\ 33.718 \end{array}$	19,289 14,965 1,689 35,466 20,941	25.213 8.798 1.809 22.734 15.186
	2						10.0100.00	1000000

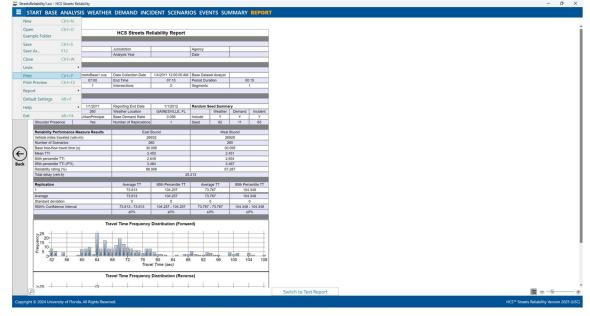
4. The magnification of the report currently being displayed can be changed using the zoom slider found at the bottom right-hand corner of the screen.

TART BASE ANAL	TRUCTURE INC.		DENT SCENAR	OS EVE	NTS SU	MMARY	REPOR
			oreiter oreentation	05 272	1115 50		and the
		HCS Streets Re	liability Report				
Project Properties		1		12			
Analyst		Jurisdiction Analysis Year		Agency Date			
Time Analyzed Project Description		Anarysis rear		Date			
Troject Descripson	6						_
Base Dataset Analysis							
Base Dataset File	StreetsBase1.xus	Data Collection Date	1/4/2011 12:00:00 AM				
Start Time	07:00	End Time	07:15	Period Dur		00;	
Number of Periods	1	Intersections	2	Segments	-	1	-
Comments					_		
Reliability Input Summ	ATV.						_
Reporting Start Date	1/1/2011	Reporting End Date	1/1/2012	Random S	eed Summ	TY	-
Analysis Days	200	Weather Location	GAINESVILLE, FL		Weather		Incident
Urban Street Class	UrbanPrincipal	Base Demand Ratio	0.058	Include	Y	Y	Y
Shoulder Presence	Yes	Number of Replications	1	Seed	82	11	63
Reliability Performance	Manager Barry	[Bound		14	Bound	
Vehicle miles traveled (w			932			Bound 1928	
Number of Scenarios	onemy		60			160	
Base free-flow travel time	e (s)		095			.095	
Mean TTI		2		-		451	
80th percentile TTI		2				654	
95th percentile TTI (PTI)			164			467	
Reliability rating (%)		66	906		67	.287	
Total delay (veh-h)			25	213	_	_	_
Replication		Average TT	95th Percentile TT	Aver	age TT	95th Pero	entile TT
1		73.813	104.257		767	104.3	
Average		73.813	104.257		767	104.3	348
Standard deviation		0	0		0	0	
95th% Confidence Interv	a	73.813 - 73.813	104.257 - 104.257	73.767	- 73.767	104.348 -	104.348
		±0%	±0%	2	0%	±0*	96
	Tra	avel Time Frequency	Distribution (Forwa	ird)			
25 20 515 10 52 52 52 52 56	60 64	68 72 76	80 84 8 el Time (sec)	1 00	Map. 96	周 _戸 岡 原 100 10-	4 108
COLUMN IN	Tr	avel Time Frequency	Distribution (Rever	se)			
>25	र्त्त -				-	1 1	-
2							
nt © 2024 University of Flo	orida. All Rights Resen	red.					

- a. To zoom in, drag the slider to the right; to zoom out, drag the slider to the left
- b. Clicking the plus (+) button will zoom in; clicking the minus (-) button will zoom out
- c. Holding down "ctrl" on the keyboard and scrolling up on the mouse wheel will zoom in; holding down "ctrl" on the keyboard and scrolling down on the mouse wheel will zoom out

Print a Report

- 1. There are four options for printing a report:
 - a. Selecting *File > Print* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Print"



b. Selecting *File > Print Preview* from the main menu; this can be found by selecting the three lines in the top left-hand corner of the screen and then selecting "Print Preview"

		- HCS Streets Re							
🔳 ST	TART BAS	SE ANALY	SIS WEATHE	R DEMAND INC	IDENT SCENARI	OS EVENT	rs sui	MMARY	REPOR
New		Ctrl+N							
Oper		Ctrl+O							
	mple Folder			HCS Streets R	eliability Report				
									1
Save	e	Ctrl+S		1		1.			
Save	e As	F12		Jurisdiction Analysis Year		Agency Date			
Close	se .	Ctrl+W		Pinarysis real		Late			
Units									1
Print		Ctrl+P	reetsBase1.xus 07:00	Data Collection Date End Time	1/4/2011 12:00:00 AM 07:15	Base Dataset / Period Duratio		00	15
Print	t Preview	Ctrl+F2	1	Intersections	2	Segments	m	00	
Repo	ort		•			1 oognoons			
Defe	ault Settings	Alt+F							
				1					
Help	p		260	Reporting End Date Weather Location	1/1/2012 GAINESVILLE, FL	Random Seed		Demand	Incident
Exit		Alt+F4	JrbanPrincipal	Base Demand Ratio	0.058	Include	Y	Y	Y
	Shoulder P	resence	Yes	Number of Replications		Seed	82	11	63
		Performance N es traveled (veh-	leasure Results		Bound 1932			Bound 1928	
	Number of		-mi)		160			1928	
~		low travel time (6)		.095			.095	
-)	Mean TTI				453			451	
/	80th percer				649			654	
ck		ntile TTI (PTI)			464	1		467	
	Reliability n			66	.906		67.	.287	
	Total delay	(veh-h)			25	213			
	Replication	0		Average TT	95th Percentile TT	Average	TT	95th Perc	entie TT
	1			73.813	104.257	73.761		104	348
	Average			73.813	104.257	73.761	7	104	348
	Standard de			0	0	0		0	
	95th% Con	fidence Interval		73.813 - 73.813	104.257 - 104.257	73.767 - 73		104.348	104.348
				±0%	±0%	±0%	-	±0	%
									_
			11	avel Time Frequency	Distribution (Forwa	ira)			
	25 20- 15 10- 15 5								-
	8 10		- 12	0.0-					
	L 5 -			P	Rem - mo	Incolle.	- 6		
	0-5	2 56	60 64	68 72 76	80 84 8	3 92	96	100 10	
				Trav	el Time (sec)				
			T	avel Time Frequency	Distribution (Rever	se)			
	>25 -		L	L L L			1	- I - I	1
14	0		1.1						
e									
pyright		iversity of Florid	da. All Rights Reser	ved.					

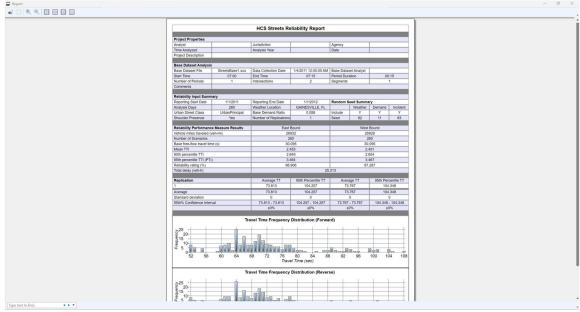
- c. Using keyboard shortcut "Ctrl+P" for Print
- d. Using keyboard shortcut "Ctrl+F2" for Print Preview

2. Print

a. Using Print will bring up a Print dialog box where you can select which printer to print to

Select Printer Microsoft Print to PDF Microsoft XPS Document W	riter
Comment:	> Preferences Find Printer
Page Range All C Selection C Current P C Pages:	age Collate

- 3. Print Preview
 - a. Using Print Preview will bring up a window where you can view how the report will look on paper before sending it to the printer



- b. The print icon in the toolbar found in the top left-hand corner can then be selected
- c. A print dialog box will pop up where you can select which printer to print to

General Select Printer Microsoft Print to PDF Microsoft XPS Document Writer OneNote for Windows 10	
< Status: Ready Location: Comment:	> Preferences Find Printer
Page Range C All C Selection C Pages:	Number of copies: 1

Glossary of Terms

50th Percentile TTI

The ratio of the 50th percentile highest travel time to the travel time at the base free-flow speed. This measure can be used for trend analysis and to demonstrate changes in performance resulting from an operational strategy, capacity improvement, or change in demand.

80th Percentile TTI

The ratio of the 80th percentile highest travel time to the travel time at the base free-flow speed. This measure has been found to be more sensitive to operational changes than the PTI, which makes it useful for comparison and prioritization purposes.

95th Percentile TTI

See Planning Time Index (PTI).

Agency

This field is provided to document the agency or company associated with this analysis or project.

Analysis Period

The time interval used for the performance evaluation. It can range from 15 min to 1 h, with longer durations in this range sometimes used for planning analyses. A shorter duration in this range is typically used for operational analyses.

Analysis Year

This field is provided to document the year for which the analysis is being performed.

Analyst

The field is provided to document the name of the analyst.

Annual Delay

Annual delay represents the average vehicle hours of travel or person hours of travel occurring minus what would occur under free-flow conditions. Delay is useful because economic analyses have a long history of monetizing delay.

Base Crash Frequency

The methodology requires the base crash frequency for each segment and for each intersection along the subject facility. The base crash frequency is an estimate of the expected crash frequency for the segment or intersection when no work zones are present or special events occur. The estimated should include all severity levels, including property-damage-only (PDO) crashes. Crash frequency is provided in units of crashes per year, regardless of the duration of the reliability reporting period.

Base File

The base file provides all the required input data for the urban street segments methodology described in HCM Chapter 18. The base file contains the required input data to execute HCM Chapter 17's reliability methodology. It consists of all the data needed to evaluate the base HCM facility methodology for a single study period, plus data that describe the variations in demand, weather, and so forth that occur over the course of the reliability reporting period, along with the frequency of a particular event's occurrence. The majority of the reliability-specific input data can be defaulted when they are not available locally, but the analyst is encouraged to supply facility-specific data whenever feasible.

The user has the option to load a base file or create a base file. Clicking on 'Load Base File' will open a dialog box to allow the user to select a Streets (*.xus) file for the user to open and load into the Streets Reliability program. Once loaded, a Street intersections and segments graph of the base file will be displayed on the page, along with general information. Clicking on the 'Create Base File' will open the HCS Streets program to allow the user to create a new base file for use in the Streets Reliability program.

Please also see *Data Depository*.

Crash Frequency Adjustment Factors for Inclement Weather

Inclement weather conditions can increase the likelihood of crashes. Crash frequency adjustment factors are required for the following conditions:

- Rainfall,
- Snowfall,
- Wet pavement (not raining), and
- Snow or ice on pavement (not snowing).

The crash frequency adjustment factor is the ratio of hourly crash frequency during the weather event to the hourly crash rate during clear, dry hours. It is computed by using one or more years of historical weather data and crash data for the region in which the subject facility is located.

The adjustment factor for a specific weather condition is computed from (*a*) the number of hours for which the weather condition exists for the year and (*b*) the count of crashes during those hours. An hourly crash frequency for the weather condition $f_{c,wea}$ is computed by dividing the crash count by the number of hours. By a similar technique, the hourly crash frequency is computed for dry pavement hours $f_{c,dry}$. The crash frequency adjustment factor for the weather condition *CFAF*_{wea} is computed as the ratio of the two frequencies (i.e., *CFAF*_{wea} = $f_{c,wea}/f_{c,dry}$).

The crash frequency adjustment factor includes consideration of the effect of the weather even on traffic volume (i.e., volume may be reduced because of bad weather) and on crash risk (i.e., wet pavement may increase the potential for a crash).

The following are the default values for the crash frequency adjustment factor of each weather condition:

- Rainfall: 2.0
- Wet pavement (not raining): 3.0
- Snowfall: 1.5
- Snow or ice on pavement (not snowing): 2.75

Crash Location Categories

The categorization of crashes by location is determined by using the definitions given in *Highway Safety Manual* (HSM) Section A.2.3, found in Appendix A of HSM Volume 2. The HSM states that "Intersection crashes include crashes that occur at an intersection (i.e., within the curb limits) and crashes that occur on the intersection legs and are intersection related. All crashes that are not classified as intersection or intersection-related crashes are considered to be roadway segment crashes."

Data Depository

Every reliability analysis requires a base dataset. This dataset describes the traffic demand, geometry, and signal timing conditions for the intersections and segments along the facility during the study period, when no work zones are present and no special events occurs.

Please also see *Base File*.

Date

This field is provided to document the date when the analysis is performed.

Day-of-Week Demand Ratios

The following HCM exhibit provides the default day-of-week demand ratios (ADT/AADT):

Day	Demand Ratio
Sunday	0.87
Monday	0.98
Tuesday	0.98
Wednesday	1.00
Thursday	1.03
Friday	1.15
Saturday	0.99

Source: Hallenbeck et al. (9).

See also Time Period Adjustment Factors.

Demand Change Factors

The three "demand change factors" account for a change in traffic demand due to weather conditions. One factor describes demand change during dry weather (by definition it has a values of 1.0). A second factor describes the demand change during a rain event. The third factor describes the demand change for a snow event. During a step of the methodology, the demand volume is multiplied by the demand change factor corresponding to the weather associated with a given analysis period. A factor less than 1.0 corresponds to a reduction in demand during the event.

Research indicates that urban street traffic demand tends to drop 15% to 30% during snow events. These motorists likely altered the start time of their commute or stayed home to avoid the bad weather. In the absence of local data, a default value of 0.80 may be used for snow events.

The research is less clear on the effect of rain on traffic demand. The effect of rain may vary with the trip purpose and the annual frequency of rain events in the vicinity of the subject facility. A default factor values of 1.0 is recommended for rain events. These default values are summarized in the following HCM exhibit:

Input Data Item	Default Value		
Demand change factor for dry weather	1.00		
Demand change factor for rain event	1.00		
Demand change factor for snow event	0.80		
Pavement runoff duration for snow event	0.5 h		

See Duration of Pavement Runoff for the input data item in the last row.

Demand Pattern Data

Demand pattern data are used by the reliability method to adjust the demand volumes in the base and alternative datasets to reflect demands during all the other time periods in the reliability reporting period. The data include (a) adjustment factors to account for demand variation by hour of day, day of week, and month of year; and (b) adjustment factors to account for change in traffic demand due to weather conditions.

Details per page

A drop down selection is provided to indicate how many scenario results to show on the page.

Duration of Pavement Runoff

The duration of pavement runoff for a snow event is required. It is defined as the period of time after the snow stops falling that snowpack (or ice) covers the pavement. After this time period elapses, the pavement is exposed and drying begins. This time is likely a function traffic volume, snow depth, and agency snow removal capabilities. An appropriate local value should be established for the subject facility if that is possible. If such a value is not available, the default value provided in the last row of the HCM exhibit can be used. See *Demand Change Factors* for the exhibit.

Facility Evaluation

The facility evaluation stage consists of two tasks that are repeated in sequence for each analysis period. The analysis periods are evaluated in chronological order.

First, the dataset associated with a given analysis period is evaluation by using the urban street facility methodology. The performance measures output by the methodology are then archived.

Second, the dataset associated with the next analysis period is modified, if necessary, on the basis of the results of the current analysis period. Specifically, the initial queue input value for the next analysis period is set equal to the residual queue for the current analysis period.

Failure or On-Time Measures

The percent of trips (or percent of time) with space mean speeds above (on time) or below (failure) one or more target values (e.g., 35, 45, and 50 mi/h; or 56, 72, 80 km/h in metric). These measures address how often trips succeed or fail in achieving a desired travel time or speed.

Functional Class

The functional class of the subject facility is a required input when the analyst chooses to use the default time period adjustment factors. These factors are used for estimating the traffic volume during each of the various scenarios that make up the reliability reporting period.

The following functional classes are considered:

- Urban expressway,
- Urban principal arterial street, and

• Urban minor arterial street.

An urban principal arterial street emphasizes mobility over access. It serves intra-area travel, such as that between a central business district and outlying residential areas or that between a freeway and an important activity center. It is typically used for relatively long trips within the urban area or for through trips that enter, leave, or pass through the city. An urban minor arterial street provides a balance between mobility and access. It interconnects with and augments the urban principal arterial street system. It is typically used for trips of moderate length within relatively small geographic areas.

The methodology addresses roadways that (a) have one of the aforementioned classes and (b) do not have full access control. If a roadway has full access control then it is considered to be a freeway and the analyst should use the Freeway methodology.

Hour-of-Day Demand Ratios

Hour	Expre	ssway	Principa	Arterial	Minor Arterial			
Starting	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend		
Midnight	0.010	0.023	0.010	0.023	0.010	0.028		
1 a.m.	0.006	0.015	0.006	0.014	0.006	0.023		
2 a.m.	0.004	0.008	0.005	0.010	0.004	0.021		
3 a.m.	0.004	0.005	0.005	0.006	0.002	0.008		
4 a.m.	0.007	0.005	0.009	0.006	0.002	0.005		
5 a.m.	0.025	0.009	0.030	0.010	0.007	0.005		
6 a.m.	0.058	0.016	0.054	0.017	0.023	0.011		
7 a.m.	0.077	0.023	0.071	0.024	0.067	0.018		
8 a.m.	0.053	0.036	0.058	0.035	0.066	0.030		
9 a.m.	0.037	0.045	0.047	0.046	0.054	0.048		
10 a.m.	0.037	0.057	0.046	0.056	0.051	0.054		
11 a.m.	0.042	0.066	0.050	0.054	0.056	0.057		
Noon	0.045	0.076	0.053	0.071	0.071	0.074		
1 p.m.	0.045	0.073	0.054	0.071	0.066	0.071		
2 p.m.	0.057	0.074	0.063	0.072	0.060	0.069		
3 p.m.	0.073	0.075	0.069	0.073	0.062	0.067		
4 p.m.	0.087	0.075	0.072	0.073	0.063	0.071		
5 p.m.	0.090	0.071	0.077	0.073	0.075	0.068		
6 p.m.	0.068	0.063	0.062	0.063	0.070	0.067		
7 p.m.	0.049	0.051	0.044	0.052	0.053	0.056		
8 p.m.	0.040	0.043	0.035	0.044	0.044	0.049		
9 p.m.	0.037	0.037	0.033	0.038	0.035	0.040		
10 p.m.	0.029	0.032	0.026	0.033	0.033	0.035		
11 p.m.	0.019	0.023	0.021	0.026	0.019	0.024		

The following HCM exhibit provides the default hour-of-day demand ratios (ADT/AADT):

Source: Hallenbeck et al. (9).

See also *Time Period Adjustment Factors*.

Incident Clearance Time

The Time from the arrival of the first response vehicle to the time when the incident and service vehicles no longer directly affect travel on the roadway. This time varies by incident location, type, and severity. Clearance times are weather-dependent. Incident clearance times are reported in minutes and for street location (segment or intersection), incident type (crash or noncrash), lane location (shoulder, one lane, two or more lanes), severity

(fatal/injury or PDO), and weather condition (dry, rainfall, wet pavement, snowfall or snow or ice on pavement) (96 total values).

				Clearance	on (min)		
Street Location	Event	Lane Location	Severity"	Dry	Rain- fall	Wet Pavement	Snow Or Ice ^b
	Type		0.200 - 0				
Segment	Crash	One lane	FI	56.4	42.1	43.5	76.7
		2.1	PDO	39.5	28.6	29.7	53.7
		2+ lanes	FI	56.4	42.1	43.5	76.7
		_	PDO	39.5	28.6	29.7	53.7
		Shoulder	FI	56.4	42.1	43.5	76.7
	si a		. PDO	39.5	28.6	29.7	53.7
	Non-	One lane	Breakdown	10.8	5.6	5.7	14.7
	crash		Other	6.7	2.4	2.8	9.1
		2+ lanes	Breakdown	10.8	5.6	5.7	14.7
			Other	6.7	2.4	2.8	9.1
		Shoulder	Breakdown	10.8	5.6	5.7	14.7
			Other	6.7	2.4	2.8	9.1
Signalized	Crash	One lane	FI	56.4	42.1	43.5	76.7
intersection			PDO	39.5	28.6	29.7	53.7
		2+ lanes	FI	56.4	42.1	43.5	76.7
			PDO	39.5	28.6	29.7	53.7
		Shoulder	FI	56.4	42.1	43.5	76.7
			PDO	39.5	28.6	29.7	53.7
	Non-	One lane	Breakdown	10.8	5.6	5.7	14.7
	crash		Other	6.7	2.4	2.8	9.1
		2+ lanes	Breakdown	10.8	5.6	5.7	14.7
			Other	6.7	2.4	2.8	9.1
		Shoulder	Breakdown	10.8	5.6	5.7	14.7
			Other	6.7	2.4	2.8	9.1

Default values for incident clearance time are provided in the following HCM exhibit:

Source: Zegeer et al. (1).

Notes: "FI = fatal or injury crash; PDO = property-damage-only crash.

^b Applies to snowfall and to snow or ice on pavement (but not snowing).

Incident Detection Time

The time period starting with the occurrence of the incident and ending when the response officials are notified of the incident. Incident detection time is reported in minutes. The default incident detection time for all weather conditions is 2.0 minutes.

Incident Location Distribution

The incident location distribution is used by the incident generation procedure to assign incident to specific locations on the facility. Research indicated that this distribution varies by incident location, type, and severity. The following incident proportions are required:

- Proportion of crash and noncrash incidents by street location (segment or intersection) (four total values); proportions should total 1.000 for a given street location;
- Proportion of shoulder, one-lane, and two-or-more-lane incidents by street location and event type (crash or noncrash) (12 total values); proportions should total 1.000 for a given street location and event type

combination; a 0.000 proportion should be assigned to values involving a shoulder location if no shoulders exist on the facility;

- Proportion of fatal/injury and PDO crashes by street location and lane location (12 total values); proportions should total 1.000 for a given street location and lane location combination; and
- Proportion of breakdown and other noncrash incident by street location and lane location (12 total values); proportions should total 1.000 for a given street location and lane location combination.

The four proportions identified in the previous list are multiplied together to obtain the desired incident location distribution factors. One factor is obtained for each combination of street location, incident type, incident location, and incident severity. The computed factors should total 1.000 for a given street location.

The default incident distribution with shoulder presence is provided in the following HCM exhibit:

	Incident Type		Incident Location		Incident Severity		
Street		Pro-	Lanes	Pro-		Pro-	Joint
Location	Туре	portion	Affected	portion	Severity"	portion	Proportion
Segment	Crash	0.358	1 lane	0.335	FI	0.304	0.036
		CALLSON AND DAY			PDO	0.696	0.083
			2+ lanes	0.163	FI	0.478	0.028
					PDO	0.522	0.030
			Shoulder	0.502	FI	0.111	0.020
					PDO	0.889	0.160
1	Non-	0.642	1 lane	0.849	Breakdown	0.836	0.456
	crash	000000000000000000000000000000000000000		000.000	Other	0.164	0.089
			2+ lanes	0.119	Breakdown	0.773	0.059
					Other	0.227	0.017
			Shoulder	0.032	Breakdown	0.667	0.014
					Other	0.333	0.007
		22	8	2	12	Total:	1.000
Signalized	Crash	0.310	1 lane	0.314	FI	0.378	0.037
intersection				10000000000	PDO	0.622	0.061
			2+ lanes	0.144	FI	0.412	0.018
					PDO	0.588	0.026
			Shoulder	0.542	FI	0.109	0.018
				Construction of the	PDO	0.891	0.150
	Non-	0.690	1 lane	0.829	Breakdown	0.849	0.486
	crash			1000000000	Other	0.151	0.086
			2+ lanes	0.141	Breakdown	0.865	0.084
			100		Other	0.135	0.013
			Shoulder	0.030	Breakdown	0.875	0.018
				2003 A (157) E (17	Other	0.125	0.003
					_	Total:	1.000

Source: Zegeer et al. (1).

Note: "FI = fatal or injury crash; PDO = property-damage-only crash; other = not breakdown (e.g., debris).

The default incident distribution without shoulder presence is provided in the following HCM exhibit:

	Incident Type		Incident Location		Incident Severity		
Street Location	Туре	Pro- portion	Lanes Affected	Pro- portion	Severity [®]	Pro- portion	Joint Proportion
Segment	Crash	0.358	1 lane	0.837	FI	0.304	0.091
		1.000			PDO	0.696	0.209
			2+ lanes	0.163	FI	0.478	0.028
2		5			PDO	0.522	0.030
	Non-	0.642	1 lane	0.881	Breakdown	0.836	0.473
	crash				Other	0.164	0.093
			2+ lanes	0.119	Breakdown	0.773	0.059
					Other	0.227	0.017
						Total:	1.000
Signalized	Crash	0.310	1 lane	0.856	FI	0.378	0.100
intersection					PDO	0.622	0.165
			2+ lanes	0.144	FI	0.412	0.018
				A 1004 30 402 50 75	PDO	0.588	0.026
	Non-	0.690	1 lane	0.859	Breakdown	0.849	0.503
	crash	1053445540543			Other	0.151	0.089
			2+ lanes	0.141	Breakdown	0.865	0.084
					Other	0.135	0.013
		57				Total:	1.000

Source: Zegeer et al. (1).

Note: "FI = fatal or injury crash; PDO = property-damage-only crash; other = not breakdown (e.g., debris).

Incident Query

For event predictions, the user can set parameters to check for incidents "starting" at the query hour. The date, time, and segment/intersection must be specified. Then a 'Query' button can be selected, which will display any incidents for that query.

Incident Response Time

The time period from the receipt of incident notification by officials to the time the first response vehicle arrives at the scene of the incident. This time will likely vary among jurisdictions and facilities, depending on the priority placed on street system management and the connectivity of the street system. Response times are weather-dependent. Incident response times are reported in minutes and for five weather categories (dry, rainfall, wet pavement, snowfall, snow or ice on pavement).

The following are the default response times for the five weather categories:

- Clear, dry: 15.0 min
- Rainfall: 15.0 min
- Wet pavement (not raining): 15.0 min
- Snowfall: 20.4 min
- Snow or ice on pavement (not snowing): 20.4 min

Jurisdiction

This field is provided to document any jurisdiction convention or project related information.

Mean TTI

The ratio of the average travel time to the travel time at the base free-flow speed. This measure can be used for the same purposes as the 50th percentile TTI. However; the mean TTI will typically have somewhat higher values than the 50th percentile TTI because of the influence of rare, very long travel times in the distribution.

Misery Index

This measure is useful as a descriptor of near-worst-case conditions on rural facilities.

Month-of-Year Demand Ratios

The following HCM exhibit provides the default month-of-year demand ratios (ADT/AADT):

Month	Expressway	Principal Arterial	Minor Arterial	
January	0.802	0.831	0.881	
February	0.874	1.021	0.944	
March	0.936	1.030	1.016	
April	0.958	0.987	0.844	
May	1.026	1.012	1.025	
June	1.068	1.050	1.060	
July	1.107	0.991	1.150	
August	1.142	1.054	1.110	
September	1.088	1.091	1.081	
October	1.069	0.952	1.036	
November	0.962	0.992	0.989	
December	0.933	0.938	0.903	

Source: Hallenbeck et al. (9).

See also Time Period Adjustment Factors.

Nearest City

The nearest city is a required input when the analyst chooses to use the default weather data. The analyst selects from 284 U.S. cities. Please see *Regional Weather* for additional information.

Please see *Regional Weather* for additional information.

Number of Replications

The number of replications indicates the number of times each scenario is generated to minimize any bias that rare events may cause.

Planning Time Index (PTI)

The ratio of the 95th percentile highest travel time to the travel time at the base free-flow speed. This measure is useful for estimating how much extra time travelers must budget to ensure an on-time arrival and for describing near-worst-case conditions on urban facilities. Also 95th Percentile TTI.

Project Description

This field is provided for the user to document the analysis with any information for identification purposes.

Random Number Seed

A random number seed is used with the Monte Carlo methods in the reliability methodology. A seed is used so that the sequence of random events can be reproduced. Unique seed numbers are separately established for weather events, demand variation, and incidents. For a given set of three seed numbers, a unique combination of weather events, demand levels, and incidents is estimated for each analysis period in the reliability reporting period.

Regional Weather

The nearest city is a required input when the analyst chooses to use the default weather data. The analyst selects from 284 U.S. cities. A search bar and/or drop down menu is provided for the user to select a city. Once a city is selected, the 'Load Regional Weather' button needs to be selected for city-specific data to be applied to the weather event statistics table. If certain values need to be overridden, the user has the option to edit the data. However, if values need to be reset, a 'Reset to Regional Default' button is provided to reapply the city-specific values. See *Weather Event Statistics* for more information.

Reliability Rating

The percentage of vehicle-miles traveled on the facility associated with a TTI less than 2.50. This threshold approximated the point beyond which urban street facility travel times become much more variable (i.e., unreliable).

Reliability Reporting Period

The specific days over which reliability is to be computed, for example, all weekends in a year. A typical reporting period for a reliability evaluation is 6 to 12 months. The period is specified by start and end dates as well as by the days of week being considered. The reliability reporting period is used with the study period to describe the temporal representation of the performance measure fully (e.g., average travel time on weekdays from 4:00 to 6:00 p.m. for the current year).

Replication Selection

A drop down selection is provided to indicate which results to show based on the replication number.

Running Time

The time a vehicle spends in motion.

Scenario

A unique combination of traffic demand, capacity, geometry, and traffic control conditions. It can represent one or more analysis periods, provided that all periods have the same combination of demand, capacity, geometry, and control.

Scenario Dataset Generation

The scenario dataset generation procedure uses the results from *Scenario Generation*, *Weather Event Generation*, *Traffic Demand Variation Generation*, and *Traffic Incident Generation* to develop one HCM dataset for each analysis period in the reliability reporting period. Each analysis period is considered to be one scenario. The base dataset is modified to reflect conditions present during a given analysis period. Traffic volumes are modified at each intersection and driveway. Saturation flow rates are adjusted at intersections influenced by an incident or a weather event, and speed are adjusted for segments influenced by an incident or a weather event. Dates and times represent a common basis for tracking events and conditions from one analysis period to the next.

Scenario Generation

The scenario generation stage consists of four sequential procedures: (a) weather event generation, (b) traffic demand variation generation, (c) traffic incident generation, and (d) scenario dataset generation. Each procedure generates in chronological order the set of analysis periods that make up the reliability reporting period.

Checkboxes are provided to indicate whether or not to include weather, demand, and/or incidents when generating scenarios. The user can also choose whether or not to randomize demand volume for every analysis period. Once these are specified, along with the random seed numbers and the desired number of replications, the user can click the 'Generate Scenarios' button to start the scenario generation process.

Semi-Standard Deviation

A one-sided standard deviation, with the reference point at the base free-flow speed instead of the mean. It provides the variability distance from free-flow conditions.

Shoulder Presence

The indication of the presence of outside (i.e., right-side) shoulders is a required input when the analyst chooses to use the default incident location data. This input is specified for the facility.

For a shoulder to be considered present, it must be wide enough to store a disabled vehicle (so that the vehicle does not block traffic flow in the adjacent traffic lane). If on-street parking is allowed, the analyst will need to determine whether occupancy would need to be less than 30% to provide reasonable assurance of the opportunity to move a disabled vehicle from the through lanes to an open stall.

Special Event

Short-term events that produce intense traffic demands on a facility for limited periods of time. These demands may be addressed by temporary changes in the facility's geometry or traffic control characteristics, or both. Example special events include major sporting events, concerts, and festivals.

Standard Deviation

The standard statistical measure.

Stop Rate

The average number of full stops per vehicle. A *full stop* is defined to occur at a signalized intersection when a vehicle slows to zero (or a crawl speed, if in queue) as a consequence of the change in signal indication from green to red, but not necessarily in direct response to an observed red indication. A *full stop* is defined to occur at an unsignalized intersection when a vehicle slows to zero (or a crawl speed, if in queue) as a consequence of the control device used to regulate the approach.

Study Period

The time interval (within a day) that is represented by the performance evaluation. It consists of one or more consecutive analysis periods. A typical study period is 1.0 to 6.0 h in duration and is stated to represent specific times of the day and days of the week (e.g., weekdays from 4:00 to 6:00 p.m.). If oversaturated conditions occur during the study period, at least the first analysis period should be undersaturated. The maximum study period duration is 24 h.

The geometric design elements and traffic control features of the facility must be unchanged during the study period. Thus, the intersection lane assignments and signal timing plan should be the same throughout the study period. In addition, if the directional distribution of traffic volume changes significantly during the day, separate study periods should be established for each time period where the directional distribution is relatively constant.

Study Section

The length of facility over which reliability is to be computed. Since reliability is computed through traffic only, the length of the facility should not be so long that through traffic is a low percentage of total traffic on the facility. The length of facility to be evaluated should be less than the distance a vehicle traveling at the average speed can achieve in 15 min.

Through Delay

Through delay represents the sum of two delay sources. One source is the delay due to the traffic control at the boundary intersection. It is called control delay. The other delay is that due to the negotiation of intersection geometry, such as curvature. It is called geometric delay.

Time Analyzed

This field is provided to document the time frame of the analysis as morning peak, afternoon peak, existing conditions, future projections, etc.

Time Period Adjustment Factors

The methodology requires day-of-week and month-of-year factors, expressed as ratios of the average day-of-week and average month-of-year demand. Also required are hour-of-day factors expressed as a percentage of AADT. The specific factors needed are described in the following list.

- Hour-of-day factors for each hour of the study period (up to 24, but typically six or fewer in practice),
- Day-of-week factors for each day included as part of the reliability reporting period (up to seven), and
- Month-of-year factors for each month included as part of the reliability reporting period (up to 12).

Default hour-of-day, day-of-week, and month-of-year traffic demand adjustment factors are given in HCM exhibits. The factors should be replaced with data from permanent traffic count stations whenever available for streets that are similar to the subject facility and located near it. See also *Hour-of-Day Demand Ratios*, *Day-of-Week Demand Ratios*, and *Month-of-Year Ratios*.

Traffic Counts

The date and time of the traffic count represented in the base dataset is a required input. If the base dataset demands are computed by using planning procedures, they are assumed to represent average day volumes. In this case, a date does not need to be provided by the analyst. However, the time of day for which the estimated volumes apply is still needed. The date and time of the traffic count represented in an alternative dataset is also a required input.

Traffic Demand Variation Generation

The traffic demand variation procedure identifies the appropriate traffic demand adjustment factors for each analysis period in the reliability reporting period. A set of factors accounts for systematic demand variation by hour of day, day of week, and month of year.

Traffic Incident Generation

The traffic incident procedure generates incident dates, times, and durations. It also determines incident types (i.e., crash or noncrash), severity levels, and locations on the facility. Location is defined by the intersection or segment on which the incident occurs and whether the incident occurs on the shoulder, in one lane, or in multiple lanes. The procedure incorporates weather and traffic demand variation information from the previous procedures in generating incidents.

Travel Speed

The ratio of segment length to through-movement travel time.

Travel Time

Travel time is a versatile measure, since it can be monitored over time (for trend analysis), monetized (in calculating benefits), and used in the calculation of other measures (e.g., delay), Facility lengths usually remain the same over time, allowing apples-to-apples comparisons of travel times estimated for a facility in different years or under different circumstances. Travel time is measured in minutes. Travel time is computed as the sum of segment running time and through-movement control delay at the downstream boundary intersection.

Travel Time Index (TTI)

The ratio of the actual travel time on a facility to the travel time at the base free-flow speed.

Weather Event Generation

The weather event procedure generates rain and snow events during the reliability reporting period. The dates, times, types (i.e., rain or snow), and durations of severe weather events are generated. These data are used to adjust the saturation flow rate and speed of facility traffic for each analysis period. The procedure also predicts the time after each weather event that the pavement remains wet or covered by snow or ice, since the presence of these conditions influences running speed and intersection saturation flow rate.

Weather Event Statistics

A reliability evaluation requires the weather data identified in the following list. These data represent averages by month of year for a recent 10-year period

- Total normal precipitation (in., or cm. in metric),
- Total normal snowfall (in., or cm. in metric),
- Number of days with precipitation of 0.01 in. (or 0.025 cm. in metric) or more (days),
- Normal daily mean temperatures (°F, or °C in metric), and
- Precipitation rate (in./h, or cm./h in metric).

Default values for the aforementioned statistics are available from the National Climatic Data Center (NCDC) for 284 locations in the United States.

Index

#

50th Percentile TTI 45 80th Percentile TTI 45 95th Percentile TTI 45

Α

Acknowledgements 6 Agency 45 Analysis 9 Analysis Period 45 Analysis Year 45 Analyst 45 Annual Delay 45

В

Base Dataset 9 Base Crash Frequency 46 Base File 46

С

Close 6 Close a File 24 Crash Frequency Adjustment Factors for Inclement Weather 46 Crash Location Categories 47 Create a New File 16

D

Data Depository 47 Date 47 Day-of-Week Demand Ratios 47 Default Settings 8 Demand 10 Demand Change Factors 47 Demand Pattern Data 48 Details per page 48 Duration of Pavement Runoff 48

Е

Edit the Default Settings 26 Events 12 Exit 9 Exit the Program 24

F

Facility Evaluation 48 Failure or On-Time Measures 48 Functional Class 48

G

General Controls 8 Generate Scenarios 32 Getting Started 7 Glossary of Terms 45

Н

HCM Chapter 17 10 Help 8 Hour-of-Day Demand Ratios 49 How To 16

I

Incident 11 Incident Clearance Time 49 Incident Detection Time 50 Incident Location Distribution 50 Incident Query 52 Incident Response Time 52 Introduction 1

J

Jurisdiction 52

L

License Agreement 1 Load a Base File 27 Load Regional Weather 30

Μ

Mean TTI 53 Menu Items 8 Misery Index 53 Month-of-Year Demand Ratios 53

Ν

Nearest City 53 New 8 Number of Replications 53

0

Open 8 Open an Existing File 18 Operational Data 11

Ρ

Planning Time Index (PTI) 53 Print 8 Print a Report 42 Print Preview 8 Project Description 53

R

Random Number Seed 54 Regional Weather 54 Reliability Rating 54 Reliability Reporting Period 54 Replication Selection 54 Report 8 Running Time 54

S

Save 8 Save a File 22 Save As... 8 Scenario 54 Scenario Dataset Generation 54 Scenario Generation 55 Scenarios 11 Semi-Standard Deviation 55 Shoulder Presence 55 Special Event 55 Standard Deviation 55 Stop Rate 55 Study Period 55 Study Section 56 Summary 13 System Requirements 7

Т

Through Delay 56 Time Analyzed 56 Time Period Adjustment Factors 56 Trademarks and Copyrights 6 Traffic Counts 56 Traffic Demand Variation Generation 56 Traffic Incident Generation 56 Travel Speed 57 Travel Time 57 Travel Time Index (TTI) 57

U

Urban Streets Reliability 10 Urban Streets Reliability Report 15

V

View Results of the Analysis 37

W

Weather 10 Weather Event Generation 57 Weather Event Statistics 57