

Interactive Highway Safety Design Model (IHSDM)

Traffic Analysis Module (TAM) User's Manual

Developed for
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1. Introduction

The Traffic Analysis Module uses the TWOPAS traffic simulation model to estimate traffic quality-of-service measures for an existing or proposed design under existing and projected future traffic. It is particularly useful during project scoping and preliminary engineering to evaluate the operational performance of design alternatives, including realignment, cross-section changes, and the addition of passing lanes or climbing lanes.

The Traffic Analysis Module (TAM) User's Manual is a reference for the mechanics of using the TAM software graphical user interface.

For background information on the Traffic Analysis Module, refer to the Traffic Analysis Module (TAM) User's Manual .

1.1 Traffic Analysis Module Stand-Alone Graphical User Interface

This is the initial window for the TAM when called directly from the command line (i.e., the stand-alone version). The **Traffic Analysis Module** frame includes the following menu items: File, Edit, View and Help. The **Traffic Analysis Module** frame includes the following toolbar buttons: Change Project, Change Analysis, Edit Highway Data, Edit User Properties, Edit User Defaults, View Current Analysis Report, View Analysis Report Index and Search Master Index. The **Traffic Analysis Module** frame includes the following tabs: Project/Analysis, Attributes and Evaluation. The **Traffic Analysis Module** frame includes the following statusbar fields: Progress Bar and Progress Bar Text.

1.1.1 Menu Items

The Traffic Analysis Module Frame includes the following menu items:

- **File** - This menu includes menu items to change the current project and/or analysis, import data and exits the Traffic Analysis Module. The **File** menu includes the following menu items: Change Current Project, Change Current Analysis, Run the Analysis, Import Highway Data and Exit TAM.
 - **Change Current Project** - This menu item brings up a dialog to change the current project. From this dialog, you can edit project attributes. For additional information, see Project, Analysis and Master Highway Operations in the Running IHSDM Software Manual.
 - **Change Current Analysis** - This menu item brings up a dialog to change the current analysis. From this dialog, you can edit analysis attributes and change the master highway associated with the analysis. For additional information, see Project, Analysis and Master Highway Operations in the Running IHSDM Software Manual.
 - **Run the Analysis** - This menu item starts the TAM analysis for the specified highway and analysis attributes.
 - **Import Highway Data** - This menu item invokes the Data Import Utility to import a file such as a highway file. The **Import Highway Data** menu includes the following menu items: IHSDM Highway Data and TWOPAS Input Data.
 - **IHSDM Highway Data** - This menu item imports either IHSDM CSV or LandXML highway data files.
 - **TWOPAS Input Data** - This menu item imports TWOPAS input data.

- **Exit TAM** - This menu item saves the data in the window and then exits the Traffic Analysis Module.
- **Edit** - This menu includes menu items to edit highway datasets, edit user properties and to complete an IHSDM program report. The **Edit** menu includes the following menu items: Edit/View Highway Data, Edit Intersections, Manage Highway Datasets, Edit User Properties, Edit Defaults and Problem Report/Change Request.
 - **Edit/View Highway Data** - This menu includes menu items to edit either the current or selected highway dataset. For additional information, see Editing Highway Elements. The **Edit/View Highway Data** menu includes the following menu items: Select Master Highway, Select from Available Highways, Create Highway Data and Clone Highway Data.
 - **Select Master Highway** - This menu item brings up a new window to edit the master highway associated with the current analysis.
 - **Select from Available Highways** - This menu item brings up a dialog to select a highway dataset by name and then launches the edit/view highway data editor with the selected highway.
 - **Create Highway Data** - This menu item brings up a dialog to create a new highway dataset name and then launches the edit/view highway data editor.
 - **Clone Highway Data** - This menu item brings up a dialog to select a highway dataset by name and creates a new name for the cloned highway dataset.
 - **Edit Intersections** - This menu item invokes the intersection data editor dialog to allow intersection data associated with this highway dataset to be edited. For additional information, see IHSDM Intersection Model.
 - **Manage Highway Datasets** - This menu item launches the highway dataset list manager. The current analysis must be closed to perform this operation. Highway dataset list management operations include renaming and deleting highway datasets.
 - **Edit User Properties** - This menu item brings up a dialog to edit the IHSDM user properties. For additional information, see User Properties in the User Properties and Defaults Manual.
 - **Edit Defaults** - This menu item brings up a dialog to edit the default values to the IHSDM modules.
 - **Problem Report/Change Request** - This menu contains menu items to create a new PR/CR or edit an existing PR/CR. The **Problem Report/Change Request** menu includes the following menu items: Create New PR/CR, Edit Existing PR/CR and List Existing PR/CR .
 - **Create New PR/CR** - This menu item brings up a dialog to complete a new IHSDM problem report/change request. For additional information, see Creating an IHSDM Problem Report/Change Request.
 - **Edit Existing PR/CR** - This menu item brings up a file chooser dialog to select a file. If selected, the file will be read as an IHSDM problem report/change request and displayed. For additional information, see Creating an IHSDM Problem Report/Change Request.

- **List Exiting PR/CR** - This menu item brings up browser with a listing of the current PR/CR issues at the development website. For additional information, see Creating an IHSDM Problem Report/Change Request.
- **View** - This menu includes menu items to display and clear the analysis log and analysis report. The **View** menu includes the following menu items: View Analysis Log, Start a New Analysis Report, View Current Analysis Report, View Analysis Report Index, Clear Analysis Log, Clear Analysis Report and Open Saved Graph.
 - **View Analysis Log** - This menu item launches the user's specified text editor with the current analysis log.
 - **Start a New Analysis Report** - This menu item causes a new analysis report file to be started.
 - **View Current Analysis Report** - This menu item launches the user's specified analysis report display tool with the current analysis report.
 - **View Analysis Report Index** - This menu item launches the user's specified HTML browser to display an index of analysis reports available within the current analysis.
 - **Clear Analysis Log** - This menu item clears (erases) the current analysis log.
 - **Clear Analysis Report** - This menu item clears (erases) the current analysis report.
 - **Open Saved Graph** - This menu item invokes a dialog to open and display a previously saved graph. The graph file may be created from a DCM, CPM, DVM or TAM analysis.
- **Help** - This menu includes menu items to display various help documents and the module's about box. The **Help** menu includes the following menu items: IHSDM User's Manual, TAM User's Manual, TAM Engineer's Manual, User Documentation Summary, Master Index, Search Master Index and About TAM.
 - **IHSDM User's Manual** - This menu item launches the HTML browser to display the IHSDM User's Manual.
 - **TAM User's Manual** - This menu item launches the HTML browser and display the TAM User's Manual.
 - **TAM Engineer's Manual** - This menu item launches the HTML browser and display the TAM Engineer's Manual.
 - **User Documentation Summary** - This menu item launches the HTML browser to display the **User Documentation Summary**. The summary contain links to all the user documentation.
 - **Master Index** - This menu item launches the HTML browser to display the **IHSDM Documentation Master Index**.
 - **Search Master Index** - This menu item launches a dialog to allow a keyword search of the **IHSDM Documentation Master Index**.
 - **About TAM** - This menu item displays the TAM 'about box' dialog which contain information about the release and runtime environment.

1.1.2 Toolbar

The Traffic Analysis Module Frame includes the toolbar buttons listed below.

Change Project - This button item brings up a dialog to change the current project. From this dialog, you can edit project attributes. For additional information, see Project, Analysis and Master Highway Operations in the Running IHSDM Software Manual.

Change Analysis - This button brings up a dialog to change the current analysis. From this dialog, you can edit analysis attributes and change the master highway associated with the analysis. For additional information, see Project, Analysis and Master Highway Operations in the Running IHSDM Software Manual.

Edit Highway Data - This toolbar button starts the Edit/View Highway Data editor for the master highway. For additional information, see Editing Highway Elements.

Edit User Properties - This toolbar button brings up a dialog to edit the IHSDM user properties. For additional information, see User Properties in the User Properties and Defaults Manual.

Edit User Defaults - This button brings up a dialog to edit the default values to the IHSDM modules.

View Current Analysis Report - This toolbar button item launches the user's specified analysis report display tool with the current analysis report.

View Analysis Report Index - This button launches the user's specified HTML browser to display an index of analysis reports available within the current analysis.

- This button launches the user's HTML browser to display the TAM Engineer's Manual.
- This button invokes the HTML browser to display the TAM User's Manual.

Search Master Index - This toolbar button launches a dialog that support searching the master documentation index.

- This button starts the TAM analysis for the specified highway and analysis attributes.
- This button saves all TAM analysis data and exits the Traffic Analysis Module.

1.1.3 Tabs

The Traffic Analysis Module Frame includes the tabs described in the following sections.

1.1.3.1 Project/Analysis Tab

This tab contains the project/analysis identification, the current highway identification, and processing bounds.

Figure 1 Project/Analysis Tab

The **Project/Analysis** tab includes the following widgets: Project Name, Project Comment, Project Unit System, Analysis Name, Analysis Comment, Analysis E Max, Default Normal Cross Slope, Analysis Year, Highway Name, Chain, Comment, Edit/View Highway Data, Start Station and End Station.

- **Project Name** - Widget type: text field (read-only). The value of this item is the name of the project.
- **Project Comment** - Widget type: text field (read-only). This is an optional comment about the project.
- **Project Unit System** - Widget type: combo box (read-only). This item specifies the unit system used for the entry and display of all values associated with the project. This unit system is used to control all outputs as well as the unit system assumed for imported datasets if no unit system is explicitly specified in the imported file. The enumeration values are:
 - **user default** (user default unit system),
 - **Metric** (Metric unit system) and
 - **English** (English (Imperial) unit system).
- **Analysis Name** - Widget type: text field (read-only). This is the name of the analysis. The name of the analysis is unique within a project. If the user does not specify a name, the system will create one.
- **Analysis Comment** - Widget type: text field (read-only). This is an optional comment about the analysis.
- **Analysis E Max** - Widget type: combo box (read-only). Unit of measure: percent. The value of this item is the maximum superelevation, as a percentage, for this analysis. The enumeration values are: **4, 6, 8, 10** and **12**. The unit of measure for this item is percent.
- **Default Normal Cross Slope** - Widget type: text field (read-only). Unit of measure: percent. The value of this item is the default normal cross slope, as a percentage, for this analysis. Once a highway dataset is imported, normal cross slope elements can be defined to vary the value along the alignment. The unit of measure for this item is percent.
- **Analysis Year** - Widget type: text field (read-only). Unit of measure: YEAR. The value of this item is the year of the analysis. It is used to compute the average daily traffic volume (ADT).

- **Highway Name** - Widget type: text field (read-only). The value of this item is the name of the master highway associated with the analysis.
- **Chain** - Widget type: text field (read-only). The value of this item is an optional chain name for the alignment associated with the highway dataset.
- **Comment** - Widget type: text field (read-only). The value of this item is an optional comment for the highway dataset.
- **Edit/View Highway Data** - Widget type: button. This button starts the edit/view highway data editor for the master highway. For additional information, see Editing Highway Elements.
- **Start Station** - Widget type: text field. Unit of measure: STATION. The value of this item is the effective starting station of this highway dataset for purposes of this analysis.
- **End Station** - Widget type: text field. Unit of measure: STATION. The value of this item is the effective end station of this highway dataset for purposes of this analysis.

1.1.3.2 Attributes Tab

This tab display the primary control values for the TAM simulation.

Flow Rate (vhr)	Increasing Stations	Decreasing Stations
Entering Platoons (%)	33.00	33.00
Percent Trucks (%)	5.00	5.00
Percent RVs (%)	5.00	5.00

Desired Speed	Mean (km/h)	Standard Deviation (km/h)
Direction of Increasing Stations		
Passenger Cars		
Trucks		
RVs		
Direction of Decreasing Stations		
Passenger Cars		
Trucks		
RVs		

Figure 2 Attributes Tab

The **Attributes** tab includes the following widgets: Configuration Name, Comment, Change Configuration, Auto Generate Platoon Percent, Flow Rate - Increasing Stations, Flow Rate - Decreasing Stations, Entering Platoon %, Increasing Station, Entering Platoon % - Decreasing Stations, Percent Trucks - Increasing Station, Percent Trucks - Decreasing Station, Percent RVs - Increasing Station, Percent RVs - Decreasing Station, Increasing Stations, Decreasing Stations, Simulation Control, Reduced Speed Zones, Crawl Regions, No Passing Zones, Mean Desired Speed, Passenger Car, Increasing Stations, Desired Speed Standard Deviation, Passenger Car, Increasing Stations, Mean Desired Speed, Truck, Increasing Stations, Desired Speed Standard Deviation, Truck, Increasing Station, Mean Desired Speed, RV, Increasing Stations, Desired Speed Standard Deviation, RV, Increasing Station, Mean Desired Speed, Passenger Car, Decreasing Stations, Desired Speed Standard Deviation, Passenger Car, Decreasing Stations, Mean Desired Speed, Truck, Decreasing Stations, Desired Speed Standard Deviation, Truck, Decreasing Station, Mean Desired Speed, RV, Decreasing Stations and Desired Speed Standard Deviation, RV, Decreasing Station.

- **Configuration Name** - Widget type: text field (read-only). The value of this item is the name name of the TAM configuration dataset which includes calibration and accident distribution data.

- **Comment** - Widget type: text field (read-only). The value of this item is a user comment about the TAM configuration dataset.
- **Change Configuration** - Widget type: button. This button displays a dialog that allows the TAM configuration to be selected.
- **Auto Generate Platoon Percent** - Widget type: button. This button generates the value of the platoon percent from the specified flow. The entering platoons percent value is calculated as $100 * (1 - \exp(-.00176 * Flow))$.
- **Flow Rate - Increasing Stations** - Widget type: text field. Unit of measure: vehicles/hour. The value of this item specifies the vehicle flow rate in the direction of increasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is vehicles/hour.
- **Flow Rate - Decreasing Stations** - Widget type: text field. Unit of measure: vehicles/hour. The value of this item specifies the vehicle flow rate in the direction of decreasing stations. The direction of decreasing stations is referred to as direction 2 in the TWOPAS simulation. The unit of measure for this item is vehicles/hour.
- **Entering Platoon %, Increasing Station** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of entering traffic following in platoons in the direction of increasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Entering Platoon % - Decreasing Stations** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of entering traffic following in platoons in the direction of decreasing stations. The direction of decreasing stations is referred to as direction 2 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Percent Trucks - Increasing Station** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of trucks entering traffic in the direction of increasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Percent Trucks - Decreasing Station** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of trucks entering traffic in the direction of decreasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Percent RVs - Increasing Station** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of RVs entering traffic in the direction of increasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Percent RVs - Decreasing Station** - Widget type: text field. Unit of measure: percent. The value of this item specifies the percentage of RVs entering traffic in the direction of decreasing stations. The direction of increasing stations is referred to as direction 1 in the TWOPAS simulation. The unit of measure for this item is percent.
- **Increasing Stations** - Widget type: combo box. This combo box describes what the upstream alignment consists of beyond the highway limits in the direction of increasing stations. The enumeration values are: **Level Tangent**, **Level Sharp Curves** and

Steep Grade.

- **Decreasing Stations** - Widget type: combo box. This combo box describes what the upstream alignment consists of beyond the highway limits in the direction of decreasing stations. The enumeration values are: **Level Tangent**, **Level Sharp Curves** and **Steep Grade**.
- **Simulation Control** - Widget type: button. This button displays the simulation control dialog.
- **Reduced Speed Zones** - Widget type: button. This button activates a dialog to edit the reduced speed zones associated with the master highway.
- **Crawl Regions** - Widget type: button. This button activates a dialog to edit the crawl regions associated with the master highway.
- **No Passing Zones** - Widget type: button. This button activates a dialog to edit the no passing zones associated with the master highway.
- **Mean Desired Speed, Passenger Car, Increasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of passenger car vehicles in the direction of increasing stations. The default value of the item is the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, Passenger Car, Increasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard deviation of the desired speed of passenger car vehicles in the direction of increasing stations. The default value of the item is 10% of mean desired speed of passenger car vehicles. The unit of measure for this item is kilometers/hour (miles/hour).
- **Mean Desired Speed, Truck, Increasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of truck vehicles in the direction of increasing stations. The default value of the item is 95% of the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is 95% of the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, Truck, Increasing Station** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard deviation of the desired speed of truck vehicles in the direction of increasing stations. The default value of the item is 10% of mean desired speed of truck vehicles. The unit of measure for this item is kilometers/hour (miles/hour).
- **Mean Desired Speed, RV, Increasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of truck vehicles in the direction of increasing stations. The default value of the item is 95% of the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is 95% of the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, RV, Increasing Station** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard

deviation of the desired speed of RV vehicles in the direction of increasing stations. The default value of the item is 15% of mean desired speed of RV vehicles. The unit of measure for this item is kilometers/hour (miles/hour).

- **Mean Desired Speed, Passenger Car, Decreasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of passenger car vehicles in the direction of decreasing stations. The default value of the item is the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, Passenger Car, Decreasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard deviation of the desired speed of passenger car vehicles in the direction of decreasing stations. The default value of the item is 10% of mean desired speed of passenger car vehicles. The unit of measure for this item is kilometers/hour (miles/hour).
- **Mean Desired Speed, Truck, Decreasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of truck vehicles in the direction of decreasing stations. The default value of the item is 95% of the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is 95% of the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, Truck, Decreasing Station** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard deviation of the desired speed of truck vehicles in the direction of decreasing stations. The default value of the item is 10% of mean desired speed of truck vehicles. The unit of measure for this item is kilometers/hour (miles/hour).
- **Mean Desired Speed, RV, Decreasing Stations** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the mean desired speed of truck vehicles in the direction of decreasing stations. The default value of the item is 95% of the 85th percentile speed at the midpoint of the master highway. If the 85th percentile speed is not defined, the default value of the item is 95% of the design speed at the midpoint of the master highway. The unit of measure for this item is kilometers/hour (miles/hour).
- **Desired Speed Standard Deviation, RV, Decreasing Station** - Widget type: text field. Unit of measure: kilometers/hour (miles/hour). The value of this item is the standard deviation of the desired speed of RV vehicles in the direction of decreasing stations. The default value of the item is 15% of mean desired speed of RV vehicles. The unit of measure for this item is kilometers/hour (miles/hour).

1.1.3.3 Evaluation Tab

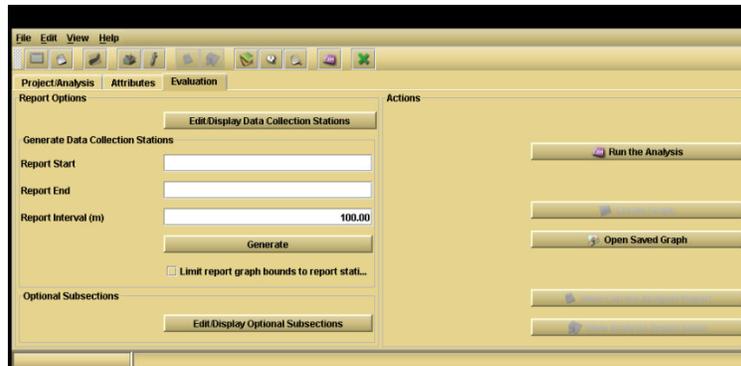


Figure 3 Evaluation Tab

The **Evaluation** tab includes the following widgets: Edit/Display Data Collection Stations, Report Start, Report End, Report Interval, Generate, Limit report graph bounds to report stations, Edit/Display Optional Subsections, Run the Analysis, Create Graph, Open Saved Graph, View Current Analysis Report and View Analysis Report Index.

- **Edit/Display Data Collection Stations** - Widget type: button. This button activates a dialog to edit the TAM data collection stations.
- **Report Start** - Widget type: text field. Unit of measure: STATION. The value of this item specifies the starting location (station) of generated data collections stations. The value defaults to the minimum analysis station plus one meter.
- **Report End** - Widget type: text field. Unit of measure: STATION. The value of this item specifies the end location (station) of generated data collections stations. The value defaults to the maximum analysis station minus one meter.
- **Report Interval** - Widget type: text field. Unit of measure: meters (feet). The value of this item specifies the reporting interval of the simulation (recommendation: either match reporting stations or differ from reporting stations by at least 25 m or 80 ft). The unit of measure for this item is meters (feet).
- **Generate** - Widget type: button. This button will generate the data collection station using the specified data report interval.
- **Limit report graph bounds to report stations** - Widget type: check box. This check box indicates if the TAM analysis report graphs will be limited to the min and max report stations.
- **Edit/Display Optional Subsections** - Widget type: button. This button allows the user to enter optional subsections for TAM reporting. Up to nine subsections may be defined, with the total of report intervals plus subsections being no more than 300.
- **Run the Analysis** - Widget type: button. This button starts the TAM analysis for the specified highway and analysis attributes.
- **Create Graph** - Widget type: button. This button starts the graph wizard that configures the graphical display of the analysis results.
- **Open Saved Graph** - Widget type: button. This button invokes a dialog to open and display a previously saved graph.
- **View Current Analysis Report** - Widget type: button. This button launches the user's preferred report viewer to display the current analysis report.

- **View Analysis Report Index** - Widget type: button. This button item launches the user's specified HTML browser to display an index of analysis reports available for the current analysis.

1.1.4 Status Bar

The Traffic Analysis Module Frame includes the statusbar fields listed below.

Progress Bar - This progress bar displays the progress of the current processing.

Progress Bar Text - This text field bar displays the current processing status message.

2. Other Topics

2.1 IHSDM User Properties

IHSDM properties are used to control the runtime behavior of the system. For detailed information on IHSDM User Properties refer to User Properties in the User Properties and Defaults Manual and User Default Values in the User Properties and Defaults Manual.

2.2 Projects, Analyses and Master Highways

For detailed information on projects, analyses and highways, see Running IHSDM Software Manual.

2.3 IHSDM Documentation

IHSDM documentation is organized in a series of manuals oriented to specific user types and information needs. User types include first-time users, regular users, and system administrators. Information needs include: installing and configuring IHSDM, the mechanics of using the various features of the software, engineering insights to ensure appropriate use of the software and interpretation of outputs, and administering and maintaining the software installation.

The structure of the series of manuals is illustrated in the User Documentation Map. The manuals are listed and described below by the users and information needs they support:

- **Manuals for First-Time Users:** These manuals are oriented to assist new users in installing and configuring IHSDM and running it for the first time. Manuals include:
 - **Getting Started Guide** - An overview of the installation and use of IHSDM. This Guide should be sufficient for stand-alone installations. For client-server installations, the more detailed IHSDM Installation Manual will be needed.
 - **Installation Manual** - A detailed reference to the installation and configuration of IHSDM.
 - **Running IHSDM Software Manual** - An overview of the basic operations in running the IHSDM software. The intent is to provide new users the information they need to run IHSDM for the first time.
- **User's Manuals:** These Manuals are intended as references that regular users can consult when issues arise about the mechanics of using the IHSDM graphical user interface. Manuals include:
 - **IHSDM User's Manual** - A reference for using the primary IHSDM graphical user interface. Other User's Manuals provide additional details on specific components of the IHSDM graphical user interface:
 - **Policy Review Module (PRM) User's Manual** - A reference for using the (stand-alone) Policy Review Module software graphical user interface.

- Crash Prediction Module (CPM) User's Manual - A reference for using the (stand-alone) Crash Prediction Module software graphical user interface.
- Design Consistency Module (DCM) User's Manual - A reference for using the (stand-alone) Design Consistency Module software graphical user interface.
- Intersection Review Module (IRM) User's Manual - A reference for using the (stand-alone) Intersection Review Module software graphical user interface.
- Traffic Analysis Module (TAM) User's Manual - A reference for using the (stand-alone) Traffic Analysis Module software graphical user interface.
- Using the IHSDM Graphical User Interface - A reference for the operation of the individual components of the graphical user interface.
- User Properties and Defaults Manual - A reference for editing IHSDM system properties, user properties, and user default values.
- Frequently Asked Questions - A list of frequently asked questions related to the IHSDM software.
- IHSDM Troubleshooting Guide - A reference for troubleshooting IHSDM software problems.
- Documentation of IHSDM Data: These documents provide detailed descriptions of all IHSDM data elements and references for importing and editing data.
 - IHSDM Highway Model - A reference for the IHSDM highway model, including descriptions of the data elements comprising the model.
 - LandXML Support - A reference for IHSDM support for the LandXML data standard.
 - Editing Highway Elements - A reference for using the Edit/View Highway Elements graphical user interface.
 - GEOPAK-TO-IHSDM Application Programmer's Interface (API) User's Manual - A reference for using the Application Program Interface (API) to export data from GEOPAK into a format that IHSDM can import.
- Engineer's Manual: The intent of these Manuals is to provide the engineering information necessary to make appropriate use of IHSDM evaluation capabilities and interpretation of results. Manuals include:
 - Policy Review Module (PRM) Engineer's Manual - A reference for the engineering issues of using the Policy Review Module.
 - Crash Prediction Module (CPM) Engineer's Manual - A reference for the engineering issues of using the Crash Prediction Module.
 - Design Consistency Module (DCM) Engineer's Manual - A reference for the engineering issues of using the Design Consistency Module.
 - Intersection Review Module (IRM) Engineer's Manual - A reference for the engineering issues of using the Intersection Review Module.
 - **Intersection Policy Review Sub-Manual** - Describes the procedures for checking an intersection design element against relevant policy, including references to the section of the AASHTO policy that contains the information used to develop the module and check the design. **(The Intersection Policy Review Sub-Manual is not available in the current release of IHSDM.)**

- Intersection Diagnostic Review Engineer's Sub-manual - Describes in detail the concerns that the diagnostic review component considers and the models used to evaluate those concerns.
 - Traffic Analysis Module (TAM) Engineer's Manual - A reference for the engineering issues of using the Traffic Analysis Module.
- Manuals for System Administrators: These Manuals provide system administrators the information they need to maintain IHSDM installations.
 - System Administrator's Manual - A reference for using the IHSDM Administration Tool software graphical user interface. This manual also discusses customizing variable components of IHSDM, including analysis report templates, data dictionaries, and policy files.
 - PRM/IRM Policy Table Maintenance - A reference for editing design policy tables used in the Policy Review Module and Intersection Review Module.

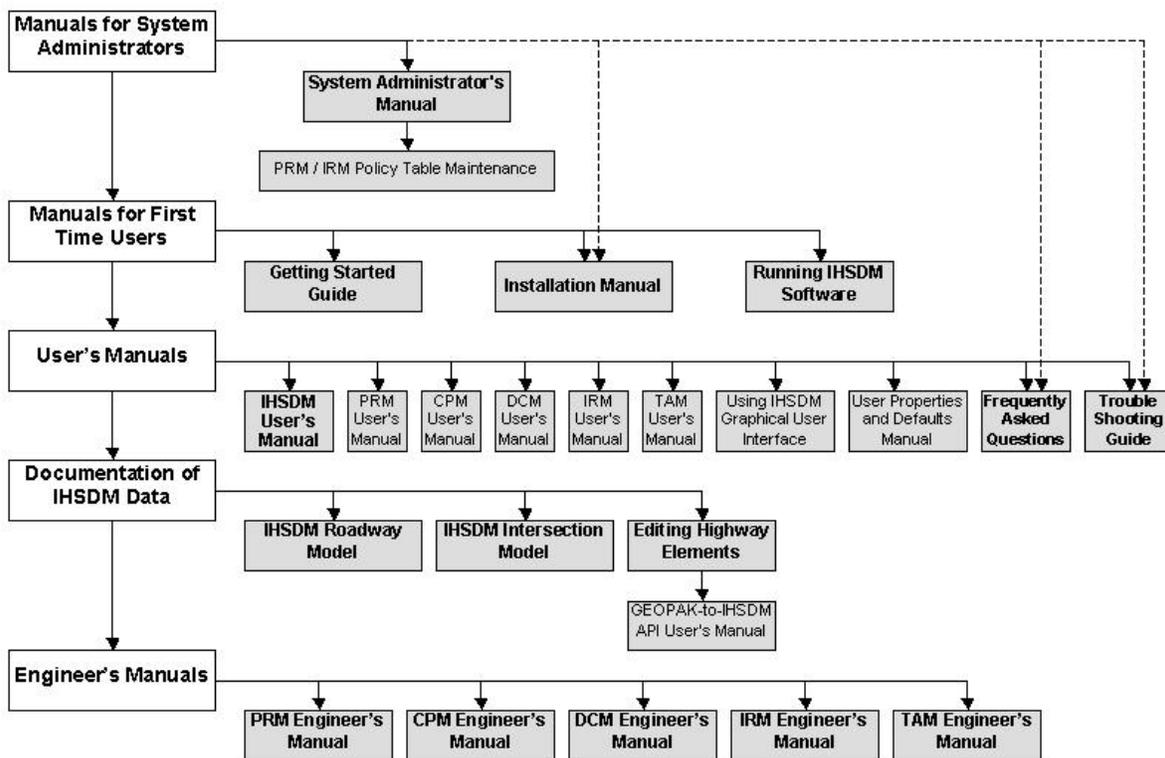


Figure 4 User Documentation Map

2.4 Troubleshooting

For updated information on troubleshooting problems in the IHSDM, refer to the IHSDM Troubleshooting guide.

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