EXOR Traffic Interface Manager User Guide

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1 Introduction

Welcome to the Exor’s Traffic Interface Manager. This Guide provides you with practical information to help you understand and get the most out of Traffic Interface Manager. It is organised for fast, easy access to information divided into the following topics:

- Introduction
- Getting started
- Querying and displaying traffic data
- Editing data
- Publishing Traffic Statistics
- Troubleshooting

This chapter introduces you to Exor and Traffic Interface Manager.

1.1 What is Traffic Interface Manager?

Traffic Interface Manager is an interface between TRADAS traffic count management and traffic statistic generating software and the Exor network asset database. Together they enable users to enter data, produce annual statistics and then publish, display, and archive them. All this is supported within an integrated system that also integrates traffic data with Geographic Information System (GIS) and other enterprise databases.

Highway agencies collect, manage, and distribute traffic information to satisfy a variety of traffic data users. Common uses for traffic data include project selection, pavement design, capacity analysis, safety analysis, air quality, and travel forecasting (In the USA, see AASHTO Guidelines for Traffic Data Programs. American Association of State Highway and Transportation Officials: Washington, D.C.1992, pages 95-105). To support this agencies establish traffic monitoring programs.

Limited personnel and equipment resources make it impossible to provide complete and continuous count data for the entire road system or count traffic on every road every year, so traffic data programs usually consist of a relatively small number of permanent traffic recorders and a greater number of short-term counts. The objective is to count a representative sample within the roadway system that includes an appropriate mix of volume, vehicle classification, speed, and weight data. Once the data are collected and checked for quality and turned into aggregate statistics they are ready for analysis, management, and reporting. Traffic Interface Manager is designed to better integrate the statistics that are published into the highway agency’s enterprise database.

This traffic count data flow is illustrated in Figure 1.
Together Traffic Interface Manager and traffic count and statistics systems like TRADAS provide a single system for processing traffic data and integrating it with the enterprise database. The TRADAS data collection component encapsulates the automatic polling activities of a variety of device makes and models into a single distributed service. The TRADAS analysis components validate and summarize various user-defined types of traffic. The result is a robust traffic data system with consistent analysis and reporting throughout. Traffic Interface Manager provides an environment to integrate traffic data with other highway agency data such as infrastructure inventory or accident data. It also provides a map-based user interface in the form of Spatial Manager, Spatial Data Manager, and Map Services to display and query traffic data.

Traffic data that can be integrated into the enterprise database with Traffic Interface Manager includes summary traffic statistics, such as Annual Average Daily Traffic volumes, and the road network locations to which they apply. These locations are called traffic count sites or stations and traffic sections. Traffic Manager is not intended as an application to manage raw data from traffic count programs.

Traffic Interface Manager does not include procedures to validate traffic count data or to generate traffic statistics from raw data. These are functions of TRADAS that are covered by separate documentation (TRADAS Version 3.0 User’s Guide. Chaparral Information Systems, 2004).
1.1.1 Support and Training

1.1.1.1 Support Services
Exor recognises that the purchase of comprehensive software products represents a long-term investment. Exor provides a wide range of support services to ensure that clients can make best use of our software and obtain the maximum return on their investment.

Please contact your Bentley account manager for details of support and training services.

1.1.1.2 Training
Exor offer a comprehensive range of training courses covering all aspects of the system, these courses can be tailored to suit your own operational requirements if required.

1.2 Who should use this guide

Every user, administrator, or implementer of Traffic Interface Manager should find this Guide useful.

It covers essential information about getting started with Traffic Interface Manager, and the basic functions of the application.

This manual assumes that you have an understanding of the terms and activities associated with traffic data collection and analysis in your organisation. It also assumes that you are familiar with core Highways by Exor modules.

The purpose of this guide is to provide users with an overview of how to use Traffic Interface Manager conventions, menus, and forms to retrieve and work with information.
2 Getting Started

This chapter describes how to open and close Traffic Interface Manager traffic forms. It assumes that the software has already been set up and that the user knows how to start the overall Highways by Exor environment.

2.1 Starting Traffic Interface Manager

You will not need to open Traffic Interface Manager forms for most of the time that you interact with traffic data. These statistics become part of the Highways by Exor database, and should be queried and displayed using normal Highways by Exor client applications such as Spatial Manager, Network Manager, Map Services and Spatial Data Manager or by using reports.

There are three forms specific to Traffic Interface Manager:

<table>
<thead>
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<tbody>
<tr>
<td>Publish Traffic Data</td>
<td>TMWEB0010</td>
</tr>
<tr>
<td>Traffic Interface Manager Metadata Maintenance</td>
<td>TM0001</td>
</tr>
<tr>
<td>View Traffic Data Metadata</td>
<td>TMWEB0001</td>
</tr>
</tbody>
</table>

Two ways are described here to open these forms:

- Click on the Traffic Interface Manager button on the Highways launch pad
- Select the Traffic Interface Manager application from the Fastpath menu

2.1.1 Opening Traffic Interface Manager forms from the Launchpad

A Traffic Interface Manager button will be displayed on the Launchpad when you first log into Highways by Exor if it has been set up as a button on this form.

Note: For instructions how to set this up see the Highways by Exor – Basic System Administration document.
Figure 2 - Traffic Interface Manager forms can be opened from the Launchpad

Click on the [Publish Traffic Data] icon to open the Publish form (TMWEB0010) or the [Traffic Interface Manager Metadata Maintenance] icon to open the Traffic Interface Manager Metadata Maintenance form (TM0001).

2.1.1.1 Opening the Publish Traffic Data form

You will only need to open the Publish Traffic Data form to use the publish functions.

To open the Publish Traffic Data form click on the [Publish Traffic Data] menu option.

Figure 3 – Menu Option
2.1.2 Opening the Traffic Data Metadata Maintenance form

You will only need to open the Traffic Data Metadata Maintenance form only when you first set up Traffic Interface Manager or if you want to change the metamodel. You should not change the metadata model without consulting Exor.

To open the Data Metadata Maintenance form click on the [Traffic Interface Manager Metadata Maintenance] menu option.

Figure 4 – menu Option

2.1.3 Starting Traffic Interface Manager forms from Fastpath

If you know the number or the name of the Traffic Interface Manager form that you want to open you can open it from any Highways by Exor module using Fastpath. To open the Fastpath form “Fastpath” from the File menu of any Highways by Exor Module.

Figure 5 - Fastpath

Type the form number in the Module field or type the name of the form, into the Title field form. Or double click in either of these fields and select the Traffic Interface Manager form from the resulting List of Values.

Once the name or number of the form is correct in Fastpath, click on the Run button.

2.1.3.1 Opening the View Traffic Data Metadata form

Open the View Traffic Data Metadata form to see current Traffic Interface Manager metadata. To open the form using Fastpath, first open the Fastpath form from the menu of any module.
Then type “tmweb0001”, in the Module field or type “view traffic data metadata”, into the Fastpath form. You can also double click in either of these fields and select from the List of Values. Then click on the Run button.

2.2 Closing Traffic Interface Manager by Exor

To close Traffic Interface Manager click on the [Exit] button on the Traffic Interface Manager form or the close window control .
3 Querying and Displaying Traffic Data

Querying and displaying traffic data are standard Highways by Exor functions. This chapter is intended as a supplement to the User Guides for other modules within the Highways by Exor suite. It discusses display and query functions in the context of the Traffic Interface Manager metadata model, and explains some validation functions that are specific to Traffic Interface Manager. It covers the following topics:

- Viewing Traffic Data Records
- Displaying traffic data on a map
- Traffic Data Queries
- Standard Reports

3.1 Viewing traffic data records

Use any normal Highways by Exor client application form to select the set of traffic statistics records that you want to see. Traffic statistic record types can always be selected from a list of all record types available in the system.

Note: See Exor’s Asset Manager User Guide for detailed instructions viewing traffic statistics (and other record types) using Asset Manager forms.

3.1.1 Traffic statistic locations

Two types or asset records are defined to maintain the locations of traffic counts and the statistics derived from them. These are count sites or stations (CS) and traffic sections (TS). Count site records have user-defined attributes and any changes to these are automatically updated in TRADAS. CS and TS records are discussed in the next chapter.

3.1.2 Traffic statistic record types

Traffic statistics are managed within the Highways database as special kinds of asset records. These are given descriptive names and commonly queried using acronyms that correspond to these names. These names can be changed with the system is set up.

The second letter in the statistic type code must be an “S”. This is done so that the “S” can be replaced with a “Z” to indicate temporary traffic statistic types, which are created during the first phase of the publish process. Statistic codes usually begin with CS or TS to indicate whether the statistics are for count site or traffic sections.

3.2 Mapping traffic data

Traffic data can be displayed in maps using any Exor mapping application Spatial Manager, Spatial Data Manager, or Map Services.

Note: See individual product documentation for detailed instructions about how to use them.

In each case, the spatial theme must be set up by a system administrator or expert user using the GIS themes form—GIS0010.
3.2.1 Spatial Data Manager

To start the Spatial Data Manager application, click on the GIS button on the left side of the Favourites form.

![GIS Button](image)

Once SDM is running, to display traffic data select the Add Exor Theme choice under the View menu.
All the available exor Themes are then listed in a dialog box like the one shown in Figure 8.

Permanent statistic theme names consist of the count site or traffic section that the statistic is located on, followed by the statistic date.

Temporary statistic theme names consist of the statistic type code followed by the statistic date.
3.2.2 Spatial Manager

To start the Spatial Manager application, first open ArcMap and then open the Spatial Manager extension. Use the Table of Contents window to display any traffic asset layer theme that has been defined.  

*Note:* See the GIS THEMES Setup document for instructions on how to set up themes.

3.2.3 Map Services

You can open the Map Services window directly from the standard Highways toolbar at any time by clicking on the “Show Map” button.

![Map Services window](image)

*Figure 10 – Show Map*

This will open a Map Services map window for users of web-served Highways modules, if Map Services is available. Any themes that Map Services has been configured to display, will be available to all Map Services users.
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4 Editing Count Site and Traffic Section Data

Traffic Interface Manager by Exor provides a powerful environment to manage a database of the count sites and traffic sections that relate the statistics to the road network. Both are modeled as assets along the transportation network.

This chapter covers the following topics:
- Editing Count Sites
- Factor Groups
- Editing Traffic Sections
- Changing Metadata

4.1 Editing Count Sites

Count Sites are places where traffic is counted. They are modeled as point assets in the Traffic Interface Manager data model.

Traffic is usually counted in one of three ways:
- Traffic Volume
- Vehicle Classification
- Weigh-In-Motion (WIM)

The type of site is one of the attributes that is maintained within Traffic Interface Manager. Count sites where different types of count are taken will have different values for some attributes, especially WIM sites.

Count Sites are represented in a number of tables in the Highways and TRADAS databases. To ensure that all these tables match, Count Site records must be edited in the Highways by Exor environment, using Asset Manage, Spatial Manager or Spatial Data Manager. Traffic Interface Manager ensures that changes are then copied to all the appropriate tables.

If factor groups are registered with in the Factor Group tab on the Traffic Interface Manager Metadata Maintenance form and the VALDIRN product option is set to Y (for yes) then Traffic Interface Manager will ensure that factor groups for count sites are the same as those for the traffic sections that they are on. In this case if you enter the wrong number as a factor group membership value for a count site record you will not see an error message immediately, but you will get an error message if you subsequently try to locate the count site along a traffic section that does not have the same values. The error message will tell you that the parent differs from the child for the factor group membership value.

4.1.1 Creating a new Count Site

A New Count site can be created using the Inventory Items – NM0510 form in Asset Manager.

Note: See the Asset Manager – User Guide.

To create a new Count Site (or any other asset type) click the [Create Record] button on the menu toolbar (or press F6). Or select an existing Count Site and then click on the [C] – Copy Current Item button on the menu toolbar.

Once you have created a new count site record, enter appropriate values for each of the attribute fields. These fields are preset when the system is set up. You will need help from your system administrator if you want to change the attribute fields themselves, but you can edit their values.
Editing traffic sections is discussed in a later section in this chapter. Traffic sections are stretches of the road network that have homogeneous traffic characteristics. Within *Highways by Exor* they are modelled as linear assets along the transportation network. They can be edited using Asset Manager, Spatial Manager, or Spatial Data Manager.

### 4.1.1 Fixed Count Site Attributes

All count site records (and any other asset record) have the following fixed attributes. The two mandatory attributes that must be given values are indicated with an *.

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<thead>
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<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Type code filled in by system</td>
</tr>
<tr>
<td>XSP</td>
<td>Cross sectional position</td>
</tr>
<tr>
<td>Detailed XSP</td>
<td>Detailed cross sectional position</td>
</tr>
<tr>
<td>Surveyed by</td>
<td>Name of surveyor</td>
</tr>
<tr>
<td>Admin Unit*</td>
<td>Administration Unit</td>
</tr>
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<td>Notes</td>
<td>Notes</td>
</tr>
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<td>Length</td>
<td>Length of asset</td>
</tr>
<tr>
<td>Start Date*</td>
<td>Date at which asset is valid</td>
</tr>
<tr>
<td>End Date</td>
<td>Date at which asset is retired</td>
</tr>
</tbody>
</table>

### 4.1.2 Locating and Relocating Count Sites

Count Sites may or may not have defined locations on the user’s road network. If you locate a count site on part of the network where there is no traffic section and then later locate a traffic section on this part of the network and the VALDIRN and TS_MAND product options are set to Y (for yes) then the count site factor group membership values will be overwritten.

One Count Site can have two network locations, so that users can create a single Count Site that is located on roadways in both directions along a divided highway. Network Manager will enforce that the Count Site Number is unique for the network type.

Do not locate a count site at the intersection of two traffic sections or the system will associate it with both.

A count site can be relocated in which case traffic statistics associated with the site are also associated with the new site location (which might be appropriate in the case of a road realignment). If the “relocation” is to reflect a change in the network (such as a new traffic generator being added), and you want to treat the data as being different, you will have to end date the Count Site and create a new one, even if the location is the same. To end-date a count site or any asset enter the retirement date in the End Date field in the Inventory form.

### 4.1.3 Weigh-In-Motion (WIM) Count Sites

Count sites at which heavy vehicle weights are recorded must have additional attributes that can be used to store this weight data. WIM parameter attributes are stored in a separate child record under the count site asset type.

### 4.1.3 Count site update in TRADAS

Any changes to count sites will be recorded in an audit table and periodically (typically every three minutes) transferred to TRADAS. The publish process will not begin until this update has taken place. If you want to publish immediately after
edit a count site you can run the count site update process manually from TRADAS by clicking on the Count Site Update icon.

4.2 Factor Groups in Traffic Interface Manager

Count sites can be divided into groups with similar characteristics for the purpose of estimating traffic statistics from raw traffic count data. These groups are called Factor Groups. One aspect of calculating traffic statistics is working out appropriate multiplying factors that can be used to convert raw count data from short term counts at specific sites into more general statistics.

It is important to distinguish between Factor Groups and Factor Group Membership. A factor group is a category created by the highway agency and maintained within TRADAS. The Factor Group membership is an attribute of a Count Site and Traffic Section. A Count Site can have a number of Factor Group Memberships reflecting different types of Factor Group used (e.g., Vehicle, Growth, Axle, etc).

Factor Group memberships must be maintained as attributes of both Count Sites and Traffic Sections. If you want to enforce factor group integrity then every Count Site and Traffic Section record must have Factor Group values. Users must ensure that new count sites have the same factor group membership values as traffic sections they are on. The statistical processing associated with factors is carried out in TRADAS and any updates to Factor Group memberships are signaled to TRADAS in the count site audit table.

These must be the same for a traffic section and all the count sites along it. You can only change factor group values for a count site if you relocate it to a different traffic section or if it is placed on a network element without a traffic section.

When a count site is located along a traffic section and the VALDIRN and TS_MAND product options are set to Y (for yes) Traffic Interface Manager will check whether the factor group membership of count site and section are the same. If they are not it will publish an error message like the one shown in Figure 11 listing each site and section and their factor group values. It is up to users to determine which value is correct, and modify the other to match it.
4.3 Editing Traffic Sections

Traffic sections are stretches of the road network that have homogeneous traffic characteristics. Within *Highways by Exor* they are modeled as linear assets along the transportation network. They can be edited using *Asset Manager*, *Spatial Manager*, or *Spatial Data Manager*.

Traffic Sections are defined as Exclusive inventory items. This means that only one traffic section can exist in any location.

4.3.1 Creating a new Traffic Section

A new Traffic Section can be created using the Inventory Items – NM0510 form in *Asset Manager*.

*Note:* See the *Asset Manager – User Guide*.

To create a new Traffic Section (or any Inventory Item) press the [Create Record] button on the menu toolbar (or press F6). Or select an existing Traffic Section and then Press the [C] – Copy Current Item button on the menu toolbar.
4.3.1.1 Fixed Traffic Section Attributes

All traffic section records (and any other asset record) have the following fixed attributes. The two mandatory attributes that must be given values are indicated with an *.

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<td>Date at which asset is valid</td>
</tr>
<tr>
<td>End Date</td>
<td>Date at which asset is retired</td>
</tr>
</tbody>
</table>

4.3.1.2 Locating Traffic Sections

Traffic Sections must have defined locations on the road network. Only one Traffic Section can be located on any part of the network and each part of the network should have a Traffic Section along it; however this is not enforced by the database.

To locate a Traffic Section, click on the Locate Tool and then use one of the options to locate the beginning and end of the Traffic Section.

4.3.2 Business rules for editing Traffic Sections

Traffic statistics are stored within Traffic Interface Manager as “children” of Traffic Sections. In other words, each Traffic Section may have one or more statistics records that apply to the part of the road network represented by the Traffic Section.

Users must decide for themselves the business rules that they apply when they edit the locations of traffic sections. If a traffic section location is changed due to a change in traffic patterns then the traffic statistics over the traffic location should probably also be changed. The best way to do this is to end-date the traffic section (retire it by entering an End Date value in the Inventory form) and create and locate a new traffic section, for which new statistics will be calculated during the next publish.

There may be times when a user will want to modify the location of a traffic section and all the traffic statistics associated with that section, for example to correct a mistake.

Traffic sections must have the same factor group membership values as count sites along them. If a traffic section is located over a count site, the factor group membership values of the count site will be overwritten by those of the traffic section.
4.4 Changing metadata

Note: The values in a List of Values (domain) or any other aspect of the metadata can be changed. See the Highways by Exor – Basic System Administration document for instructions on editing metadata within Highways by Exor.

Changes to the Traffic Interface Manager metadata must be synchronized with changes in the TRADAS metadata. Consult with Exor support before changing your metadata.

4.4.1 Adding Asset Attributes

To add attributes to CS or TS asset type use the NM0410 Inventory Metamodel form. If the attributes are needed for TRADAS reports or if they are factor group values then do not edit asset attributes without consulting Exor Corporation and Chaparral Systems Corporation support.
5 Publishing Traffic Statistics

This chapter covers the following topics:
- Introduction to the publish process
- Running the publish process

5.1 Introduction to the publish process

The main purpose of Traffic Interface Manager is to provide access to traffic statistics data within the enterprise database. Traffic statistics are calculated within TRADAS system and then published to Highways for traffic sections and for individual count-sites. These statistics are held within Highways as hierarchical data related to the parent traffic section or count-site.

There are likely to be many sets of each type of statistic, one set per time period.

A set of temporary statistics is created during the publish process and made available for review before the publish process is completed. There can only be one set of temporary statistics at any given time.

5.1.1 How the publish process works

The publish process goes through four stages:
- The system checks all the count sites and traffic sections at the effective date, makes sure that their factor group membership and direction values match, and passes this information to TRADAS. Any mismatches are reported in the Traffic Interface Manager form. If there are any mismatches the process stops so that users can correct their data.
- TRADAS calculates traffic statistics for each traffic section. Traffic statistics for each count site and each traffic section are written to temporary inventory item records.
- Users are presented with a choice between committing the traffic statistics records to permanent records (immediately or after a review) or stopping the process. If they stop the process then they must start again from the beginning.
- Traffic statistics are saved as permanent records.

5.1.1.1 Validity check

To begin the publish process:
- Select the publish type (ANNUAL, WEEKLY, MONTHLY, or DAILY)
- Enter the publish period (a four-digit year for ANNUAL and a start and end date for DAILY)
- Enter the effective date
- Press the [Start Pre-publish] button on the Traffic Interface Manager Publish form shown in Figure 13.

This starts a pre-publish process that checks count site and traffic section data for consistency. This validity check will fail and the publish process will stop if:
- Count Sites do not have factor group membership values
- Count Sites do not have factor group membership values identical to those of the Traffic Sections they are on
- A Count Site is located along more than two Traffic Sections
Traffic Sections that share a Count Site do not have different direction field values (only if the VALDIRN Traffic Interface Manager product option is set to “Y”)

A list of records with any of these problems (and a code indicating which problem was encountered for each) will be displayed. (These messages are listed in Chapter 6). The data must be edited so that factor group and direction values are consistent before the publish process can be run.

Once the system has validated the relationships between count sites and traffic sections, TRADAS calculates statistics for traffic sections based on available count site statistics in the TRADAS Public Database and the relationship between these and traffic sections.

5.1.1.2 Publish temporary statistics records

The publish process computes statistics over the traffic section and makes these and pre-calculated count site statistics public via the inventory views as temporary record types. The temporary statistics records are inserted into an existing hierarchical metamodel. (Any temporary statistics left over from the previous publish process are removed from the inventory table at the beginning of the publish process.)

Once the temporary statistics have been published users can browse the statistics at the individual count-sites and at the traffic sections. These can be displayed in the Spatial Data Manager map interface, queries can be run to show areas of high or low traffic volume. The temporary data will remain as inventory until the pre-publish process is restarted or until the user accepts that the data is complete and accurate, and chooses to commit the temporary statistics to permanent.

5.1.1.3 Commit statistics to permanent records

When the user clicks on the [Commit Statistics] button the temporary statistics records (which typically have record types beginning with “CZ” or “TZ”) are converted into permanent records (with a record type beginning with “CS” or “TS”).

5.1.2 Publishing historical statistics

Two dates are taken into consideration by the publish process. One is the system effective date. The second is the publish period entered by the user. Both these dates must be set in the publish form.

For the annual statistic publish a four-character year must be entered (YYYY). For a daily statistic publish the beginning and end dates for the publish process must be entered in the form: DD-MM-YYYY (e.g., 27-Aug-2003).

5.1.2.1 Effective date

Statistics are generated against the network as it was at the effective date. The count sites and traffic sections are related on the basis of their locations at the effective date. When an annual publish is run and an effective date is specified (i.e., 01-JAN-2004) the effective date changes to today’s date in form TMWEB0010. The Start Date is correctly set to the effective date specified earlier (01-JAN-2004).

It is up to users to ensure that network, count site, and traffic section relationships are correct for the selected effective date.

No history is kept of changes to attributes like factor group memberships, so these must be managed by users to support desired effective dates. If users want to maintain old factor group membership values when new ones are entered then they must end date the old count sites and sections with these values, and create new ones that will have the new values.

5.1.2.2 Publish year

TRADAS uses statistics that have been calculated for the publish year, based on count data from that year. The statistic year refers to the begin traffic year, so if the year to process is 1/7/2000-30/6/2001, the trafyear would be 2000.
If users select publish dates for which there is no data in TRADAS then the publish process will fail.

5.1.3 Publish process messages

A number of publish status messages indicate the status of the publish process. An example is shown (in large, bold type) in Figure 12 above. These are listed below (along with the internal status code that each corresponds to).

<table>
<thead>
<tr>
<th>Status Message</th>
<th>Internal Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no active jobs</td>
<td>0</td>
</tr>
<tr>
<td>Pre-publish data population in progress...</td>
<td>1</td>
</tr>
<tr>
<td>Pre-publish data population completed with errors.</td>
<td>2</td>
</tr>
<tr>
<td>Deleting temporary statistics...</td>
<td>3</td>
</tr>
<tr>
<td>Pre-publish complete and data ready for TRADAS.</td>
<td>4</td>
</tr>
<tr>
<td>Pre-publish suspended.</td>
<td>5</td>
</tr>
<tr>
<td>Stopping publish job...</td>
<td>6</td>
</tr>
<tr>
<td>TRADAS creating site statistics</td>
<td>10</td>
</tr>
<tr>
<td>TRADAS pre-publish failed.</td>
<td>11</td>
</tr>
<tr>
<td>TRADAS temporary statistics generated.</td>
<td>12</td>
</tr>
</tbody>
</table>

Figure 12 – Publish error log
Messages will be displayed listing each record for which a problem was encountered, along with an error id code for the type of problem. Some example messages are shown in Figure 12 above. Error messages are listed below along with their error id codes.

**Note:** See Chapter 6 Troubleshooting for more information about error messages.

<table>
<thead>
<tr>
<th>Error Message</th>
<th>Error ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS should only reside on at most two sections</td>
<td>1</td>
</tr>
<tr>
<td>Mismatched pattern site</td>
<td>2</td>
</tr>
<tr>
<td>Mismatched class site</td>
<td>3</td>
</tr>
<tr>
<td>Primary direction should be N or E for two way flow</td>
<td>4</td>
</tr>
<tr>
<td>Primary TS already set</td>
<td>5</td>
</tr>
<tr>
<td>Secondary TS already set</td>
<td>6</td>
</tr>
<tr>
<td>No Job header record found</td>
<td>9993</td>
</tr>
<tr>
<td>No prior year TSDA available for growth factoring</td>
<td>9994</td>
</tr>
<tr>
<td>Multiple highways count sites for TRADAS site X</td>
<td>9995</td>
</tr>
<tr>
<td>Multiple AADW statistics for TRADAS site X</td>
<td>9996</td>
</tr>
<tr>
<td>Highways site X does not exist in TRADAS</td>
<td>9997</td>
</tr>
<tr>
<td>TRADAS site X does not exist in highways</td>
<td>9998</td>
</tr>
<tr>
<td>Unhandled exception</td>
<td>9999</td>
</tr>
</tbody>
</table>

Messages 9993 and 9999 indicate errors that will prevent the publish process from finishing. Call technical support if you encounter one of them. The other messages indicate data issues that may affect the published statistics.
5.2 Running the publish process

This section describes the steps involved in running the publish process.

5.2.1 Before you publish

Before starting the publish process ensure that:

- TRADAS is running
- Highways is running
- The network database for the effective date is complete for the traffic data
- Factor group membership values and direction values of count sites match those of the traffic sections they are on
- The Effective date within Highways by Exor is set to the year you want to publish
- The TRADAS Public Database is up to date
- Nobody is still working with the temporary statistics produced during an earlier publish
- Nobody is editing count site or traffic sections. If you want to start the publish immediately after making such edits, run the manual Update Count Site function (see the **Update count site in TRADAS** section).

Now you are ready to publish traffic statistics.

5.2.2 Starting the publish process

The publish process can be started by:

- Selecting the publish type (ANNUAL, WEEKLY, MONTHLY, or DAILY)
- Entering the date for which statistics should be published (only one date is needed for ANNUAL statistics, but a range indicated by a beginning and end date are needed for other types of publish)
- Clicking on the [Start Pre-publis] button on the Traffic Interface Manager form (shown below) after selecting publish dates.

**Note:** See the **Publishing Historical Data** section for more information about publish dates.
5.2.3 Temporary Statistics Records

The result of the first part of the publish process is a set of temporary traffic statistics records. These temporary or pre-published statistics items have different names than committed, permanent statistics ones.

The naming convention for these temporary statistics record types is that they are the same as the permanent statistics records with a “Z” in the name instead of an “S”. The names of permanent and temporary statistics are listed below:

Users can view all pre-published statistics using normal Asset Manager and Spatial Data Manager functions.

5.2.4 Committing published statistics to the enterprise database

Once you are satisfied with the statistics being published you can commit, or save, them permanently to the Highways by Exor database.

To commit the statistics click on the [Commit Statistics] button.
5.2.5 Using other Highways by Exor functions during the publish process

Traffic Sections and Count Site records may not be edited during the publish process. This is necessary to ensure that the statistics records generated by the publish match the count sites and traffic sections that they are meant to match. It means that many all editing functions that might change any traffic section or count site record cannot be used during the publish. If you try to edit a count site, traffic section or other feature that is locked you will see an error message like the one shown in Figure 14.

There are also a number of network editing functions that will have no effect on the relationship between count sites and traffic sections. These functions, which are listed below, will continue to be available during the publish process.

- Rescale
- Resequence
- Reverse
- Recalibrate
- Reclassify
- Close element
- Close route
- Split

Figure 14 – Locked feature message
5.2.6 Stopping the publish process

An option during the publish process is “stop publish”. The “stop publish” option will unlock CS, TS, and related network element records, but not change temporary inventory item values for traffic statistics. This enables users to continue working while temporary statistics are reviewed at length CS and TS values are modified.

Users will not be able to go straight from “end/pause” state to commit because changes might be made to CS and TS records.

All query and display functions can continue to be used during the publish process.
6 Troubleshooting

This chapter lists and explains messages you might see in Traffic Interface Manager by Exor

6.1 Error Messages

This section lists a number of error messages that begin with “TM-000”. You may see these with or without the prefix, so message “TM-0002” is the same as message “2”.

6.1.1 9993: No Job header record found
There is a problem. Stop and re-run the publish process. If this does not work contact technical support.

6.1.2 9994: No prior year TSDA available for growth factoring

6.1.3 9995: Multiple highways count sites for TRADAS site X

6.1.4 9996: Multiple AADW statistics for TRADAS site X

6.1.5 9997: Highways site X does not exist in TRADAS
A count site has been listed in the table of sites for which statistics are to be published that does not exist in TRADAS. (This refers to the actual existence of the site not the existence of data.). If all the site attributes are re-entered into Highways then they will be added to the TRADAS database. (See Chapter 4 for information about editing data.)

6.1.6 9998: TRADAS site X does not exist in highways
There is a count site in TRADAS that is not in the table of sites for which statistics are to be published. (This refers to the actual existence of the site not the existence of data.). Add the site to the Highways database. (See Chapter 4 for information about editing data.)

6.1.7 9999: Unhandled exception
There is a problem. Contact technical support.

6.1.8 I-700 one way flow should have a primary direction of N or E
A count site or traffic section has been assigned one way status (One way flow = Y) and a primary direction value of W or S. This is not allowed. Change the primary direction value or the one way status value.

6.1.9 TM-0001: CS should only reside on at most two sections
The count site is being located on more than two datum sections. This may be because the site is located at the intersection of two sections (which the system counts as location on two sections). Use Asset Manager to select the count site and edit its location. Do not locate count sites at intersections of datum elements. (See Chapter 4 for information about editing data.)
6.1.1.10 **TM-0002: Mismatched pattern site**
The publish process has encountered a mismatch between the pattern site values of a traffic section and a count site along it. The Site Number for the count site and Section Id for the traffic section indicate the features for which the values do not match. Use Asset Manager to select the count site and traffic section and correct one or the other. (See Chapter 4 for information about editing data.)

6.1.1.11 **TM-0003: Mismatched class site**
The publish process has encountered a mismatch between the class site values of a traffic section and a count site along it. The Site Number for the count site and Section Id for the traffic section indicate the features for which the values do not match. Use Asset Manager to select the count site and traffic section and correct one or the other. (See Chapter 4 for information about editing data.)

6.1.1.12 **TM-0004: Primary direction should be N or E for two way flow**
Invalid primary direction values for count sites or traffic sections with two-way flow were identified during the pre-publish process. Edit the records and start the publish process again. (See Chapter 5 for information about publishing traffic statistics.)

6.1.1.13 **TM-0005: Primary TS already set**
A count site is being associated with a second traffic section that has the same primary direction as the first. If a count site is shared by (is located on) two traffic sections then they must have different primary direction values. Change the primary direction value of one of the traffic sections. (See Chapter 4 for information about editing data.)

6.1.1.14 **TM-0006: Secondary TS already set**
A count site is being associated with a second traffic section that has the same secondary direction as the first. If a count site is shared by (is located on) two traffic sections then they must have different secondary direction values. Change the secondary direction value of one of the traffic sections. (See Chapter 4 for information about editing data.)

6.1.1.15 **TM-0007: The Count Site name cannot be updated**
Once a count site record has been created its name or Site No. can not be changed. This is necessary to preserve data integrity with historic statistics. If necessary, create a new site with a new number. (See Chapter 4 for information about editing data.)

6.1.1.16 **TM-0008: Changes cannot be made whilst the publish is in progress**
The publish process locks count site and traffic section records so that they cannot be edited. Either stop the publish process by clicking on the Stop Publish button on the Publish Traffic Data form (TMWEB0010) or wait until the publish process is finished.

6.1.1.17 **TM-0009: The Count Site Identifier cannot be updated**
Someone is trying to update the count site where it is a foreign key *e.g.*, on a CSCU record. Once a count site record has been created its name or Site No. can not be changed.

6.1.1.18 **There are no active jobs**
This is the normal message on the Publish Traffic Data form. (See Chapter 5 for information about publishing traffic statistics.)
6.1.1.19  TM-0011: Cannot start pre-publish as there is already an active job
You have attempted to start a publish job but one is already running, possibly started by another user. Either stop the ongoing publish job or wait for it to finish.

6.1.1.20  TM-0012: There are CS audits not processed by TRADAS
Changes have been made to count site records in the Highways that have not been passed to TRADAS. Run the count site update process manually or wait a few minutes for the update to take place automatically. (See the Count site update in TRADAS section.)

6.1.1.21  TM-0013: More than one active publish job found
This is a system data error – you should contact support if you see this.

6.1.1.22  TM-0014: Inventory Item not found
This is a system data error – you should contact support if you see this.

6.1.1.23  TM-0016: No Parent Inventory Item found at this location
There is no parent traffic section for the count site at this location. First create a traffic section over this location, and then locate the count site. (See Chapter 4 for information about editing data.)

6.1.1.24  TM-0017: >1 Parent Inventory Item found at this location
There is more than one traffic section at the location of the count site you are editing.

6.1.1.25  TM-0018: Parent Inventory Item not found
The count site you are editing has no parent item.

6.1.1.26  TM-0019: Different values found on parents
A count site is being saved that has different factor group values to the traffic section that it is located on. The factor group attribute (Pattern Site or Class Site) and the value is shown in the error message. Change the count site value so that it matches, or change the traffic section value.

6.1.1.27  TM-0020: Values differ between parent and child
The pattern site or class site values of the count site you are modifying differ from those of the parent traffic section. Change the values for the traffic section. (See Chapter 4 for information about editing data.)

6.1.1.28  TM-0021: Too many locations exist for this item:
More record locations are being assigned to a feature than are allowed. One example is that a third location is being assigned to a count site, or a second is being assigned to one with one-way flow. Check to see how many locations the feature is allowed to have.

6.1.1.29  TM-0022: Traffic Section change results in Count Sites with invalid Factor Group Information
A change to a traffic section has resulting in rippled factor group membership (Pattern Site or Class Site) changes to one or more count site records that are shared another traffic section with a different factor group membership values.

6.1.1.30  TM-0023: Publish job not initialized.
The publish job has not been started correctly. This is a system error – you should contact support if you see this.
6.1.1.31 TM-0024: Stop already in progress
The “Stop Publish” button has been clicked twice, probably after the “Back” button was used to view the form in an earlier stage. Do nothing, the publish job is being stopped.

6.1.1.32 TM-0025: Stop not correctly initialized
The “Commit Statistics” button has already been clicked, probably after the “Back” button was used to view the form in an earlier stage. Do nothing, the publish job is being stopped.

6.1.1.33 TM-0026: Job already suspended
You have attempted to suspend a publish job but it has already been suspended, possibly by another user.

6.1.1.34 TM-0027: Update of link data not allowed
Data in the table TM_PUBLISH_LINK table is created by the pre-publish process and cannot be modified manually.

6.1.1.35 TM-0028: Commit already in progress
The “Commit” button has been clicked twice, probably after the “Back” button was used to view the form in an earlier stage. Do nothing, the statistics are being created.

6.1.1.36 TM-0029: Commit not correctly initialized.
The commit process has not been launched correctly. This is a system error – you should contact support if you see this.

6.1.1.37 TM-0030: Delete of statistics cannot be performed.
The job status is not appropriate to perform a statistics delete. This is a system error – you should contact support if you see this.

6.1.1.38 TM-0031: There are statistics already generated for the year that will be overwritten. Continue.
Traffic Statistics have already been generated for this year. If you continue then the existing statistics will be overwritten.

6.1.1.39 TM-0032: The current job was not started by you, are you sure you wish to stop it?
This message appears when you are stopping a publish that has been started by another user. It is a warning message only.

6.1.1.40 TM-0033: Job not at the appropriate status to transfer TRADAS data.
This message appears when the job is not at a status to receive the data back from Tradas. The problem will have to be resolved by Exor or Chaparral staff.

6.1.1.41 TM-0034: Column cannot be found in inventory table.
This message appears during system configuration and indicates a mismatch between Highways and TRADAS metadata. The problem will have to be resolved by Exor or Chaparral staff.

6.1.1.42 TM-0035: Cannot read TRADAS metadata table.
This message appears during system configuration and indicates a mismatch between Highways and TRADAS metadata. The problem will have to be resolved by Exor or Chaparral staff.
6.1.1.43 TM-0036: TRADAS metadata conflict. Inventory type already exists.
This message appears during system configuration and indicates a mismatch between Highways and TRADAS metadata. The problem will have to be resolved by Exor or Chaparral staff.

6.1.1.44 TM-0037: TRADAS metadata problem. Metadata is of the wrong format.
This message appears during system configuration and indicates a mismatch between Highways and TRADAS metadata. The problem will have to be resolved by Exor or Chaparral staff.