



IntelliRoute<sup>®</sup> with MileMaker<sup>®</sup>

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**intelli**route<sup>®</sup>

User Guide



# IntelliRoute<sup>®</sup> with MileMaker<sup>®</sup>

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# intelliroute<sup>®</sup>

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## User Guide

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# The IntelliRoute® Family of Products

The IntelliRoute family of products is the next generation of Rand McNally software solutions for the transportation industry. These products operate as companion products to MileMaker, the industry standard for freight rating. At the heart of the IntelliRoute products is Rand McNally's new geographic database for North America. With 100m positional accuracy, this data provides unparalleled precision for mileage calculation and route creation. The IntelliRoute family of products combines this data with sophisticated software, tailored and updated to meet the diverse and evolving operational needs of the transportation industry. This includes mileage calculation, route creation, real-time fleet management, fuel tax reporting, customer service, and driver satisfaction.

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## IntelliRoute® with MileMaker®

IntelliRoute with MileMaker provides motor carriers and private fleet shippers with the ability to handle routes for a mix of vehicle combinations, with a highly accurate mileage and routing database for fuel tax reporting, better customer management, and integration with dispatch, fuel management, or other operational software. Among its features, IntelliRoute with MileMaker offers fundamental mileage calculations, detailed route information, and network customization tools.

### Features

IntelliRoute with MileMaker provides the following features:

- MileMaker HHG mileages and routes.
- MileMaker Practical mileages and routes, for MileMaker customers who are currently using Practical mileages to set rates.
- Lowest-Cost routes, based on a set of factors that includes cost of time, fuel cost, maintenance cost, and toll road cost.
- Quickest mileages and routes based on the fastest truck-usable route.
- Archival and retrieval function to save route information for use in fuel tax reporting and fleet analysis.
- Route itineraries and maps.
- Location searches for place names, Standard Point Location Codes (SPLC), ZIP Codes, latitude/longitude coordinates, junctions, and custom names.
- State mileage breakdowns.

- Advanced Rating Calculator.
- System administration tools.
- Routing for all common vehicle and trailer configurations.
- RoadWork™ online road construction updates that automatically affect your route itineraries.
- A Fuel Network Manager so you can use the database of fuel locations to set up a custom fuel network.
- Importing and plotting of latitude and longitude positions for custom locations such as terminals, trucks, and customer sites.
- Proximity searches to find backhaul opportunities, maintenance facilities, or trucks within a range of a location.
- (Optional) Access to Hazardous Materials mileages and routing based on specific commodity.
- Truck-Type Violation Indicators display in the route itinerary.
- Toll cost breakdown results for Quickest or Lowest-Cost routes.
- Weigh station feature for display and search.
- Rest area feature for display.
- Update via Internet feature for downloading toll costs and other updates from the Internet and for viewing the download history log.
- Canadian postal code support.
- Microsoft Excel Add-In facility for providing IntelliRoute mileage information within a Microsoft Excel worksheet.
- IntelliRoute® Fuel feature allowing you to obtain fuel-optimized trip planning via the IntelliRoute® Fuel online service.
- IntelliRoute® Lane Rates feature allowing you to obtain current market rate index information for a specific lane via the IntelliRoute® Lanes Rates online service.
- IntelliRoute® Streets feature allowing you to obtain street-level routing and mapping for the Quickest and Lowest-Cost Route Inquiries.

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## IntelliRoute® Express Server

IntelliRoute Express Server allows the administrator to set up, manage, and monitor the server and client functions.

## Features

IntelliRoute Express Server includes features that allow you to:

- Monitor server and client activity.
- Set up and administer client user information and passwords.
- Modify server startup parameters.
- Lock route/mileage processing options as appropriate for your site.
- Set up rate tables that are used by clients to calculate a rate quote.
- Monitor and update transaction and license information.
- Access all of the IntelliRoute with MileMaker functionality through an application programming interface (API).

Client Applications are available for:

- Windows® XP SP2, Windows® Vista™ Business, Windows® 2003 Server.
- UNIX (AIX 5.2, SCO OpenServer 5.0.7, SCO UnixWare 7.1, HP-UX 11i v1, Solaris 10)
- AS/400 (i5/OS V5R3)

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## Using this Guide

### Shortcut Keys

Shortcut keys are provided to give you quick keyboard access to menus, menu commands, and options in dialog boxes. To use a shortcut key, press **ALT** and then press the underlined letter associated with the function. For example, to show or hide the Compass using keyboard commands, hold down the **ALT** key and press **V**, and then press **C** (**ALT+V,C**).

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## Getting Help

### Online Help

#### The Help System

Online Help is available to provide a quick review of every menu and toolbar function. You can access help information through the IntelliRoute **Help** menu or by clicking the **Help** button when it appears in a dialog box.

In a help window, click on underlined items to display more information about that topic.

#### Context-Sensitive Help

Context-sensitive help is available online by pressing **F1**. You will see a pop-up window that provides information relevant to where you are in the IntelliRoute application.

To display help for a menu item or button, click the **Topic Help** button on the toolbar. Your cursor turns into a question mark. Drag the question mark over an IntelliRoute menu item or button, then click to display information from the Help system on that topic.

### Status Bar and ToolTips

To get quick program information, check the status bar, which may prompt you for your next action or inform you of the state or use of a selected item. The status bar appears at the bottom of the IntelliRoute window. When you move the mouse

pointer over an IntelliRoute menu command, a brief description appears in the status bar.

When you move the mouse pointer across a toolbar item, the status bar displays the function of that icon.

## User Guide

The product User Guides supplement the online Help by providing task-based steps to help you through the features of IntelliRoute. The User Guides also provides screen samples, sometimes with call-outs for important objects.

## Technical Support

### Telephone Support

Telephone technical support is also available to IntelliRoute customers. You will receive prompt and knowledgeable technical help. If you have a problem using IntelliRoute and cannot solve it by using this manual or the online Help documentation, call Rand McNally Technical Support at **(800) 234-4069** Monday through Friday between 8 a.m. and 5 p.m. CST. Please be prepared to tell the customer service representative:

- Your name and IntelliRoute accounts payable number.
- Which version of IntelliRoute you are using.
- Your hardware and operating system.
- The wording of any error messages that may have appeared.
- A step-by-step summary of the function you were using, the problem, and what you have done so far to correct the problem.

### Online Support

For information about technical issues, you can also connect to the Internet site at <http://www.trucking.randmcnally.com/>.

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## Activation Code Requests

Each product has an implementation code that enables us to determine certain aspects of your product such as your contract renewal data and the version you are operating.

If a message appears asking you for an activation code, it may mean that your contract period has expired. Please call Rand McNally at the telephone number supplied on the screen to obtain your activation code.

If a message appears asking you for an activation code, it may mean that you have exceeded the number of users stipulated in your contract. Please call Rand McNally at the telephone number supplied on the screen to add additional users to your license.

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## System Requirements

IntelliRoute with MileMaker can be installed as Windows standalone or Local Area Network (LAN).

### Windows Standalone

To run IntelliRoute with MileMaker on a Windows Stand-Alone system, you will need:

- Windows® XP SP2 or Windows® 2003 Server or Windows® Vista™ Business.
- 265 MB of available hard drive space.

### Local Area Network (LAN)

To run IntelliRoute with MileMaker on a LAN system, you will need:

- Windows Server® 2003 or Windows® Vista™ Business or Windows® XP SP2.
- 265 MB of available hard drive space.

### IntelliRoute Express Server

To run IntelliRoute Express Server, you will need:

- Windows Server® 2003 or Windows® Vista™ Business or Windows® XP SP2.
- 350 MB of available hard drive space.

## IntelliRoute Clients

To run IntelliRoute with MileMaker clients, you will need:

Windows Text:

- Windows® XP SP2 or Windows® Vista™ Business or Windows® 2003 Server.
- 80 MB of available hard drive space.

Windows Mapping:

- Windows® XP SP2 or Windows® Vista™ Business or Windows® 2003 Server.
- 80MB of available hard drive space.

UNIX:

- AIX 5.2, SCO UnixWare 7.1, SCO OpenServer 5.0.7, HP-UX 11i v1, or Solaris 10.
- 40 MB of available hard drive space.

AS/400 (iSeries):

- i5/OS V5R3
- 40 MB of available hard drive space.

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## Installation Instructions

IntelliRoute with MileMaker is supplied on a single CD-ROM. This CD is your master copy of IntelliRoute with MileMaker, and should be stored in a safe place when not in use.

The setup program automatically installs IntelliRoute and its associated files onto the hard disk of your computer. Before you can use IntelliRoute, you must run the setup program.

### Using the Setup Program



To install IntelliRoute:

1. Insert the IntelliRoute CD-ROM into the CD-ROM drive.
2. On the taskbar, click the **Start** button, and then click **Run**.

3. In the **Run** dialog box, type **D:\Setup**, where **D:** represents the letter of your CD-ROM drive, and click **OK**.
4. Follow the prompts on the screen to complete the installation.

## Starting IntelliRoute



To start IntelliRoute:

1. On the taskbar, click the **Start** button.
2. Point to **Programs**, then point to **Rand McNally**, and then click **IntelliRoute with MileMaker**.



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# Introduction

This chapter provides a brief description of the types of inquiries provided by IntelliRoute and details what you need to know before you begin entering mileage and route inquiries.

## Types of Inquiries

IntelliRoute with MileMaker supports mileage inquiries, route inquiries, and batch processing, which allows you to create a file containing several mileage and/or route inquiries that can be executed at the same time.

### Mileage Inquiries

A mileage inquiry produces a report that shows the number of miles between the locations you enter in a mileage inquiry. There are three types of mileage inquiries:

- **MileMaker HHG Mileage**, which calculates the shortest distance between any locations over truck-usable roads. The inquiry produces a report based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG). All MileMaker HHG Mileage inquiries give you HHG Tariff Mileages, which are used as a standard for freight rating and auditing.
- **MileMaker Practical Mileage**, which calculates the most time-efficient route between the locations entered using the same road network database as MileMaker HHG inquiries. MileMaker Practical Miles are not calculated with HHG tariff rules.
- **Quickest Mileage**, which calculates the fastest (shortest time) truck-usable mileage between two or more locations using the new IntelliRoute GPS-accurate road network.

### Route Inquiries

A route inquiry is similar to a mileage inquiry, except that in addition to the mileage data, the route inquiry also produces a report with detailed route information. Route inquiries can also produce a breakdown of the mileage by state. There are four types of route inquiries:

- **MileMaker HHG Route**, which calculates the shortest distance truck-usable route between the locations entered. It calculates the route based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG).
- **MileMaker Practical Route**, which calculates the most time-efficient route between the locations entered using the same road network database as MileMaker HHG inquiries.

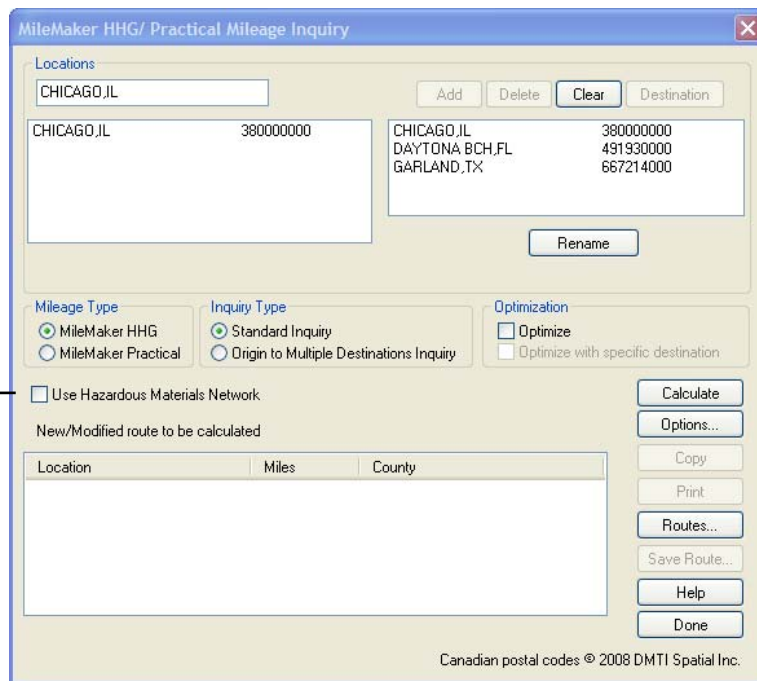
- **Quickest Route**, which calculates the fastest (shortest time) truck-usable route between two or more locations using the new IntelliRoute GPS-accurate road network.
- **Lowest-Cost Route**, which calculates the lowest-cost truck-usable route between locations using the new IntelliRoute GPS-accurate road network.

An example of a mileage inquiry dialog box is shown below. Although each mileage and route inquiry dialog box is unique, they have many entry fields in common. For example, all inquiry dialog boxes require that you enter location information and indicate whether you want to optimize the list of locations you've entered.

Note: Note that the check box **Use Hazardous Materials** is visible only if your company has purchased the Hazardous Materials special feature.

**Figure 2-1:** A sample inquiry dialog box

This option is visible only if your company has purchased IntelliRoute with MileMaker with the Hazardous Materials feature



## Batch Processing

IntelliRoute also supports batch processing, which you can use to create a file containing several mileage and/or route inquiries that can be processed sequentially without user intervention. For more information on the Batch Processing option, see Chapter 8.

## What's Next

The remaining sections of this chapter discuss what you need to know before you begin entering inquiries, particularly the different methods of entering locations. For example, instead of specifying a city and state, you might want to enter a location using its ZIP Code, the name of a truck stop, or even its latitude and longitude.

Detailed information about entering mileage inquiries is presented in Chapter 3; detailed information about entering route inquiries is presented in Chapter 4.

---

## Before You Enter an Inquiry

This section describes information common to entering mileage and route inquiries. For information on:

- How to enter locations, see “Considerations for Entering Locations” below.
- Changing the contents of the location list after you have made one or more entries, see “Modifying the Location List” on page 18.
- Reusing the latest location list you entered, see “Reusing the Previous Location List” on page 20.
- Saving a location list, see “Working with Custom Name Manager” on page 21. This feature is useful if you use a particular location list frequently.
- Specifying whether IntelliRoute should return a zero mileage or an error message when the same location is entered as both the origin and destination, as the origin and via point, or as the via point and destination, see Chapter 5.

## Considerations for Entering Locations

“Location” is a general term that describes an origin, via point, or destination. In IntelliRoute, locations are specified using the same formatting characteristics regardless of the inquiry type.

When you open one of the inquiry dialog boxes in IntelliRoute, it will have a **Locations** area like the one shown below. Use this area to enter the locations along your route.

**Figure 2-2:** Location entry fields

The screenshot shows a window titled "Locations" with a list of two entries. Each entry has a text field for the location name and a text field for a ZIP code. The first entry is "DAYTONA BCH,FL" with ZIP code "491930000". The second entry is "CHICAGO,JL" with ZIP code "380000000". Above the list are buttons for "Add", "Delete", "Clear", and "Destination". Below the list is a "Rename" button.

To specify a location, enter a city name, followed by a state or province name or code. Do not enter a space between the comma after the city name and the state or province name that follows. For example, you could enter CHICAGO,IL or CHICAGO,ILLINOIS. Spaces are only used to separate city names that contain more than one word, such as DAYTONA BEACH,FL as illustrated above.

You can also enter the following in the location field: a truck stop, a junction, an SPLC, a ZIP Code, a custom name, or the latitude and longitude. For details on how to enter each type of location, see “Accepted Formats for the Location Entry Field” on page 16.

When you finish entering a city and state or province, that city should automatically appear in the list box below the **Locations** box. If it does not, check to make certain that you have spelled the name and the code correctly and that there is no space between the state code and the comma that precedes it.

If there are two cities with the same name in the same state, they will appear in the list box with a county code. Make sure that the correct city is highlighted before adding it to your location list.

You can also enter part of a city name followed by the state, such as CHIC,IL or D BEACH,FLORIDA. IntelliRoute displays a list of possible matches in the list box below the **Locations** box. You can select the one you want to add to the list of locations.

After you add the location to your location list, the name in the **Locations** box is highlighted, as shown below. Simply type your next location over this one; the new entry will automatically replace the highlighted one.

**Figure 2-3:** Entering locations

| Location       | Code      |
|----------------|-----------|
| DAYTONA BCH,FL | 491930000 |
| CHICAGO,IL     | 380000000 |
| DAYTONA BCH,FL | 491930000 |

Continue to enter locations until all of the locations along your route appear in the location list. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

If you type a complete location name (for example, a name, a comma, and a state or a five-digit ZIP Code) and IntelliRoute cannot match a specific location to it, a browse list appears in the **Locations** list. You will need to identify the correct location, select it, and then add the location to your list. If you do not find the location in the list, check to make sure you have typed in the location name correctly.

Once you have entered your list of locations, you can:

- Insert a location anywhere in your list (see page 16).
- Resequence the location list (see page 19).
- Delete a location from your list (see page 19).

- Optimize your location list (see page 19).
- Reuse the last location list (see page 20.)
- Save the location list (or a single location) with a unique name so you can reload the list quickly at any time (see page 21).

---

Note: After processing a mileage inquiry, you can click **Clear** to clear the list and enter a new list of locations, or you can click **Close** (the small "x" in the upper right hand corner of the dialog box) to exit the dialog box.

---

## Accepted Formats for the Location Entry Field

You can enter locations into IntelliRoute using any of the following methods, in any combination.

- Enter a city name and a state or province, with no space after the comma.  
Example: **DAYTONA BEACH,FL** or **DAYTONA BEACH,FLORIDA**
- Enter a truck stop name and state, with no space after the comma.  
Example: **BROOKE SUNOCO PLZ,IA** or **BROOKE SUNOCO PLZ,IOWA**
- Enter a junction, with highway names separated by a slash and no space after the comma. Use the abbreviations shown below.  
Example: **I55/I94,IL** or **I55/I94,ILLINOIS**

| Abbreviation | Represents                        |
|--------------|-----------------------------------|
| I            | Interstate highway                |
| U            | U.S. highway                      |
| S            | State highway                     |
| P            | Provincial highway                |
| T            | TransCanada highway               |
| F            | Federal highway                   |
| O            | Other roadway, such as local road |
| C            | County                            |

- Enter locations by SPLC.  
Example: **380000**  
This method is necessary to process military locations in the manner acceptable to the Department of Defense.
- Enter a 5-digit U.S. ZIP Code.  
Example: **60620**
  - Large metropolitan areas may have multiple ZIP Codes.

- A single ZIP Code may include multiple locations. In this case, a browse list will appear with location choices. Alternatively, you can request that IntelliRoute use a default location, as described below. Note that this applies to Quickest and Lowest-Cost inquiries also.

Note:

---

When multiple locations are tied to a ZIP Code, ZIP Codes displayed in the browse list may be suffixed by “\*”. If an “\*” is present, the ZIP Code is the default ZIP Code for MileMaker HHG, MileMaker Practical, Quickest, and Lowest-Cost inquiries.

---

- Enter a Canadian postal code. Canadian postal codes can be 6 alphanumeric characters (example A0A1A0) or 7 alphanumeric characters with a central space (example: A0A 1A0).
- Enter the latitude and longitude point pair. Enter the latitude, followed by a space, and then the longitude. Enter both values using the same number of decimal places.
  - For MileMaker Practical Mileage and Route inquiries, you can enter the latitude/longitude pair using two decimal positions.  
Example: **38.67 90.25**
  - For Quickest and Lowest-Cost inquiries, you can enter the latitude/longitude pair using six decimal positions.  
Example for Quickest and Lowest-Cost inquiries: **39.223542 94.694265**

## Entering a Street Address Location

---

The IntelliRoute® Streets feature is a separately purchasable option.

---

The Quickest and Lowest-Cost Route Inquiry screens allow the entry of street addresses for origins and destinations only. All other points in between (via points) must be the standard IntelliRoute® point locations, sometimes referred to as general location entries. For more information on general location entries, see Accepted Formats for the Location Entry Field.



To enter a street address:

1. Enter one of the following in the **Address** box:
  - Enter a complete street address:  
Example: **9855 Woods Drive**  
*or*
  - Enter only a street name (see note below after step 3):  
Example: **Woods Drive**  
*or*

- Enter a intersection, with intersection names separated by “and”, “@”, “at”, or “&”:

#### Examples

MAIN ST and CRAWFORD AVE

MAIN ST @ CRAWFORD AVE

MAIN ST at CRAWFORD AVE

MAIN ST & CRAWFORD AVE

2. Enter a city name and a state in the **City, St** box, with no space after the comma:

Example: **SKOKIE,IL** or, when required, an additional county code  
**DEERFIELD,CO,IL**

---

Note: When multiple locations are tied to the information you provided in the **City, St** box, a browse list may appear in the list box below the **City, St** box. If multiple locations are displayed in the list box, select the desired location.

---

3. Click **Add** or press ENTER. The location will appear in the list on the right.

---

Note: If providing an incomplete street address (street name only), a dialog may appear after you click **Add**, listing the best matches for the information you provided. Select the desired entry from this list, and click **OK**. Click **Cancel** if you wish to provide more complete information in the **Address** field.

---

For further information, see [Entering a Quickest Route Inquiry](#) or [Entering a Lowest-Cost Route Inquiry](#).

## Select Location Browse

The Select Location browse dialog appears in cases in which you may have incorrectly entered the name of a city, a state abbreviation, a name of a highway junction, or entered a ZIP Code with multiple locations.



To select a location:

1. Highlight your selection from the list of locations. Use the scrollbar if provided and/or necessary to search the list.
2. Click Select.

## Modifying the Location List

Once you have entered a list of locations, you can:

- Insert locations into the list (see below).
- Resequence the location list (see page 19).

- Delete locations from the list (see page 19).
- Optimize the locations in the list (see page 19).
- Use the Rename feature to group a list of frequently entered locations. You can also use this feature to rename a single location when you want to simplify its entry (see page 21).

## Inserting Locations

- To insert a location into the list:
  1. Add the location to the list, as described in the previous section. The location will be added to the bottom of the location list.
  2. To move the added location to a different position in the list, see “Resequencing the Location List” on page 19.

## Resequencing the Location List

- To resequence the locations in the list:
  1. Click on the location that you want to move.
  2. Click the location a second time and drag it to the correct place in the list.

## Deleting Locations

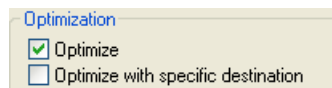
- To delete a location from the list:
  - Click on the location to select it, then click **Delete**.
  - or*
  - Double-click on the location.

You will be prompted to verify that you want to delete the selected location.

## Optimizing the Location List

IntelliRoute assumes that the first location in the list is your origin, the last location is your destination, and those in between are via points, unless you have selected the **Origin to Multiple Destination Inquiry** or have checked one of the optimization options. You can have IntelliRoute optimize your location list by selecting one of the Optimization options in the inquiry dialog box.

**Figure 2-4:** Optimization options



Optimizing the location list will reorder your locations so that the route will be the most logical from a geographic perspective.



To optimize a location list with no specified destination:

1. After you enter a list of locations, click the **Optimize** check box. Note that this option is available only after you have entered three or more locations in your location list.
2. Click **Calculate**. The following message will appear: “You have chosen Optimized Routing as your preference. Locations may be reordered if you proceed with routing. Do you want to continue with optimization?” Click **Yes** to continue. Click **No** if you do not want IntelliRoute to reorder your locations.
3. After the calculation is finished, the following message may appear: “Optimized Routing caused your locations to be reordered.” Click **OK** to continue.



To optimize a location list with a specified destination:

1. If you want IntelliRoute to use a specific location as the destination when optimizing the location list, click the **Optimize** checkbox, and then click the **Optimize with specific destination** check box.
2. In the location list, select the location that you want to designate as the destination.
3. Click **Destination**. A “D” will appear after the destination location.
4. Click **Calculate**. The following message will appear: “You have chosen Optimized Routing as your preference. Locations may be reordered if you proceed with routing. Do you want to continue with optimization?” Click **Yes** to continue. Click **No** if you do not want IntelliRoute to reorder your locations.
5. After the calculation is complete, the following message may appear: “Optimized Routing caused your locations to be reordered.” Click **OK** to continue.

## Reusing the Previous Location List

By default, the location list is reused after you execute an inquiry. If you would prefer not to reuse the previous location list, see Chapter 5 for information on clearing this option.

---

### Note:

IntelliRoute manages reusable location lists based on type of inquiry. This means that the location list you enter for a MileMaker HHG will be saved for a subsequent MileMaker HHG or MileMaker Practical inquiry (and the reverse). A location list you enter for a Quickest inquiry will be forwarded to a subsequent Quickest or Lowest-Cost inquiry (and the reverse).

---

## Working with Custom Name Manager

If you use a particular location list frequently, it is inconvenient to reenter each location every time you run an inquiry. You can use the **Custom Name Manager** feature in IntelliRoute to save a list of locations under a name you specify. When you enter the renamed location in the **Locations** box, the entire list of locations saved with the custom name will appear in the list as shown below. After you have saved the list of locations, you can edit or delete it at any time by choosing **Custom Name Manager** on the **Features** menu.

Note:

You can also rename a single location using this feature. For example, you might want to rename a location that you find difficult to spell.

There is a 50 location limit per custom name.

**Figure 2-5:** Creating a custom-named location list.

| Location Name  | ZIP Code  |
|----------------|-----------|
| CHICAGO,IL     | 380000000 |
| DAYTONA BCH,FL | 491930000 |
| GAYLORD,TX     | 671133000 |

## Saving a Custom-Named Location List

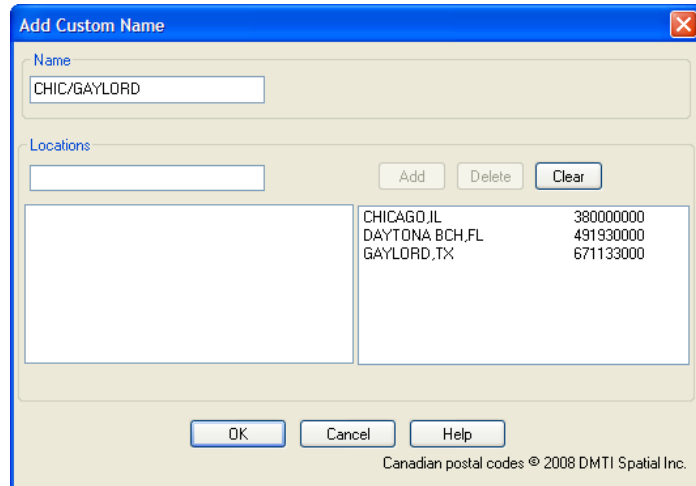


To save a location list using a custom-name:

1. Enter the list of locations you want to save to a custom name.
2. Click **Rename**. The Add Custom Name dialog box appears.
3. In the **Name** box, enter the name under which you want to save the locations. The name must contain at least four characters, which can include alpha, numeric, and forward-slash characters.

Do not use 3-, 5-, 6-, or 9-digit numbers in the **Name** box as this interferes with entering locations by ZIP Code or SPLC. You can use a combination of letters and numbers in the name as long as the name begins with a letter, for example: PAT12.

**Figure 2-6:** Saving a location list using a custom name.



4. If necessary, modify the list using standard location entry procedures.
5. Click **OK**.

**Note:**

For information on creating a custom named location list independently of an inquiry dialog box, see “Creating a Custom-Named Location List” on page 24.

**Network Users:** All users on a network share a single list of custom-named locations. Before changing or deleting a custom location name in the list on the network, it is important to consult with other users.

## Retrieving a Custom-Named Location List

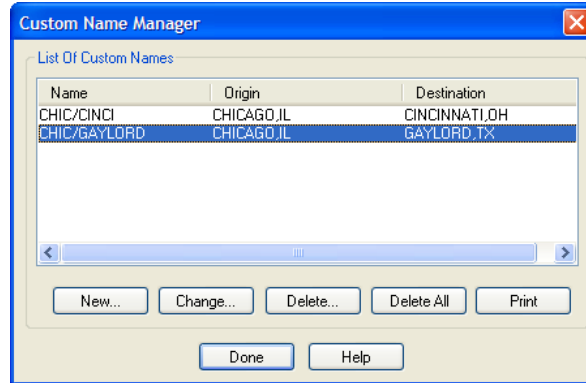
- ➔ To retrieve a custom-named location list in an inquiry dialog box:
  1. In the **Locations** field of an inquiry dialog box, type the name of a custom-named location (notice CHIC/GARLAND in the previous figure). The locations will appear in the list.
  2. Click **Add** to add the locations to the current list.

If necessary, you can add more locations to the list. This will not alter the custom-named location list unless you click **Rename** and save the list again.

## Changing a Custom-Named Location List

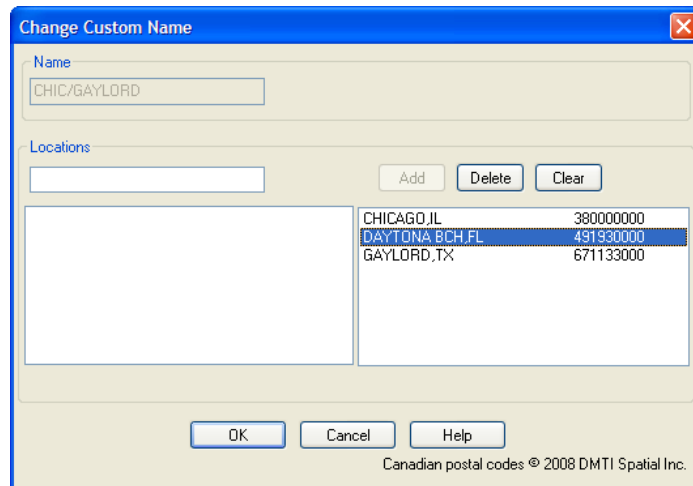
- ➔ To change an existing custom-named location list:
  1. On the **Features** menu, click **Custom Name Manager**. The Custom Name Manager dialog box displays a list of custom-named locations.

**Figure 2-7:** Selecting a custom location name.



2. To change the location list, click on the custom location name and then click **Change**. The Change Custom Name dialog box appears.
3. To add another location to the list, type the location in the **Locations** box and then click **Add**.
4. To delete a location, click on the location from the list on the right (as shown below), and then click **Delete**. When a message box prompts you to verify that you want to delete the location, click **OK**.

**Figure 2-8:** Changing a custom-name location list.



5. To delete all locations shown in the list in the right column, click **Clear**. When a message box prompts you to verify that you want to delete the locations, click **OK**.
6. When your changes are complete, click **OK**.
7. When a message box prompts you to verify that you want to replace the custom-named list, click **Yes**.
8. When a message box prompts you to acknowledge that the custom-named list was replaced, click **OK**.
9. To exit the Custom Name Manager dialog box, click **Done**.

## Deleting a Custom-Named Location List

- To delete custom-named locations:
  1. From the **Features** menu, select **Custom Name Manager**. The Custom Name Manager dialog box displays a list of custom-named locations.
  2. To delete one location from the list, click on the location you want to remove, and then click **Delete**. When a message box prompts you to verify that you want to delete the selected location, click **OK**.
  3. To delete all locations from the list, click **Delete All**. All locations are immediately removed from the list.
  4. To exit the Custom Name Manager dialog box, click **Done**.

## Printing Locations in a Custom-Named Location

- To print the locations in a custom-named location:
  1. From the **Features** menu, select **Custom Name Manager**. The Custom Name Manager dialog box displays a list of custom-named locations.
  2. To print locations for the selected custom location name, click on the location name, and then click **Print**.
  3. To exit the Custom Name Manager dialog box, click **Done**.

## Creating a Custom-Named Location List

- To create a custom-named location list:
  1. On the **Features** menu, click **Custom Name Manager**. The Custom Name Manager dialog box appears.
  2. To create a new custom-named location list, click **New**. The Add Custom Name dialog box appears.
  3. In the **Name** box, enter the name under which you want to save the locations. The name must contain at least four characters, which can include alpha, numeric, and forward-slash characters.  
  
Do not use 3-, 5-, 6-, or 9-digit numbers in the **Name** box as this interferes with entering locations by ZIP Code or SPLC. You can use a combination of letters and numbers in the name as long as the name begins with a letter, for example: PAT12.
  4. In the **Locations** box, enter the origin and then click **Add** or press ENTER. The location appears in the list on the right.

---

Note: If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

5. To add another location, type it over the highlighted text in the **Locations** box; the new entry automatically replaces the highlighted one.

Continue to enter locations until all locations you need appear in the list on the right. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

---

**Tip:** If you need to resequence the list of locations, see “Resequencing the Location List” on page 19.

---

6. Click **OK**. The Custom Name Manager dialog box appears.
7. To exit, click **Done**.

---

## Monitoring Inquiry Transactions

When you calculate a mileage or route inquiry, a transaction is deducted for each point-to-point calculation. For example, if you create an inquiry for the route from Chicago to Daytona Beach to Garland, two transactions are charged. Transactions are deducted from your total each time you calculate an inquiry.

---

**Tip:** Be sure to click the **Calculate** button only when your inquiry is completely specified.

---

IntelliRoute with MileMaker allows you to monitor your transaction usage and, depending upon the license package your company has, enter the updated license code to increase the number of transactions available or to extend the license period.

## Viewing Transaction Usage Information

➡ To monitor transaction usage by inquiry type and to determine the number of transactions remaining in your current license agreement:

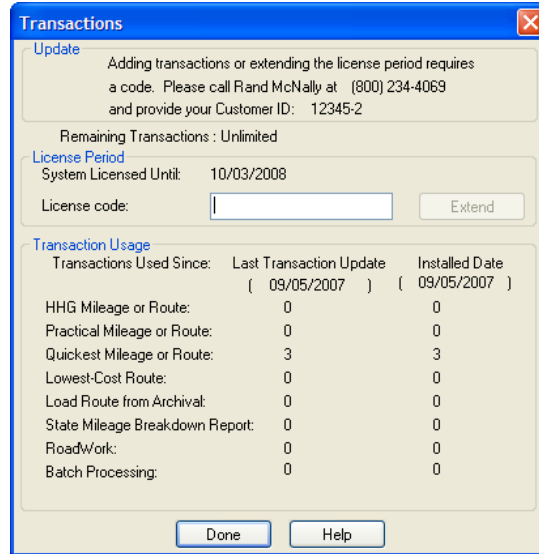
1. On the **File** menu, click **Transactions**. The Transactions dialog box appears.

---

**Note:** Because Rand McNally offers various licensing packages, (such as a specific or unlimited number transactions and a specific or unlimited license period) the information and options shown in this dialog box varies.

---

**Figure 2-9:** Viewing transaction usage information.



2. To view the number of transactions remaining in your current license agreement, notice the number following **Remaining Transactions** in the Transaction area of the dialog box.
3. To see a breakdown of transaction usage by inquiry type, notice the information in the two columns in the **Transaction Usage** area of the dialog box. The left column displays totals from the date of the most recent license update. The right column displays totals from the date IntelliRoute with MileMaker was installed.
4. To exit, click **Done**.

## Updating License Information

Before you update the number of transactions or time period for your current license agreement, you need to contact Rand McNally for the required code(s). Use the telephone number, and be prepared to provide Customer ID, shown at the top of the Transactions dialog box.



To update the number of transactions or time period for your current license agreement:

1. On the **File** menu, click **Transactions**. The Transactions dialog box appears.

Note:

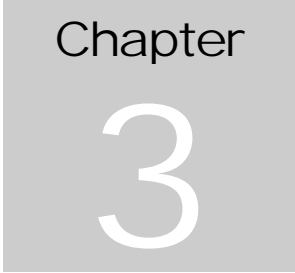
Because Rand McNally offers various licensing packages, (such as a specific or unlimited number transactions and a specific or unlimited license period) the options available to you may vary from those listed below. If your company has purchased an unlimited transaction package and/or an unlimited license period package, either or both of the following options will not be shown in the dialog box.

2. To update the number of remaining transactions, enter the **Encrypted Code** you received from Rand McNally in the **Transactions** area of the dialog box and then click **Add**.

3. To update the license period, enter the **Encrypted Code** you received from Rand McNally in the **License Period** area of the dialog box and then click **Extend**.
4. To exit, click **Done**.



# ENTERING MILEAGE INQUIRIES



---

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---

## Introduction

This chapter discusses the process for entering mileage inquiries.

A mileage inquiry calculates the number of miles between the locations you entered in the inquiry dialog box.

## Before You Begin

Before you calculate mileage, you might want to refer to the following chapters for information about entering inquiry information or setting options:

- For information about completing the fields in inquiry dialog boxes, refer to Chapter 2.
- For information about customizing the inquiry, such as indicating whether mileage calculations are shown in kilometers or miles, avoiding or using toll roads, etc., see Chapter 5.

---

Note: All screen examples in this chapter are shown with the check box **Use Hazardous Materials**. This option is visible only if your company has purchased the Hazardous Materials special feature. For information about using hazardous materials settings, see Chapter 5.

---

## Types of Mileage Inquiries

Before you calculate a mileage inquiry, you need to know whether you want to calculate mileage using MileMaker HHG, MileMaker Practical, or Quickest miles.

## MileMaker HHG Mileage Inquiries

MileMaker HHG Mileage inquiries determine the shortest distance between any two or more locations over truck-usable roads based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG).

All MileMaker HHG Mileage inquiries give you HHG Tariff Mileages, which are used as a standard for freight rating and auditing. IntelliRoute incorporates all of the complex HHG rules that affect mileage determination, and uses only those highways, bridges, and ferries designated as “truck-authorized” by the HHG mileage guide.

## MileMaker Practical Mileage Inquiries

MileMaker Practical Mileage inquiries calculate the most time-efficient mileage between the locations entered using the same road network database as MileMaker HHG inquiries. **MileMaker Practical Miles are not calculated with HHG tariff rules.**

## Quickest Mileage Inquiries

Quickest Mileage inquiries calculate the fastest (shortest time) truck-usable mileage between two or more locations. The mileage is determined using the new IntelliRoute GPS-accurate road network and your general mileage and routing preferences.

IntelliRoute with MileMaker also incorporates additional information as specified (Truck-Type or hazardous materials) when determining the mileage for a Quickest Mileage Inquiry.

---

# Entering Mileage Inquiries

## Entering a MileMaker HHG Mileage Inquiry

The MileMaker HHG Mileage inquiry provides mileages between sequentially entered pairs of locations. The returned mileage is the shortest using HHG rules and approved truck-usable roadways. MileMaker HHG Mileage inquiries can be calculated in miles only.

**Note:** Routes derived from this feature generally incorporate highways from the Surface Transportation Assistance Act (“STAA”) and the National Highway System (“NHS”) networks. However, not all locations can be accessed on the STAA network. Therefore, in some cases your route results may contain non-STAA highways.



To enter a MileMaker HHG Mileage Inquiry:

1. Do one of the following:
  - On the toolbar, click **HHG Mileage**.
  - or*
  - On the **Mileages** menu, click **MileMaker HHG Mileage**.

The MileMaker HHG/Practical Mileage Inquiry dialog box appears.

2. In the Locations box, enter the origin, and then click Add or press ENTER. The location appears in the list.

Note:

If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

3. To add another location, type the next city name over your previous location in the Locations box. The new entry automatically replaces the highlighted one. Continue entering locations until all of the locations along your route appear in the location list.

Tip:

If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

4. If hazardous materials restrictions apply to the inquiry, click Use Hazardous Materials Network.
5. Select the Inquiry Type as follows:
  - To find mileages between sequentially entered pairs of locations, click **Standard Inquiry**.
  - To find mileages between a single origin and each location entered, click **Origin to Multiple Destinations Inquiry**. Note that three or more locations must be entered.
6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
7. To apply additional customization features to your inquiry, click Route Options. See Chapter 5 for information on customization features.

**Figure 3-1:** Example of information entered for a MileMaker HHG Mileage Inquiry.

| Location       | Miles     | County |
|----------------|-----------|--------|
| CHICAGO,IL     | 380000000 |        |
| CHICAGO,IL     | 380000000 |        |
| DAYTONA BCH,FL | 491930000 |        |
| GARLAND, TX    | 667214000 |        |

8. To display the mileage information, click Calculate. The mileage will be displayed at the bottom of the dialog box as shown below.

**Figure 3-2:** Sample output from a MileMaker HHG Mileage Inquiry.

| MileMaker HHG Mileage |       |          |
|-----------------------|-------|----------|
| Location              | Miles | County   |
| CHICAGO,IL            |       | COOK     |
| DAYTONA BCH,FL        | 1088  | VOLUSIA  |
| GAYLORD,TX            | 1400  | LIPSCOMB |
| Total                 | 2488  |          |

## Entering a MileMaker Practical Mileage Inquiry

The MileMaker Practical Mileage Inquiry provides practical route mileages between sequentially entered pairs of locations using the same road network database as MileMaker HHG inquiries. The returned mileage reflects the most time-efficient route. MileMaker Practical Mileage inquiries can be calculated in miles or kilometers.



To enter a MileMaker Practical Mileage Inquiry:

1. Do one of the following:
  - On the toolbar, click **Practical Mileage**.
  - or*
  - On the **Mileages** menu, click **MileMaker Practical Mileage**.

The MileMaker HHG/Practical Mileage Inquiry dialog box appears.

2. In the **Locations** box, enter the origin, and then click **Add** or press ENTER. The location appears in the list.

---

**Note:** If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

3. To add another location, type the next city name over your previous location in the **Locations** box. The new entry automatically replaces the highlighted one. Continue entering locations until all of the locations along your route appear in the location list.

---

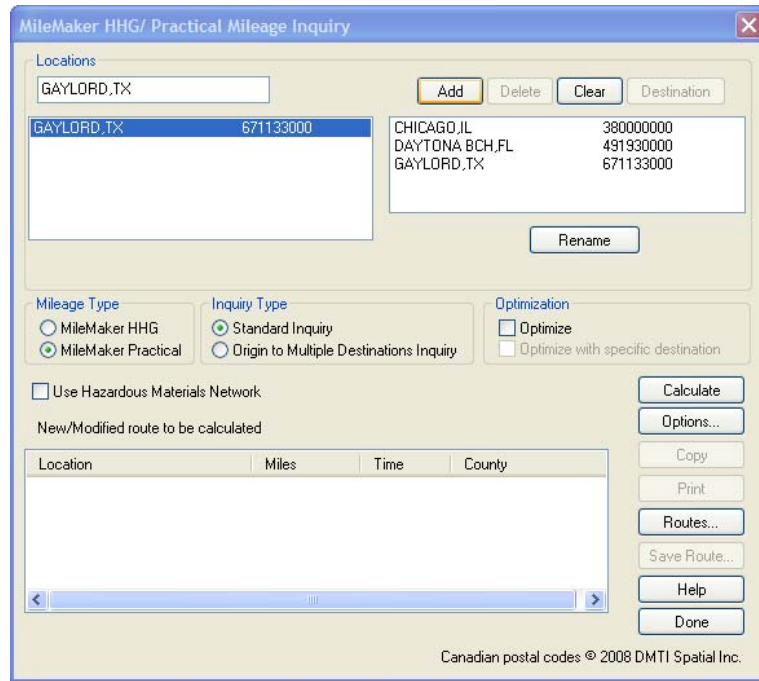
**Tip:** If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

---

4. If hazardous materials restrictions apply to this route inquiry, click **Use Hazardous Materials Network**.
5. Select the **Inquiry Type** as shown below. Note that the returned mileage reflects the most time-efficient route.

- To find mileages between sequentially entered pairs of locations, click **Standard Inquiry**.
  - To find mileages between a single origin and each location entered, click **Origin to Multiple Destinations Inquiry**. Note that three or more locations must be entered.
6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
  7. To apply additional customization features to your inquiry, click **Route Options**. See Chapter 5 for information on customization features.

**Figure 3-3:** Example of information entered for a MileMaker Practical Mileage Inquiry.



8. To display the mileage information, click **Calculate**. The mileage will be displayed at the bottom of the dialog box.

**Figure 3-4:** Sample output from a MileMaker Practical Mileage Inquiry.

| Location        | Miles | Time  | County   |
|-----------------|-------|-------|----------|
| CHICAGO, IL     |       |       | COOK     |
| DAYTONA BCH, FL | 1160  | 19:11 | VOLUSIA  |
| GAYLORD, TX     | 1465  | 42:12 | LIPSCOMB |
| Total           | 2625  | 61:23 |          |

## Entering a Quickest Mileage Inquiry

The Quickest Mileage Inquiry provides fastest (shortest time) truck-usable mileage between sequentially entered pairs of locations. The mileage is determined using the new IntelliRoute GPS-accurate road network and options you specify. Quickest Mileage inquiries can be calculated in miles or kilometers.



To enter a Quickest Mileage Inquiry:

1. Do one of the following:
  - On the toolbar, click **Quickest Mileage**.
  - or*
  - On the **Mileages** menu, click **Quickest Mileage**.

The Quickest Mileage Inquiry dialog box appears.

2. In the **Locations** box, enter the origin, and then click **Add** or press ENTER. The location appears in the list.

Note:

---

If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

3. To add another location, type the next city name over your previous location in the **Locations** box. The new entry automatically replaces the highlighted one. Continue entering locations until all of the locations along your route appear in the location list.

Tip:

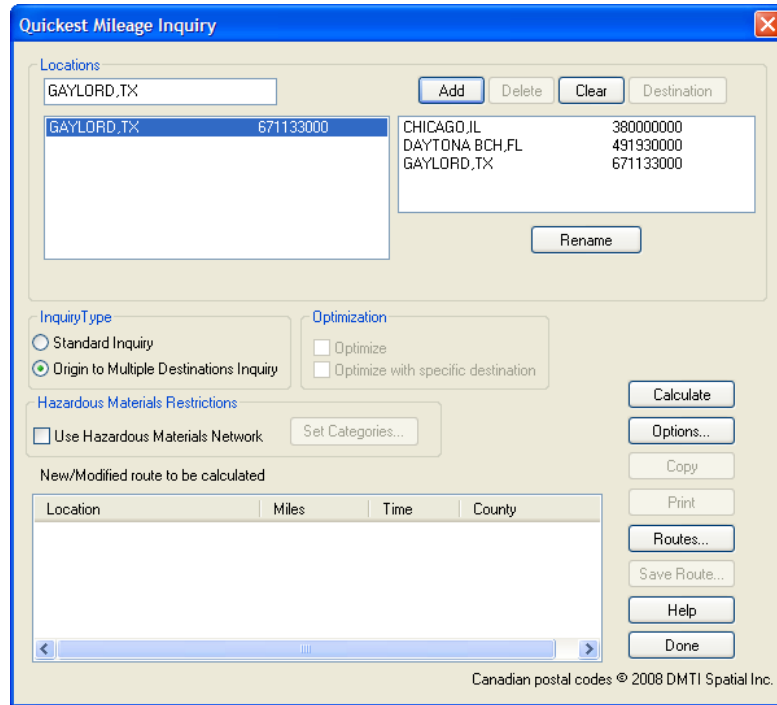
---

If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

---

4. If hazardous materials restrictions apply to this mileage inquiry, click **Use Hazardous Materials Network**. To specify the categories of hazardous materials that apply to this inquiry, click **Set Categories**. For more information, refer to Chapter 5.
5. Select the **Inquiry Type** as follows:
  - To find mileages between sequentially entered pairs of locations, click **Standard Inquiry**.
  - To find mileages between a single origin and each location entered, click **Origin to Multiple Destinations Inquiry**. Note that three or more locations must be entered.

**Figure 3-5:** Example of a Quickest Mileage Inquiry with Origin to Multiple Destinations Inquiry selected.

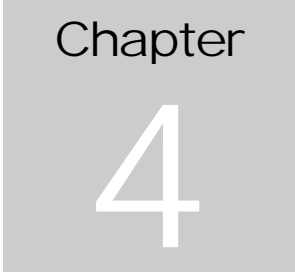


6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
7. To apply additional customization features to your inquiry, click **Route Options**. See Chapter 5 for information on customization features.
8. If the mileage calculation must consider parameters for truck configuration, such as vehicle width, length, and trailer options, click **Route Options** and then click the **Truck-Type Routing** tab. Specify the truck configuration information as needed and then click **OK**. For more information on entering truck configuration information, see “Setting Routing Based on Truck-Type” in Chapter 5.
9. To display the mileage information, click **Calculate**. The mileage will be displayed at the bottom of the dialog box.

**Figure 3-6:** Sample output from a Quickest Mileage Inquiry with Origin to Multiple Destinations Inquiry selected. Mileages are returned using Chicago as the origin for both destinations.

| Location        | Miles  | Time  | County   |
|-----------------|--------|-------|----------|
| CHICAGO, IL     |        |       | COOK     |
| DAYTONA BCH, FL | 1159.5 | 19:11 | VOLUSIA  |
| GAYLORD, TX     | 971.0  | 16:28 | LIPSCOMB |

# ENTERING ROUTE INQUIRIES



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# Introduction

This chapter discusses the process for entering route inquiries.

A route inquiry produces a report with detailed route information called a route itinerary. A route inquiry can also provide a *State Mileage Breakdown*, which shows the distance traveled in each state along the specified route. Quickest and Lowest-Cost Route inquiries also display route inquiry results on a map that labels the origin, via points, and destination.

## Before You Begin

Before you calculate a route, you might want to refer to the following chapters for information about entering inquiry information or setting options:

- For information about completing the fields in inquiry dialog boxes, refer to Chapter 2.
- For information about customizing the inquiry, such as indicating whether route calculations are shown in kilometers or miles, avoiding or using toll roads, etc., see Chapter 5.
- For information about scheduling driver breaks, see Chapter 5. Note that driver breaks must be set before you begin entering a route inquiry. They are applied to all route inquiry types. You can set up scheduled breaks for hours of service, fuel breaks, and food breaks. When you use driver break options, IntelliRoute displays scheduled breaks in the route itinerary. This allows IntelliRoute to calculate a more accurate estimated time of arrival.
- For information about display options for IntelliRoute with MileMaker, such as indicating the format for the route itinerary, displaying fuel stops, applying fuel network settings, and setting the sort order for State Mileage Breakdown, see Chapter 5.

---

Note: All screen examples in this chapter are shown with the check box **Use Hazardous Materials**. This option is visible only if your company has purchased IntelliRoute with MileMaker with the Hazardous Materials special feature. For information about using hazardous materials settings, see Chapter 5.

---

## Types of Route Inquiries

Before you calculate a route inquiry, you need to know whether you want to use the MileMaker HHG, MileMaker Practical, Quickest, or Lowest-Cost route.

### MileMaker HHG Route Inquiries

MileMaker HHG Route inquiries provide detailed information on the shortest distance truck-usable route between the locations entered. It produces a report based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG). Route calculation results can be displayed by Audit, State Mileage Breakdown only, or Full.

### MileMaker Practical Route Inquiries

MileMaker Practical Route inquiries provide detailed information on the most time-efficient route between the locations entered using the same road network database used for MileMaker HHG inquiries. **MileMaker Practical Routes are not calculated with HHG tariff rules.** Route calculation results can be displayed by MileMaker Practical Route only, State Mileage Breakdown only, or MileMaker Practical Route with State Mileage Breakdown.

### Quickest Route Inquiries

Quickest Route inquiries provide detailed information on the fastest (shortest time) truck-usable route between the locations entered. The route is determined using the new IntelliRoute GPS-accurate road network and your general routing preferences. Route calculation results can be displayed by Quickest Route only, State Mileage Breakdown only, or Quickest Route with State Mileage Breakdown.

### Lowest-Cost Route Inquiries

Lowest-Cost Route inquiries provide detailed information on the lowest-cost truck-usable route between locations. The route is determined using the new IntelliRoute GPS-accurate road network and your general routing preferences. Route calculation results can be displayed by Lowest-Cost Route only, State Mileage Breakdown only, or Lowest-Cost Route with State Mileage Breakdown.

---

# Entering a Route Inquiry

## Entering a MileMaker HHG Route Inquiry

The MileMaker HHG Route Inquiry provides detailed information on the shortest distance truck-usable route between the locations entered. This routing option is determined by total distance in accordance with the rules specified in the most current version (Release 19) of the Household Goods Mileage Guide (HHG). MileMaker HHG Route inquiries can be calculated in miles only.



To run a MileMaker HHG Route Inquiry:

1. On the **Routes** menu, click **MileMaker HHG Route**.  
The MileMaker HHG Route Inquiry dialog box appears.
2. Select one of the following **Inquiry Type** options:
  - **Audit**, to display mileages between key point to key point cities used in the route (if there are any). Predetermined key point distances are those found in the mileage chart pages in the most current version (Release 19) of the Household Goods Mileage Guide (HHG). Between key points and non-key points, the Audit route option shows the actual roads used, the direction traveled, and the number of miles on each road. If both points in a request are key points, only the mileage will be displayed.
  - **SMB Only**, to display the shortest distance between points along an HHG route, but only in a state-by-state listing. Miles are categorized as toll and non-toll. State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see Chapter 5.
  - **Full**, to display the complete detail for the route that results in the shortest distance between two points calculated in accordance with the rules in the most current version (Release 19) of the Household Goods Mileage Guide (HHG). Additionally, a breakdown of the distance traveled in each state is provided. Each route displays the highway name, road direction, the number of miles on each segment of road, nearest junction or city name, cumulative miles traveled, and the road characteristics.
3. In the **Locations** box, enter the origin and then click **Add** or press ENTER. The location appears in the list on the right.

Note:

---

If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

4. To add another location, type it over the highlighted text in the **Locations** box; the new entry automatically replaces the highlighted one.

Continue to enter locations until all locations along your route appear in the list of locations. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

**Tip:** If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

5. If hazardous materials restrictions apply to this route inquiry, select **Use Hazardous Materials Network**.
6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
7. To apply additional customization features to your inquiry, click **Options**. See Chapter 5 for additional information.

**Figure 4-1:** Example of information entered in a MileMaker HHG Route Inquiry with Full detail.

MileMaker HHG Route Inquiry

Inquiry Type  
MileMaker HHG Route  Audit  State Mileage Breakdown (SMB) Only  Full

Locations  
GAYLORD, TX Add Delete Clear Destination

|             |           |                 |           |
|-------------|-----------|-----------------|-----------|
| GAYLORD, TX | 671133000 | CHICAGO, IL     | 380000000 |
|             |           | DAYTONA BCH, FL | 491930000 |
|             |           | GAYLORD, TX     | 671133000 |

Rename

Use Hazardous Materials Network

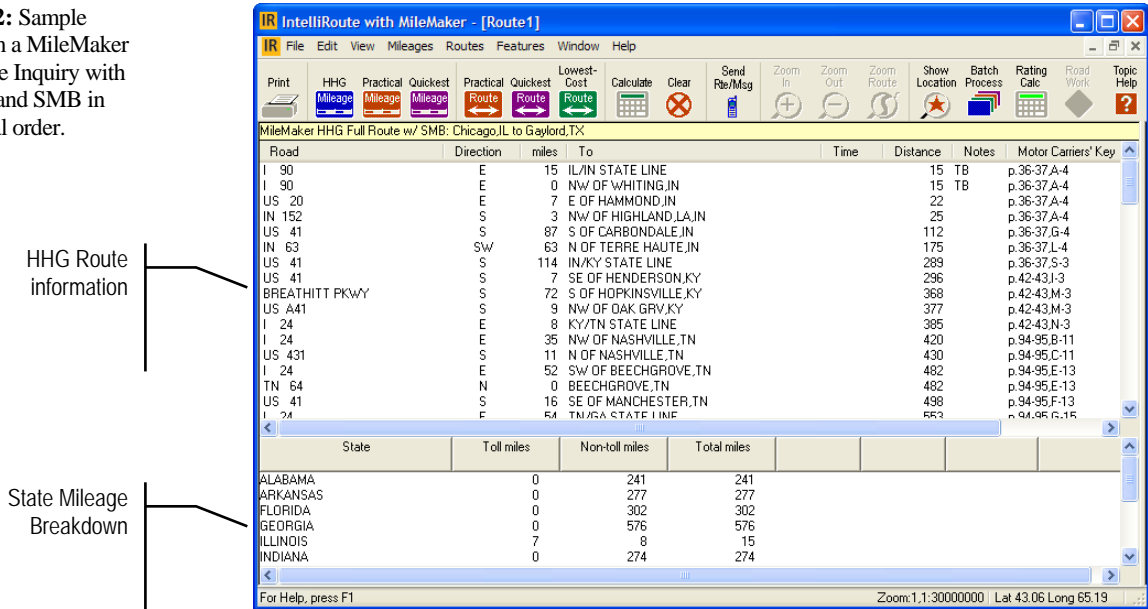
Optimization  
 Optimize  Optimize with specific destination

Calculate Options... Cancel Help

Canadian postal codes © 2008 DMTI Spatial Inc.

8. To display the route information, click **Calculate**. Sample output is shown below.

**Figure 4-2:** Sample output from a MileMaker HHG Route Inquiry with Full detail and SMB in alphabetical order.



For information about viewing the itinerary output for an IntelliRoute with MileMaker inquiry, see “Viewing IntelliRoute Itinerary Output” on page 51.

## Entering a MileMaker Practical Route Inquiry

The MileMaker Practical Route Inquiry provides detailed information on the most time-efficient route between the locations entered using the same road network database used for MileMaker HHG inquiries. MileMaker Practical Route inquiries can be calculated in miles or kilometers. **MileMaker Practical Routes are not calculated with HHG tariff rules.**

➡ To run a MileMaker Practical Route Inquiry:

1. Do one of the following:
  - On the toolbar, click **Practical Route**.
  - or*
  - On the **Routes** menu, click **MileMaker Practical Route**.
 The MileMaker Practical Route Inquiry dialog box appears.
2. Select one of the following **Inquiry Type** options:
  - **Practical**, to display detailed information on the most time-efficient route between the locations entered. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated

distances, notes, and Motor Carriers' Road Atlas (MCRA) keys are displayed.

- **SMB Only**, to display the distance traveled in each state along the MileMaker Practical Route. Miles are categorized as toll and non-toll. State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see Chapter 5.
  - **with SMB**, to display the Practical Route along with State Mileage Breakdown information. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys are displayed.
3. In the **Locations** box, enter the origin, and then click **Add** or press ENTER. The location will appear in the list box on the right.

---

Note: If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

4. To add another location, type it over the highlighted text in the **Locations** box; the new entry will automatically replace the highlighted one.  
Continue to enter locations until all locations along your route appear in the list of locations. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

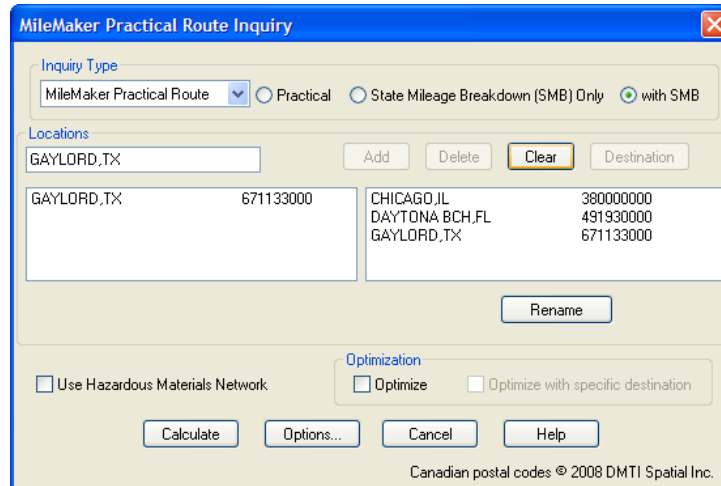
---

Tip: If you need to resequence the locations that you have included in the inquiry, see "Resequencing the Location List" in Chapter 2.

---

5. If hazardous materials restrictions apply to this route inquiry, select **Use Hazardous Materials Network**.
6. If three or more locations are specified, you can optimize the route. For more information, see "Optimizing the Location List" in Chapter 2.
7. To apply additional customization features to your inquiry, click **Options**. See Chapter 5 for additional information.

**Figure 4-3:** Example of information entered in a MileMaker Practical Route Inquiry with State Mileage Breakdown.



- To display the route information, click the **Calculate** button. Sample output is shown below.

**Figure 4-4:** Sample output from a Practical Route Inquiry with State Mileage Breakdown.

Practical Route information

State Mileage Breakdown

| Road  | Direction | miles | To                    | Time  | Distance | Notes | Motor Carriers' Key |
|-------|-----------|-------|-----------------------|-------|----------|-------|---------------------|
| I 90  | E         | 15    | IL/IN STATE LINE      | 0.29  | 15       | TB    | p.36-37.A-4         |
| I 90  | E         | 16    | E OF GARY,IN          | 0.50  | 31       | TB    | p.36-37.A-4         |
| I 65  | S         | 139   | NW OF INDIANAPOLIS,IN | 3.18  | 171      |       | p.36-37.J-8         |
| I 465 | S         | 20    | SE OF INDIANAPOLIS,IN | 3.41  | 190      |       | p.36-37.K-9         |
| I 65  | S         | 106   | IN/KY STATE LINE      | 5.33  | 297      |       | p.42-43.G-8         |
| I 65  | S         | 138   | KY/TN STATE LINE      | 7.46  | 434      |       | p.94-95.A-12        |
| I 65  | S         | 38    | E OF NASHVILLE,TN     | 8.22  | 473      |       | p.94-95.C-11        |
| I 24  | E         | 119   | TN/GA STATE LINE      | 10.13 | 591      |       | p.94-95.G-15        |
| I 24  | E         | 4     | GA/TN STATE LINE      | 10.17 | 595      |       | p.28-29.B-2         |
| I 24  | E         | 15    | E OF E RDG,TN         | 10.31 | 610      |       | p.94-95.G-16        |
| I 75  | S         | 2     | TN/GA STATE LINE      | 10.33 | 612      |       | p.94-95.G-16        |
| I 75  | S         | 96    | E OF FAIR OAKS,GA     | 12.02 | 708      |       | p.28-29.E-4         |
| I 285 | SW        | 25    | W OF FOREST PK,GA     | 12.27 | 733      |       | p.28-29.F-4         |
| I 75  | S         | 61    | NW OF BOLINGBROKE,GA  | 13.24 | 794      |       | p.28-29.H-6         |
| I 475 | S         | 16    | SE OF LIZELLA,GA      | 13.40 | 810      |       | p.28-29.I-6         |
| I 75  | S         | 157   | GA/FL STATE LINE      | 16.05 | 967      |       | p.28-29.O-8         |
| I 75  | S         | 36    | NE OF WELI RD,FL      | 16.38 | 1003     |       | p.76-77.F-6         |

| State    | Toll miles | Non-toll miles | Total miles |
|----------|------------|----------------|-------------|
| ALABAMA  | 0          | 308            | 308         |
| ARKANSAS | 0          | 295            | 295         |
| FLORIDA  | 0          | 536            | 536         |
| GEORGIA  | 0          | 359            | 359         |
| ILLINOIS | 7          | 8              | 15          |
| INDIANA  | 16         | 266            | 282         |

For information about viewing the itinerary output for an IntelliRoute with MileMaker inquiry, see “Viewing IntelliRoute Itinerary Output” on page 51.

## Entering a Quickest Route Inquiry

The Quickest Route Inquiry provides detailed information on the fastest (shortest time) truck-usable route between the locations entered. The Quickest Route is determined by total time using the new IntelliRoute GPS-accurate road network and your general routing preferences. Quickest Route inquiries can be calculated in miles or kilometers.



To run a Quickest Route Inquiry:

1. Do one of the following:
  - On the toolbar, click **Quickest Route**.

*or*

- On the **Routes** menu, click **Quickest Route**.

The Quickest Route Inquiry dialog box appears.

2. Select one of the following **Inquiry Type** options:

- **Quickest**, to display detailed information on the fastest (shortest time) route between the locations entered. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys are displayed.
- **SMB Only**, to display the distance traveled in each state along the quickest route. Miles are categorized as toll and non-toll. Toll cost values are displayed in the following fields:
  - **Toll Cost Within U.S.** – Total U.S. toll costs in U.S dollars.
  - **Toll Cost Within Canada** – Total Canadian toll costs in Canadian dollars.
  - **Converted Cost in U.S. \$** – Total for all toll costs in U.S. dollars based on the exchange rate specified in the Route/Mileage Processing Options - Display Options Dialog.
  - **Converted Cost in Canadian \$** – Total for all toll costs in Canadian dollars based on the exchange rate specified in the Route/Mileage Processing Options - Display Options Dialog.

State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see [Selecting a Format for State Mileage Breakdown](#).

For more information about setting the exchange rate, see

Setting the Toll Cost Exchange Rate.

- **with SMB**, to display the Quickest Route along with State Mileage Breakdown information. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys are displayed.
3. In the **Locations** box, enter the origin, and then click **Add** or press ENTER. The location will appear in the list on the right.

Note: If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

4. To add another location, type it over the highlighted text in the **Locations** box; the new entry will automatically replace the highlighted one.

Continue to enter locations until all locations along your route appear in the list of locations. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

Tip: If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

5. If hazardous materials restrictions apply to this route inquiry, select **Use Hazardous Materials Network**. To specify the categories of hazardous materials that apply to this inquiry, click **Set Categories**. For more information, refer to Chapter 5.
6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
7. To apply additional customization features to your inquiry, click **Options**. See Chapter 5 for additional information.

**Figure 4-5:** Example of information entered in a Quickest Route Inquiry with State Mileage Breakdown only.

**Quickest Route Inquiry**

Inquiry Type  
 Quickest Route  Quickest  State Mileage Breakdown (SMB) Only  with SMB

Locations

Address

City, St

|             |           |                 |           |
|-------------|-----------|-----------------|-----------|
| GAYLORD, TX | 671133000 | CHICAGO, IL     | 380000000 |
|             |           | DAYTONA BCH, FL | 491930000 |
|             |           | GAYLORD, TX     | 671133000 |

Hazardous Materials Restrictions  
 Use Hazardous Materials Network

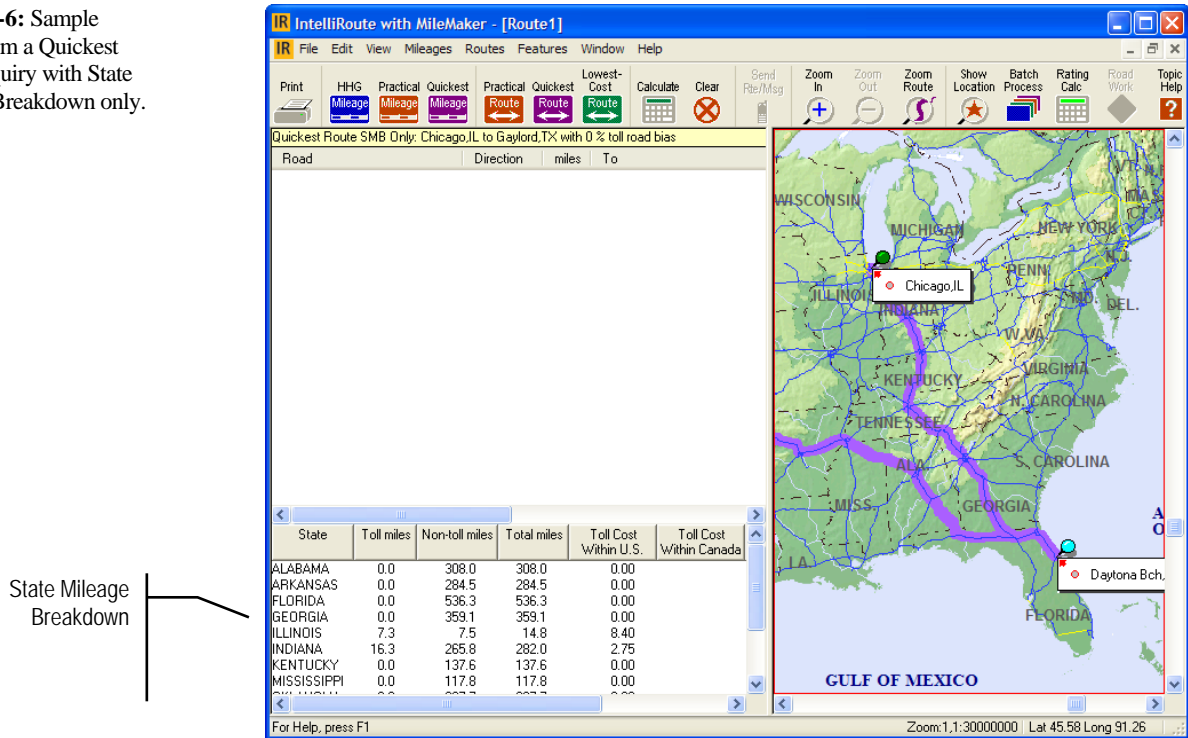
Optimization  
 Optimize  Optimize with specific destination

**intelliroute**

Canadian postal codes © 2008 DMTI Spatial Inc.

8. If the route calculation must consider parameters for truck configuration, such as vehicle width, length, and trailer options, click **Options** and then click the **Truck-Type Routing** tab. Specify the truck configuration information as needed, and then click **OK**. For more information on entering truck configuration information, see “Setting Routing Based on Truck-Type” in Chapter 5.
9. To display the route information, click **Calculate**. Sample output is shown below.

**Figure 4-6:** Sample output from a Quickest Route Inquiry with State Mileage Breakdown only.



10. To recalculate the inquiry using RoadWork update information, click **Road Work** on the toolbar. The inquiry is automatically recalculated and a RoadWork report is displayed.

You can set the Route/Mileage Processing options so that all Quickest Route inquiries automatically calculate using the RoadWork update settings. If this option is set, **Road Work** on the toolbar will not be available. For information on setting or clearing the RoadWork update options, see Chapter 5.

For information about viewing the itinerary output for an IntelliRoute with MileMaker inquiry, see “Viewing IntelliRoute Itinerary Output” on page 51.

## Entering a Lowest-Cost Route Inquiry

The Lowest-Cost Route Inquiry provides detailed information on the lowest-cost truck-usable route between locations. The Lowest-Cost route helps minimize trucking costs. The route is determined using the new IntelliRoute GPS-accurate road network and your general routing preferences. Lowest-Cost Route inquiries can be calculated in miles or kilometers.

The following costs, as they relate to road network attributes, are factored in the calculation of the Lowest-Cost Route:

- Cost of time.
- Fuel cost per mile/kilometer, calculated using average fuel efficiency (MPG or metric equivalent) and average fuel cost per gallon/liter.
- Maintenance cost per mile/kilometer.

---

Note: IntelliRoute establishes default settings for the costs listed above. However, you might want to adjust these costs based on your company's business needs. For additional information, see Chapter 5.

---

- Toll road cost (Average cost/mile calculated from total toll costs).



To run a Lowest-Cost Route Inquiry:

1. Do one of the following:

- On the toolbar, click **Lowest-Cost Route**.

*or*

- On the **Routes** menu, click **Lowest-Cost Route**.

The Lowest-Cost Route Inquiry dialog box appears.

2. Select one of the following **Inquiry Type** options:

- **Lowest-Cost**, to display detailed information on the most cost-efficient route between the locations entered. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys are displayed.
- **SMB Only**, to display the distance traveled in each state along the quickest route. Miles are categorized as toll and non-toll. Toll cost values are displayed in the following fields:
  - **Toll Cost Within U.S.** – Total U.S. toll costs in U.S dollars.
  - **Toll Cost Within Canada** – Total Canadian toll costs in Canadian dollars.

- **Converted Cost in U.S. \$** – Total for all toll costs in U.S. dollars based on the exchange rate specified in the Route/Mileage Processing Options - Display Options Dialog.
- **Converted Cost in Canadian \$** – Total for all toll costs in Canadian dollars based on the exchange rate specified in the Route/Mileage Processing Options - Display Options Dialog.

State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see “Selecting a Format for State Mileage Breakdown”.

For more information about setting the exchange rate, see Setting the Toll Cost Exchange Rate

- **with SMB**, to display the Lowest-Cost Route along with State Mileage Breakdown information. Highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers’ Road Atlas (MCRA) keys are displayed.

3. In the **Locations** box, enter the origin and then click **Add** or press ENTER. The location will appear in the list on the right.

---

Note: If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

4. To add another location, type it over the highlighted text in the **Locations** box; the new entry will automatically replace the highlighted one.  
Continue to enter locations until all locations along your route appear in the list of locations. IntelliRoute will assume that the first location in the list is your origin, the last location is your destination, and those in between are via points.

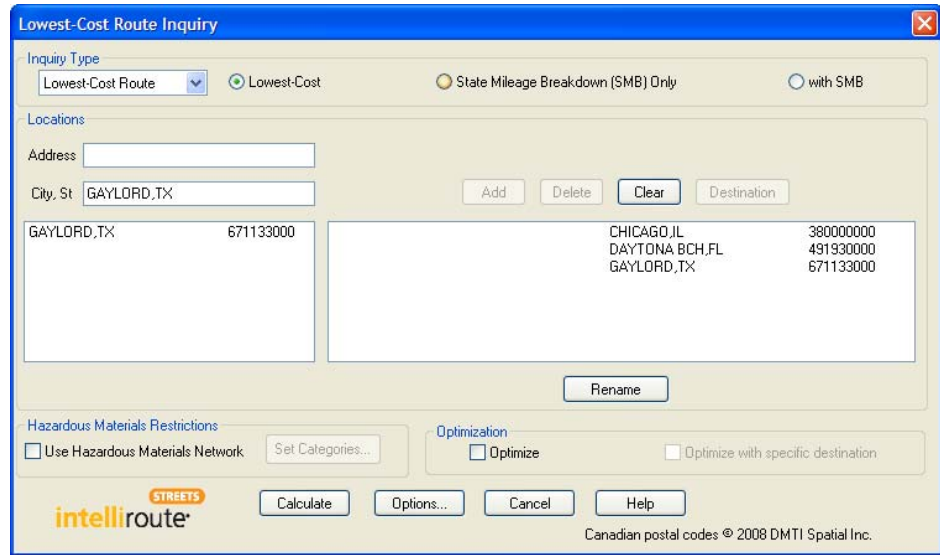
---

Tip: If you need to resequence the locations that you have included in the inquiry, see “Resequencing the Location List” in Chapter 2.

---

5. If hazardous materials restrictions apply to this route inquiry, select **Use Hazardous Materials Network**. To specify the categories of hazardous materials that apply to this inquiry, click **Set Categories**. For more information, see Chapter 5.
6. If three or more locations are specified, you can optimize the route. For more information, see “Optimizing the Location List” in Chapter 2.
7. To apply additional customization features to your inquiry, click **Options**. See Chapter 5 for additional information.

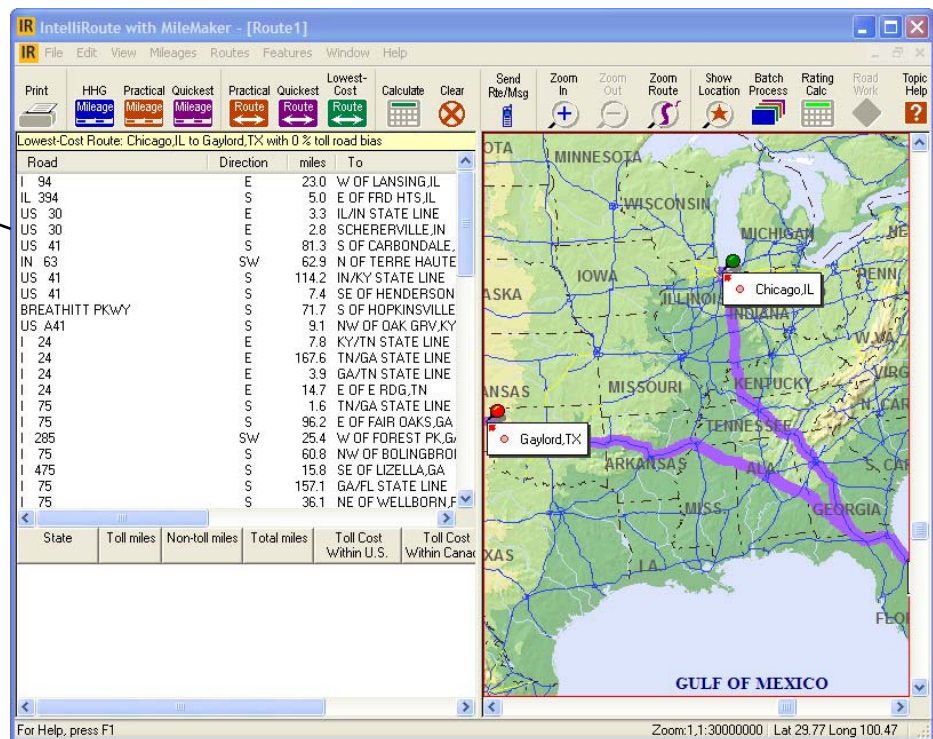
**Figure 4-7:** Example of information entered in a Lowest-Cost Route Inquiry.



8. If the route calculation must consider parameters for truck configuration, such as vehicle width, length, and trailer options, click **Options** and then click the **Truck-Type Routing** tab. Specify the truck configuration information as needed and then click **OK**. For more information on entering truck configuration information, see “Setting Routing Based on Truck-Type” in Chapter 5.
9. To display the route information, click **Calculate**. Sample output is shown below.

**Figure 4-8:** Sample output from a Lowest-Cost Route Inquiry.

Lowest-Cost Route information



10. To recalculate the inquiry using RoadWork update information, click **Road Work** on the toolbar. The inquiry is automatically recalculated and a RoadWork report is displayed.

You can set the Route/Mileage Processing options so that all Lowest-Cost Route inquiries automatically calculate using the RoadWork update settings. If this option is set, **Road Work** on the toolbar will not be available. For information on setting or clearing the RoadWork update options, see Chapter 5.

For information about viewing the itinerary output for an IntelliRoute with MileMaker inquiry, see “Viewing IntelliRoute Itinerary Output” on page 51.

---

## Viewing IntelliRoute Itinerary Output

When you calculate an inquiry using IntelliRoute with MileMaker, the text itinerary area is shown in various colors to help you identify the type of information you are viewing. The colors are associated with information as follows:

- RoadWork information is shown in orange text.
- Driver break information is shown in blue text.
- Fuel stops are shown in green text.
- Weigh stations are shown in teal text.
- Truck-Type violations are shown in red text.

**Figure 4-9:** Viewing information in the IntelliRoute with MileMaker itinerary.

Driver break information  
 Fuel stop information  
 Weigh station information

IR IntelliRoute with MileMaker - [Route1]

IR File Edit View Mileages Routes Features Window Help

Print HHG Practical Quickest Practical Quickest Lowest-Cost Calculate Clear Send Rte/Msg Zoom In Zoom Out Zoom Route Show Location Batch Process Rating Calc Road Work Topic Help

Quickest Route w/SMB: Boston,MA to St Johns,NF with 0 % toll road bias

| Road             | Direction | miles | To                   |
|------------------|-----------|-------|----------------------|
| I-95 Exit 44     |           |       | DYSARTS SRV, M       |
| I 395            | E         | 4.8   | SE OF BREWER,ME      |
| US A1            | SE        | 5.3   | E HOLDEN,ME          |
| ME 46            | N         | 4.9   | E EDDINGTON,ME       |
| ME 9             | E         | 77.2  | SE OF WOODLAND,w     |
| Service break 1  |           |       |                      |
| US 1             | S         | 7.0   | CALAIS,ME            |
| US 1 Exit ME 9   |           |       | WOODLAND IRVING      |
| INTL BRDG        | NE        | 0.1   | ME/NB STATE LINE     |
| NB 1             | E         | 140.9 | NE OF PETITCODIAC, N |
| P-1              |           |       | WEIGH STA 1035       |
| TRANS-CANADA 2   | NE        | 57.3  | NB/NS STATE LINE     |
|                  |           |       | LUTES MTN BIG S      |
|                  |           |       | AULAC BIG STP, N     |
|                  |           |       | LOWERISONS ES        |
| TRANS-CANADA 104 | SE        | 169.7 | PRT HASTINGS,NS      |
|                  |           |       | TRAILBLAZER TS       |
|                  |           |       | AULDS CV SUPEP       |
| Hwy. 104         |           |       | WEIGH STA 1045       |
| T-104            |           |       | WEIGH STA 1045       |

| State         | Toll miles | Non-toll miles | Total miles | Toll Cost Within U.S. | Toll Cost Within Canada |
|---------------|------------|----------------|-------------|-----------------------|-------------------------|
| MASSACHUSETTS | 0.0        | 45.2           | 45.2        | 0.00                  |                         |
| MAINE         | 55.8       | 219.5          | 275.3       | 11.40                 |                         |
| NEW BRUNSWICK | 2.7        | 195.5          | 198.2       |                       | 1.40                    |
| NEWFOUNDLAND  | 52.7       | 564.0          | 616.8       |                       | 397.50                  |
| NEW HAMPSHIRE | 13.6       | 2.5            | 16.2        | 3.50                  |                         |
| NOVA SCOTIA   | 83.8       | 230.4          | 314.2       |                       | 15.00                   |
| Total         | 208.7      | 1257.0         | 1465.8      | 14.90                 | 413.90                  |

For Help, press F1

Zoom:1.1:30000000 Lat 57.93 Long 64.54

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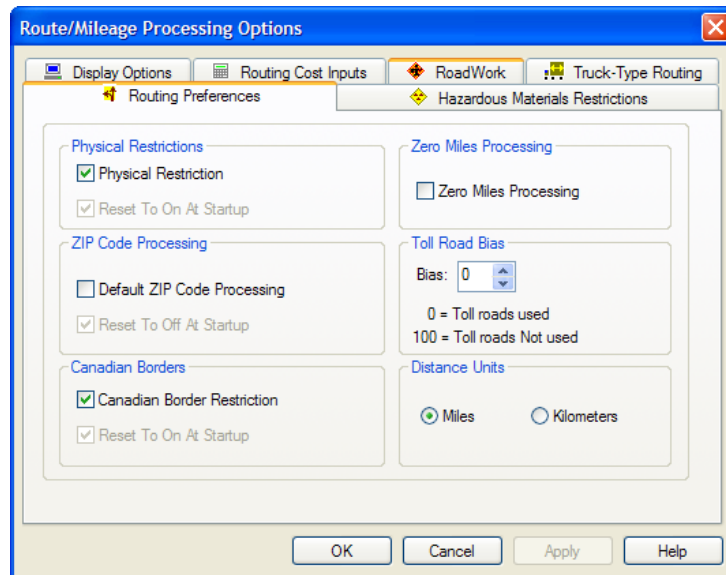
---

## Displaying Route/Mileage Processing Options

IntelliRoute with MileMaker includes processing options associated with the following tabs: Routing Preferences, Display Options, and Routing Cost Inputs, RoadWork, Truck-Type Routing, and Hazardous Materials Restrictions.

- ➡ To display Route/Mileage Processing Options:
  - On the **Features** menu, click **Route Processing Options**.

**Figure 5-1:** Route/Mileage Processing Options dialog box.



---

**Tip:** You can also display this dialog box from any inquiry dialog box by clicking **Route Options** in any mileage inquiry dialog box or clicking **Options** in any route inquiry dialog box.

---

## Customizing Settings

Refer to the sections below to customize the Route/Mileage processing options as appropriate for your situation.

---

## Setting Routing and Mileage Preferences

You can customize the way IntelliRoute calculates mileage and route inquiries by changing the following settings:

- Physical restrictions
- Default ZIP Code processing
- Canadian border restrictions
- Zero miles processing
- Distance units (miles or kilometers)
- Toll road usage
- Override Toll Road settings and avoided road segments for Lowest-Cost calculations
- Specify an exchange rate for converting between US dollars and Canadian dollars
- Specify the Newfoundland Abbreviation

### Turning Physical Restrictions ON and OFF

Roads with physical restrictions (formerly known as “Green Band Roads”) include those highways, which, for a variety of reasons, are not suitable for through truck travel. These roads may be restricted because of physical restrictions, local ordinances, weather conditions, grade and other safety concerns, or other reasons. Each state designates which roads are physically restricted.

In IntelliRoute, the **Physical Restrictions** option is ON by default. This means IntelliRoute excludes roads that are restricted whenever you calculate a MileMaker Practical, Quickest, or Lowest-Cost Mileage or Route. IntelliRoute always considers physical restrictions for MileMaker HHG Mileage and MileMaker HHG Route calculations, regardless of how you set the Physical Restrictions option.

If you want a route for vehicles that are allowed to drive on physically restricted roads, you can turn **Physical Restrictions OFF**.

#### Warning!

---

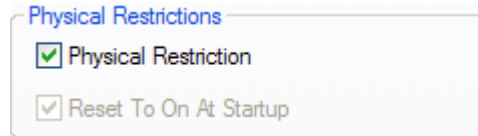
Turning Physical Restrictions OFF may produce Routes that do not conform to the Rand McNally standard for truck usable highways, and, as such, may deviate from highway segments which Rand McNally defined as generally suitable for truck travel.

---



To turn Physical Restrictions OFF:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.
3. In the **Physical Restrictions** area, clear the **Physical Restriction** check box to turn the option OFF.



4. Click **OK**.

#### Resetting Physical Restrictions at Startup

IntelliRoute will continue to have Physical Restrictions turned OFF in the current and future sessions unless you change this option again by doing one of the following:

- On the Route/Mileage Processing Options dialog box, select the **Physical Restriction** check box.

*or*

- On the Route/Mileage Processing Options dialog box, in the **Physical Restrictions** area, select the **Reset to ON at Startup** check box. When you select this check box, IntelliRoute continues to use the current setting for the remainder of the current session, but will reset **Physical Restrictions** to ON the next time you start IntelliRoute.

## Turning Default ZIP Code Processing ON and OFF

The ZIP Code Processing option lets you choose whether you want to automatically use the default ZIP Code location set by the IntelliRoute database, or choose a specific location from a list.

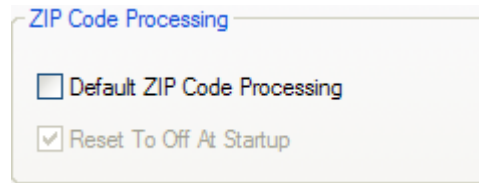
IntelliRoute initially sets this option to not use default ZIP Codes (OFF). This means when you search for a location using ZIP Codes, IntelliRoute displays a list if more than one location applies to the ZIP Code you entered. When this option is ON, IntelliRoute uses its predefined default location for the ZIP Code you entered. The default ZIP Code location is typically the town that contains the ZIP Code’s associated U.S. Post Office. The setting on this option applies to inquiries whether they are executed in real-time or in batch mode.



To turn the Default ZIP Code Processing ON:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.

3. In the **ZIP Code Processing** area, select the **Default ZIP Code Processing** check box.



4. Click **OK**.

#### Resetting ZIP Code Processing at Startup

IntelliRoute will continue to use default ZIP Codes when you search locations based on ZIP Code in the current and future sessions unless you change this option again by doing one of the following:

- On the Route/Mileage Processing Options dialog box, clear the **Default ZIP Code Processing** check box.

*or*

- On the Route/Mileage Processing Options dialog box, in the **ZIP Code Processing** area, select the **Reset to OFF at Startup** check box. When you select this check box, IntelliRoute continues to use the current setting for the remainder of the current session, but will reset **ZIP Code Processing** to OFF the next time you start IntelliRoute.

## Turning Canadian Border Restrictions ON and OFF

The Canadian Borders option enables you to calculate MileMaker Practical, Quickest, and Lowest-Cost Routes using Canadian roadways under the following conditions:

- The origin and destination are in the U.S.
- There are no via points in Canada.
- Truck-Type and Hazardous Materials Restrictions may restrict the use of a Canadian roadway.

When the Canadian Border Restriction option is **ON** (the default), IntelliRoute calculates a route completely within the U.S., even if traversing a country border would make the route quicker or shorter. You can turn the Canadian Border Restriction OFF, thus allowing a route to cross over the Canadian border.

---

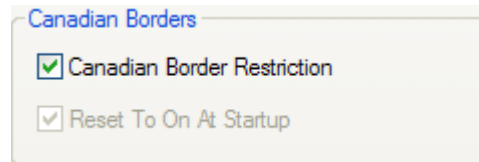
Note: MileMaker HHG calculations are not affected by the Canadian Border setting.

---



To turn the Canadian Border Restriction OFF:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.
3. In the **Canadian Borders** area, clear the **Canadian Border Restriction** check box.



4. Click **OK**.

Resetting Canadian Border Restriction at Startup

IntelliRoute will continue to cross country borders in Route calculations in the current and future sessions unless you change this option again by doing one of the following:

- On the Route/Mileage Processing Options dialog box, select the **Canadian Border Restriction** check box.
- or*
- On the Route/Mileage Processing Options dialog box, in the **Canadian Borders** area, select the **Reset to ON at Startup** check box. When you select this check box, IntelliRoute continues to use the current setting for the remainder of the current session, but will reset **Canadian Borders** to ON the next time you start IntelliRoute.

## Turning Zero Miles Processing ON and OFF

For any MileMaker HHG Mileage inquiry, you can use the Zero Miles Processing option to specify whether IntelliRoute returns a zero mileage or an error message. IntelliRoute interprets MileMaker HHG mileages as the accepted shortest distance between two points on truck usable routes, rounded to the nearest mile. IntelliRoute determines this distance based on recognized location names and/or ZIP Codes you enter. IntelliRoute returns zero mileage in the following circumstances:

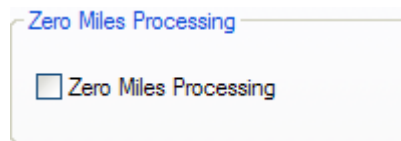
- When you enter the same location into IntelliRoute as consecutive stops on a route (e.g. Elmhurst,IL and Elmhurst,IL).
- or*
- When the actual distance between the two points is less than ½ mile.

In these cases, the default is for IntelliRoute to return an error message, because a zero mileage is not usually desired. If you are calculating MileMaker HHG miles, and your route contains consecutive stops in the same location, you need to select the zero miles processing option. This lets IntelliRoute return a zero mileage between two locations instead of an error message. The setting on this option applies to MileMaker HHG Mileage inquiries whether they are executed interactively or in batch mode.



To specify the Zero Miles Processing option:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.
3. In the Route/Mileage Processing Options dialog box, do one of the following:



- Select the **Zero Miles Processing** check box if you want IntelliRoute to return a zero mileage when you enter the same location on consecutive lines.
  - Clear the **Zero Miles Processing** check box if you want IntelliRoute to return an error message indicating that it could not process the request when you enter the same location on consecutive lines.
4. Click **OK** to save any changes and exit the dialog box.

## Selecting a Unit of Measure

Except for MileMaker HHG, you can calculate a route in kilometers or miles by changing the Distance Units option. Once you set this option, IntelliRoute uses the chosen unit of measure for all mileage and routing calculations.

Note:

---

You can only calculate MileMaker HHG routes in miles.

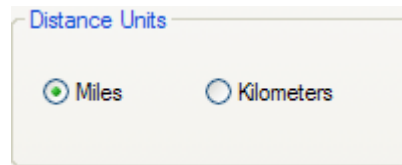
---



To specify the Distance Units option:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.

3. Click **Miles** or **Kilometers** as appropriate.



4. Click **OK** to save any changes and exit the dialog box.

## Altering Toll Road Usage

You can change the amount of toll road usage in your MileMaker Practical, Quickest, and Lowest-Cost route inquiry by changing the percentage in the Toll Road Bias. A higher percentage of toll road bias increases the likelihood that IntelliRoute will avoid toll roads as often as possible in a specific route. A lower percentage increases the likelihood that IntelliRoute will use toll roads in a specific route.

---

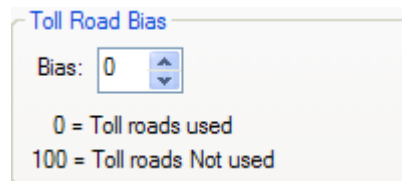
**Note:** Your route may be affected when you change the toll road bias setting. For example, there may be an increase in the mileage and/or travel time.

---



To change the toll road bias:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Preferences** tab.
3. In the **Toll Road Bias** area, type or select a new **Bias** number to increase or decrease the bias. A 0 indicates no toll road avoidance and 100 indicates full toll road avoidance.



4. Click **OK** to save any changes and exit the dialog box.

---

**Note:** For Network Users: You can alter **Toll Road Bias** for individual users at each workstation.

---

## Setting the Toll Cost Exchange Rate

You can specify an exchange rate for converting between US dollars and Canadian dollars.



To specify an exchange rate:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the **US Dollar to Canadian Dollar** area, enter a valid decimal number in one of the following formats: 9.9999, 9.999, 9.99, or 9.9.

US Dollar to Canadian Dollar  
Enter Exchange Rate:  
USD \$1.00 = CND \$

The following are all examples of valid number formats:

- 1.2571
- 1.257
- 1.25
- 1.2

---

**Note:** The exchange rate value must be in the range between 0.01 and 99.9999.  
Setting this value to 1 prevents values from appearing in the converted costs columns of the toll cost breakdown.

---

4. Click **OK** to save any changes and exit the dialog box.

You can set the **US Dollar to Canadian Dollar** exchange to be used in the toll cost breakdown calculations.

## Newfoundland Abbreviation

You can choose whether IntelliRoute® should use the abbreviation **NL** or **NF** to represent the Canadian province of Newfoundland and Labrador.



To specify the abbreviation used for the Canadian Province of Newfoundland and Labrador:

In the **Newfoundland Abbreviation** area, click one of the following:



- **NL** to use the abbreviation **NL** for Canadian province Newfoundland and Labrador.
- **NF** to use the abbreviation **NF** for Canadian province Newfoundland and Labrador.

---

## Customizing Lowest-Cost Routing

You can customize several settings specific to Lowest-Cost inquiries including the following:

- Override toll and other road segment avoidance.
- Set the cost factors IntelliRoute uses to calculate a Lowest-Cost route (the “Routing Cost Inputs”).

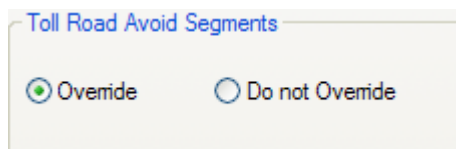
### Overriding Road Avoidance

The purpose of Lowest-Cost routing is to prioritize the lowest-cost truck-usable route between and among two or more points. Because of this, you may want to override avoidance settings on toll roads and avoided segments so that IntelliRoute has access to all available toll roads and road segments when calculating a Lowest-Cost route.



To customize Lowest-Cost routing:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Routing Cost Inputs** tab.
3. Set Toll Road Avoidance as follows:



- If you want IntelliRoute to ignore the current avoidance setting on toll roads, select **Override**.
- If you want IntelliRoute to include the current Toll Road Bias setting in Lowest-Cost calculations, select **Do not Override**.

- Set Road Segment avoidance as follows:

- If you want IntelliRoute to include all road segments for Lowest-Cost calculations, select **Override**.
  - If you want IntelliRoute to continue to avoid selected road segments in Lowest-Cost calculations, select **Do not Override**.
- Click **OK** to save any changes and exit the dialog box.

## Setting Routing Costs

Lowest-Cost routing uses several cost factors to calculate the lowest-cost truck-usable route between and among two or more points. You can adjust cost factors including cost of time, maintenance cost, average fuel efficiency, and average fuel cost.



To adjust cost settings:

- Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
- Click the Routing Cost Inputs tab.
- Enter values as appropriate for Cost of Time, Maintenance, Fuel Efficiency, and Fuel cost.

**Figure 5-2:** Routing Cost input options.

- Click **OK** to save any changes and exit the dialog box.

---

## Setting Display Options

You can customize how and what information IntelliRoute displays when you calculate a route. You can display fuel stops in the itinerary. You can display weigh stations for the Quickest and Lowest-Cost routes on both the route itinerary and map. You can display rest area icons on the Quickest and Lowest-Cost route maps. You can customize the format of the State Mileage Breakdown. You can change the default to reuse the location list in an inquiry. You can also specify an exchange rate for converting between US dollars and Canadian dollars, with the conversion result appearing in the toll cost breakdown after calculating a Quickest or Lowest-Cost route.

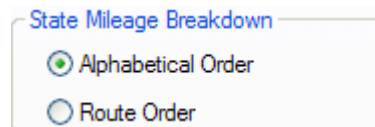
### Selecting a Format for State Mileage Breakdown

You can set the State Mileage Breakdown to display in alphabetical or route order.



To select a format for State Mileage Breakdown:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the **State Mileage Breakdown** area, click one of the following:



- **Alphabetical Order** to display the State Mileage Breakdown listing in alphabetical order based on the fully spelled state or province name.
- or*
- **Route Order** to display the State Mileage Breakdown listing in the order that the states are traveled in the route.
4. Click **OK** to save any changes and exit the dialog box.

## Displaying Fuel Stops

If you have IntelliRoute with MileMaker, you can display fuel stops in the itinerary of a calculated route. You can also filter fuel stops by selecting desired truck stop amenities from a list of amenities. IntelliRoute displays fuel stops in green in the itinerary.

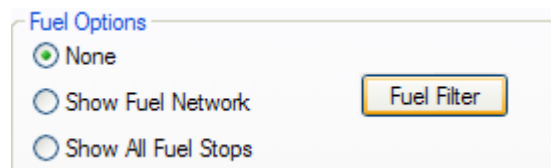
### Selecting the Type of Fuel Stops to Display

You can display fuel stops just from your customized Fuel Network or all fuel stops.



To display fuel stops:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the **Fuel Options** area, click one of the following:



- **None** to remove fuel stops from the itinerary of a calculated route.
- **Show Fuel Network** to display fuel stops from your customized fuel network.

Note:

To display fuel stops from the Fuel Network, you must first add locations to the Fuel Network. See Chapter 9 for more information.

- **Show All Fuel Stops** to display standard fuel stops and fuel stops from your customized Fuel Network.
4. Click **OK** to save any changes and exit the dialog box.

### Filtering Fuel Stops

You can filter the type of fuel stops you want to display in the itinerary by selecting fuel stops with specific truck stop amenities.

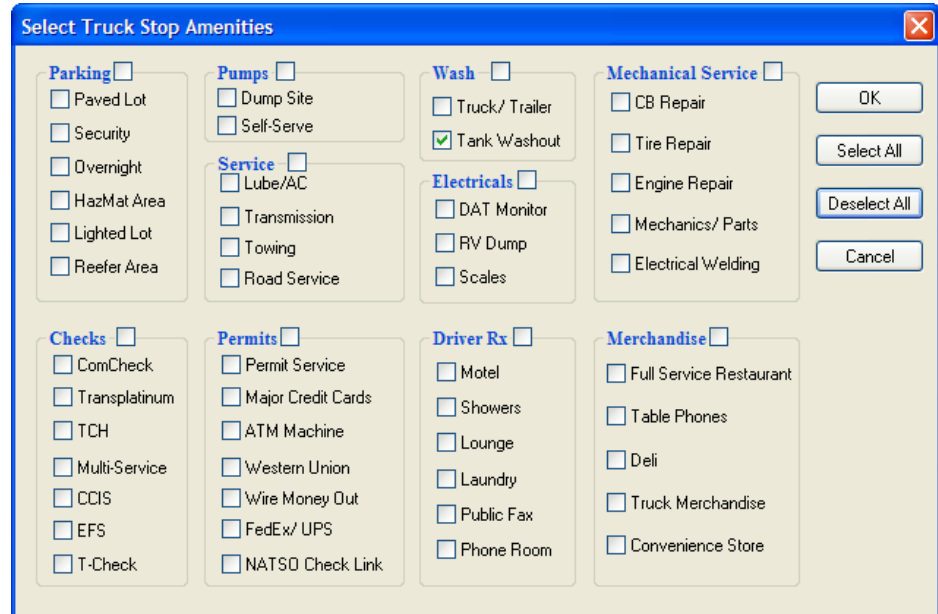


To filter fuel stops:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.

3. Click the **Fuel Filter** button to display the Select Truck Stop Amenities dialog box:

**Figure 5-3:** Select Truck Stop Amenities dialog box.



4. Select the desired fuel stop amenities. Only those truck stops that satisfy the selected criteria are included in the itinerary.

**Tip:** Click **Select All** to select all truck stop amenities. Click **Deselect All** to clear all truck stop amenity selections.

5. Click **OK** to save any changes and exit the dialog box.

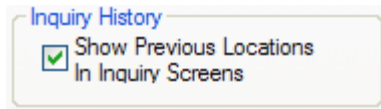
## Reusing the Previous Location List

By default, the location list remains after you execute an inquiry. However, you might prefer to clear the previous list of locations each time you execute a mileage or route inquiry.

**Note:** IntelliRoute manages reusable location lists based on type of inquiry. This means that the location list you enter for a MileMaker HHG will be forwarded to a subsequent MileMaker HHG or MileMaker Practical inquiry (and the reverse). A location list you enter for a Quickest inquiry will be forwarded to a subsequent Quickest or Lowest-Cost inquiry (and the reverse).

➡ To clear the previous list of locations each time you execute an inquiry:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. Clear the **Show Previous Locations In Inquiry Screens** check box.



4. Click **OK** to exit.

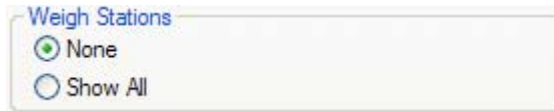
## Displaying Weigh Stations

You can display weigh stations for the Quickest and Lowest-Cost routes on both the route itinerary and map of a calculated route.



To display weigh stations:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the Weigh Stations area, click one of the following:



- **None** to remove weigh stations from both the route itinerary and map.
  - **Show All** to display all weigh stations on both the route itinerary and map.
4. Click **OK** to save any changes and exit the dialog box.

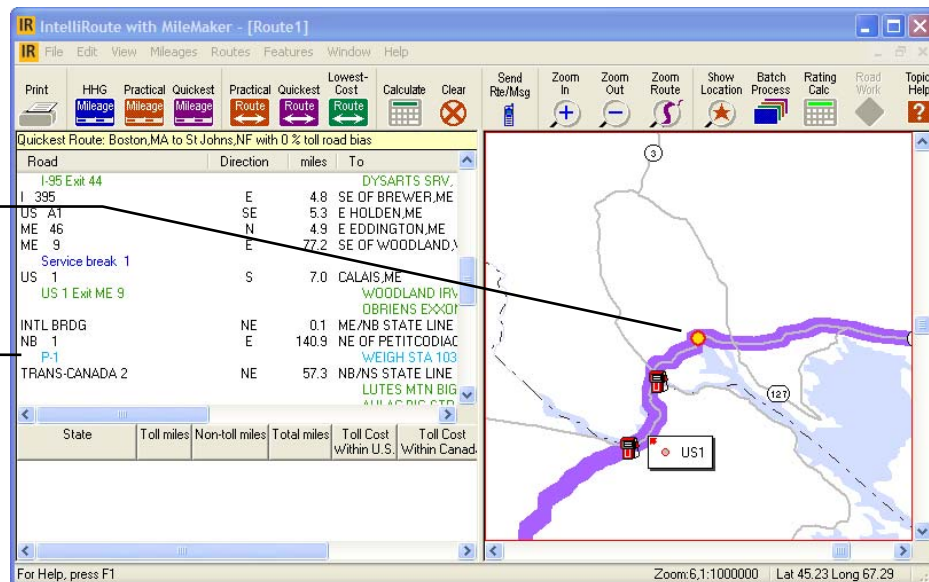
Note:

The weigh station icons only appear on zoom level 4 and higher.

**Figure 5-4:** Displaying weigh stations on the map and itinerary.

Weigh station icon

Weigh station information



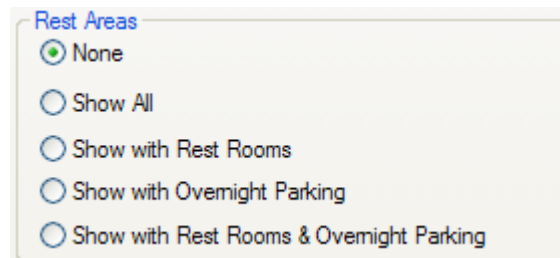
## Displaying Rest Areas

You can display rest area icons on the Quickest and Lowest-Cost route maps of a calculated route.



To display rest areas:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the Rest Areas area, click one of the following:



- **None** to remove rest areas from the route map.
  - **Show All** to display all rest areas on the route map.
  - **Show with Rest Rooms** to display only rest areas with rest rooms on the route map.
  - **Show with Overnight Parking** to display only rest areas with overnight parking on the route map.
  - **Show with Rest Rooms & Overnight Parking** to display only rest areas with both rest rooms and overnight parking on the route map.
4. Click **OK** to save any changes and exit the dialog box.

Note:

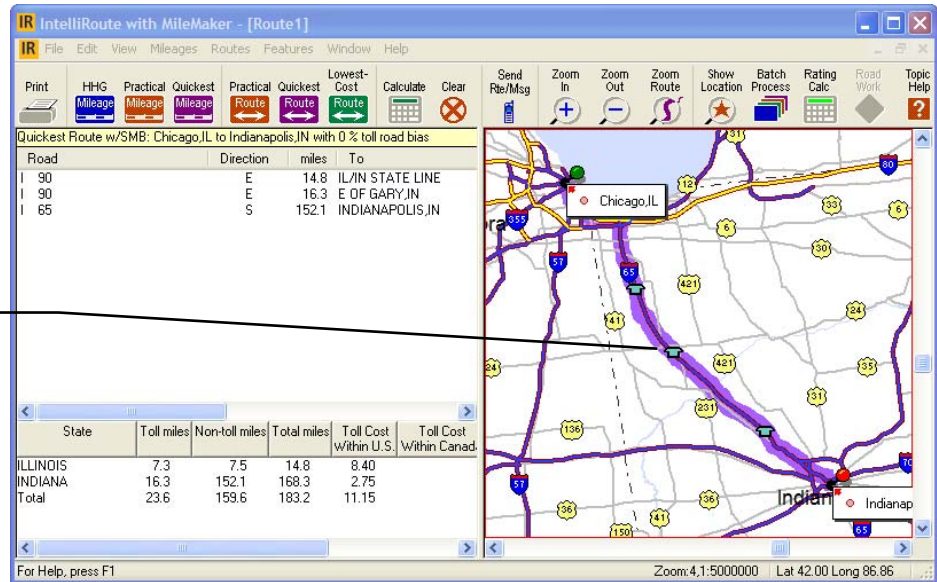
---

The rest area icons only appear on zoom level 4 and higher.

---

**Figure 5-5:** Displaying Rest Areas on the map.

Rest Area icon



## Setting Hazardous Materials Restrictions

Rand McNally has collected hazardous material restrictions from a United States federal agency and coded those restrictions into IntelliRoute. If you have IntelliRoute with MileMaker and your company has purchased the hazardous materials special feature, you can use this information to calculate mileage and route inquiries that take into account the transportation of hazardous materials (HazMat). When you enable HazMat restrictions, IntelliRoute removes roads that do not allow hazardous materials from the route calculations.

When you use MileMaker HHG and MileMaker Practical mileage and route inquiries with HazMat restrictions turned ON, IntelliRoute applies those road restrictions from the Hazardous Materials Network that apply to ALL hazardous materials. Restrictions affecting only some hazardous materials are not applied. When you use Quickest and Lowest-Cost mileage and route inquiries, you can optionally select one or more specific types of hazardous materials (explosives, gas, flammables, etc.) to apply to the calculation. When you do this, IntelliRoute excludes only those roads that are restricted for the selected type(s) of hazardous material.

Note: The **Hazardous Materials Restrictions** tab is available only if your company has purchased the hazardous materials special feature.

## Setting Hazardous Materials for MileMaker HHG/Practical Inquiries

MileMaker HHG and MileMaker Practical mileage and route inquiries let you apply the entire Hazardous Materials Network of roads to an inquiry calculation.

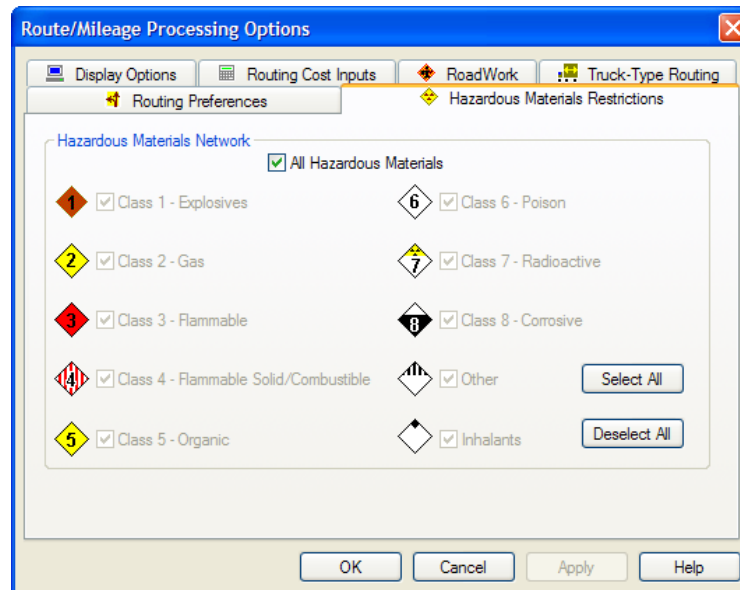
- ➔ To turn on calculations for hazardous materials for MileMaker HHG and MileMaker Practical inquiries:
  - Select the **Use Hazardous Materials Network** check box on the MileMaker HHG/MileMaker Practical Mileage dialog box or on the MileMaker HHG Route or MileMaker Practical Route Inquiry dialog box.

## Setting Hazardous Materials for Quickest and Lowest-Cost Inquiries

Quickest and Lowest-Cost inquiries let you apply specific types of hazardous materials to an inquiry calculation so that IntelliRoute only excludes roads that cannot handle those types of hazardous materials.

- ➔ To turn on calculations for hazardous materials in Quickest and Lowest-Cost inquiries:
  1. On the mileage or route dialog box for a Quickest or Lowest-Cost inquiry, select the **Use Hazardous Materials Network** check box.
  2. Click **Set Categories**. The Route/Mileage Processing Options dialog box displays the **Hazardous Materials Restrictions** tab.

**Figure 5-6:** Hazardous Materials Restrictions tab of the Route/Mileage Processing Options dialog box.



3. Select the type of hazardous material you want to apply to the mileage or route calculation.

---

Note: If the **All HazMats** checkbox is selected, IntelliRoute grays all the individual checkboxes for Hazardous Material classes. To select individual HazMat classes, clear the **All HazMats** checkbox.

---

4. Click **OK** to return to the inquiry dialog box.

## Setting Hazardous Materials Defaults in Processing Options

If you know that you will often use HazMat calculations for your mileage and route inquiries, you can preset HazMat options.



To set HazMat defaults:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Hazardous Materials Restrictions** tab.
3. Select the type of hazardous material you want to apply to inquiry calculations.
4. Click **OK** to save any changes.

---

## Setting Driver Breaks

You can add scheduled breaks to a route so that IntelliRoute calculates a more accurate Estimated Time of Arrival when it calculates a route. When you use driver break options, IntelliRoute notes scheduled breaks in the route itinerary. You can set up scheduled breaks for hours of service, fuel, and food.

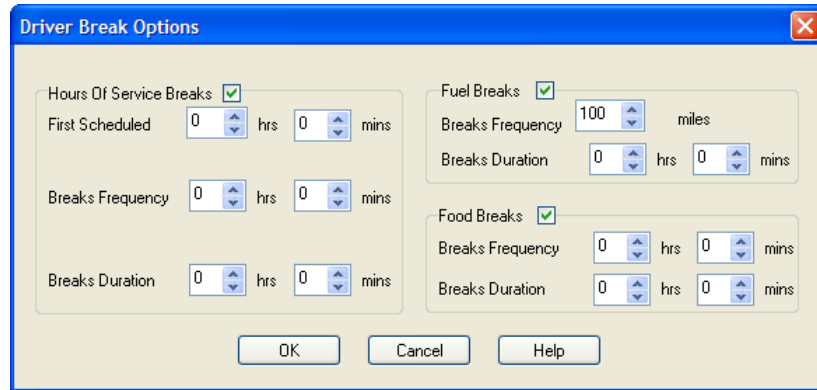
## Displaying Driver Break Settings



To display driver break options:

- On the **Features** menu, click **Driver Break Options**.

**Figure 5-7:** Driver Break Options dialog box.



## Setting Hours of Service Breaks

The hours of service break settings help you facilitate compliance with hours of service rules.



To set hours of service breaks:

1. On the Driver Break Options dialog box, click the **Hours of Service Breaks** check box.
2. For **First Scheduled**, type or select the estimated hours and minutes when the first scheduled hours of service break will occur after the start of the route.
3. For **Breaks Frequency**, type or select the hours and minutes for how often drivers will take hours of service breaks.
4. For **Breaks Duration**, type or select the hours and minutes for the length of each hours of service break.
5. Click **OK** to save any changes.

## Setting Fuel Breaks

You can increase the accuracy of the Estimated Time of Arrival for a calculated route by including driver stops for refueling.

Note:

---

IntelliRoute ignores the fuel break frequency setting if you created a fuel network and you select the **Show Fuel Network** option in the route processing options.

---



To set fuel breaks:

1. On the Driver Break Options dialog box, click the **Fuel Breaks** check box.
2. For **Breaks Frequency**, type or select the estimated miles for how often drivers will take fuel breaks.
3. For **Breaks Duration**, type or select the estimated hours and minutes for the length of each fuel break.

4. Click **OK** to save any changes.

## Setting Food Breaks

You can increase the accuracy of the Estimated Time of Arrival for a calculated route by including driver breaks for meals.



To set food breaks:

1. On the Driver Break Options dialog box, click the **Food Breaks** check box.
2. For **Breaks Frequency**, type or select the estimated hours and minutes for how often drivers will take food breaks.
3. For **Breaks Duration**, type or select the estimated hours and minutes for the length of each food break.
4. Click **OK** to save any changes.

---

## Using RoadWork™ Updates

With the RoadWork online updates, you can download up-to-date information about road availability from Rand McNally via the Internet. IntelliRoute uses this information to overlay its road network database with information about road construction, delays, and temporary and permanent road closures. You can choose to apply the RoadWork updates to route itineraries and have IntelliRoute calculate routes that avoid road construction and closed roads.

## Downloading the Latest RoadWork Updates

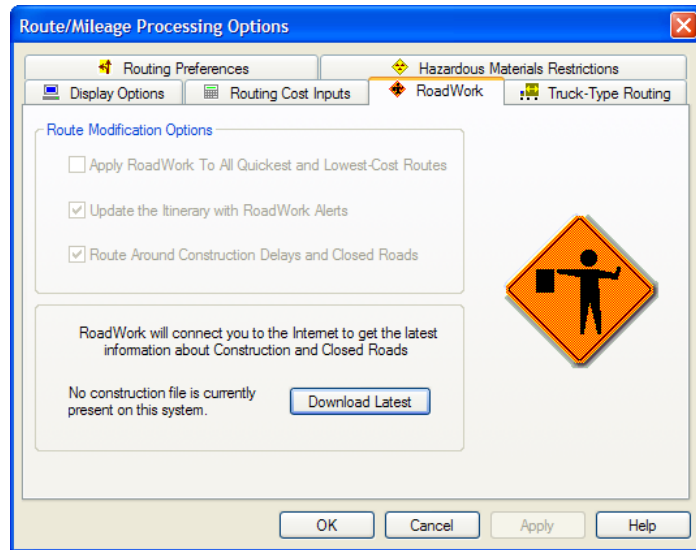
You can download the latest RoadWork updates directly from within IntelliRoute.



To download the latest RoadWork update file:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **RoadWork** tab.

**Figure 5-8:** Road Network Update tab of the Route/Mileage Processing Options dialog box.



3. Click **Download Latest**.  
IntelliRoute connects with the Internet and downloads the latest RoadWork update file.
4. When IntelliRoute finishes downloading RoadWork updates, click **OK** to save any changes.

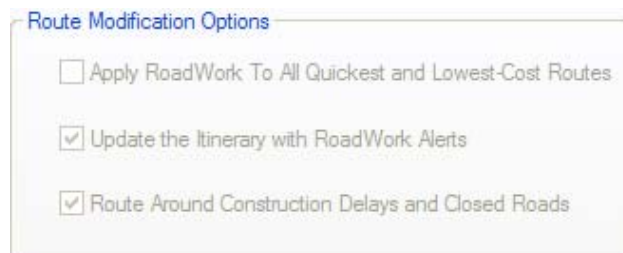
## Applying RoadWork Updates

After you download RoadWork updates, you can choose to apply the updates to route itineraries and route calculations. When you choose to apply updates to route calculations, you can calculate routes that avoid road construction and closed roads or take RoadWork alerts into account when calculating the Estimated Time of Arrival for Quickest and Lowest-Cost routes.



To apply the latest RoadWork update file:

1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **RoadWork** tab.
3. Do any of the following:



- To automatically take into account closed roads and construction delays when calculating Quickest and Lowest-Cost routes, select the **Apply RoadWork To All Quickest and Lowest-Cost Routes** check box.
  - To display RoadWork alerts in route itineraries, select the **Update the Itinerary with RoadWork Alerts** check box. RoadWork information displays as orange in the itinerary. If you select this check box without also selecting the **Apply RoadWork To All Quickest and Lowest-Cost Routes** check box, you can recalculate any route with RoadWork data and display RoadWork alerts in the itinerary by clicking the RoadWork button on the toolbar.
  - To tell IntelliRoute to avoid closed roads and construction delays in its calculations and display RoadWork alerts in route itineraries, select the **Route Around Construction Delays and Closed Roads** check box. If it's not already selected, IntelliRoute automatically selects and grays out the **Update the Itinerary with RoadWork Alerts** check box. If you select this check box without also selecting the **Apply RoadWork To All Quickest and Lowest-Cost Routes** check box, you can recalculate any route with RoadWork data, display RoadWork alerts in the itinerary, and route around road problems by clicking the RoadWork button on the toolbar.
4. Click **OK** to save any changes.

Tip:

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After you calculate a route using RoadWork, you can display a report listing all the construction delays and closed roads in the route by clicking the **Features** menu and selecting **RoadWork** report.

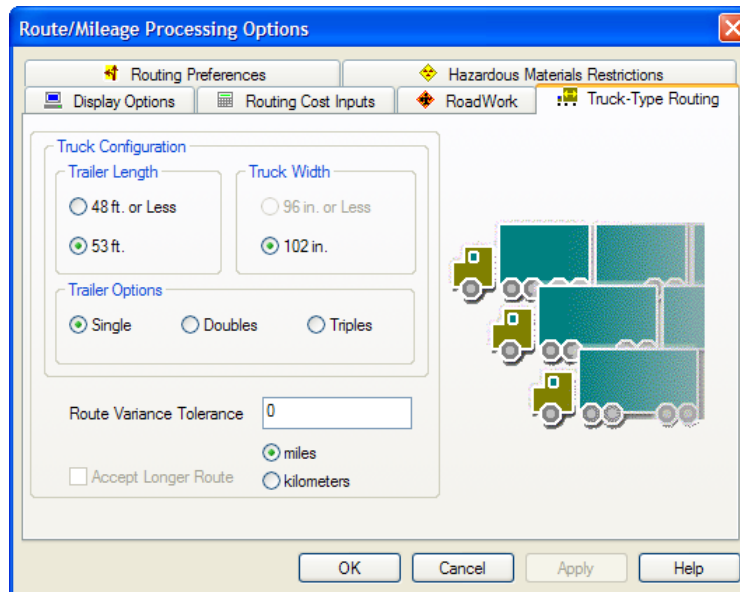
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## Setting Routing Based on Truck-Type

When you calculate an inquiry, IntelliRoute uses the default settings for the trailer length, width, and trailer options as shown below in the Truck-Type Routing tab of the Route/Mileage Processing Options dialog box:

**Figure 5-9:** Standard truck configuration settings used for Quickest and Lowest-Cost inquiries.



However, for different truck configurations, you can execute Quickest and Lowest-Cost inquiries in which you can adjust truck configuration information. This allows IntelliRoute to create the best possible route based on the combination of Inquiry Type, truck configuration, and other processing options.

Changes to any option shown in the Truck Configuration area of the Route/Mileage Processing Options dialog box will affect vehicle mileage and routing calculations, as these vehicles are not necessarily permitted on the same routes as standard-sized vehicles.

Additionally, states vary greatly with respect to the truck configurations they allow in their jurisdictions, and on specific roadways within those jurisdictions. Therefore, calculating a route for some truck configurations may result in a much longer route than the route calculated for a standard vehicle.

In some cases, a route cannot be generated with all segments acceptable for the Truck-Type options chosen due to a discontinuous road network for certain vehicle types. When this occurs, IntelliRoute will return a message with appropriate information. When you calculate a mileage or route inquiry for a non-standard truck configuration, you can set the acceptable increase in route length using the non-standard truck configuration as compared to a route that is calculated based on the standard-sized truck configuration.

After you adjust the parameters in the Route/Mileage Processing Options dialog box, each Quickest or Lowest-Cost inquiry you calculate will use the options you specify in the Truck-Type Routing tab.



To set Routing Based on Truck-Type:

1. Display the Route/Mileage Processing Options dialog box for IntelliRoute with MileMaker as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Truck-Type Routing** tab.

3. In the Trailer Length area, click **48 ft. or Less** or **53 ft.**, as appropriate.
4. In the Truck Width area, click **96 in. or Less** or **102 in.**, as appropriate.
5. In the Trailer Options area, click **Single**, **Doubles**, or **Triples** to specify the trailer option type.
6. In the **Route Variance Tolerance** box, you can enter the acceptable increase in route length, in miles or kilometers, that you want IntelliRoute to tolerate when calculating a route for the Truck-Type parameters given in the Truck Configuration area. The default tolerance is zero.

Note:

---

If you enter a value greater than zero in **Route Variance Tolerance**, the route will be calculated twice. The first calculation determines the route length using the Truck-Type parameters you specified in the Truck Configuration area. The second calculation determines the route length based on a standard vehicle. If the difference is greater than the value in **Route Variance Tolerance**, IntelliRoute will display the route based on a standard vehicle.

---

7. Click **Miles** or **Kilometers** to indicate how you expressed the value in **Route Variance Tolerance**.
8. Click **OK** to save your changes and exit the dialog box.

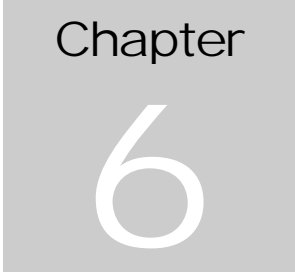
When a Quickest or Lowest-Cost inquiry is calculated for using Truck-Type parameters, messages might appear that indicate whether the route could be calculated using all the truck configuration criteria you specified for the route.

Subsequent Quickest or Lowest-Cost inquiries that you calculate will use the options you specified in the **Truck-Type Routing** tab. If you need to calculate mileages or routes that are authorized for standard-sized vehicles, be sure to reset the values in the **Truck-Type Routing** tab.

For more information on calculating inquiries using truck configuration parameters, see the procedures for entering Quickest and Lowest-Cost inquiries in Chapters 3 and 4.



# PRINTING AND COPYING INQUIRY OUTPUT



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---

## Previewing Print Output

You can preview information to be printed before sending it to the printer.



To preview print output:

1. On the File menu, click Print Preview. IntelliRoute displays a preview window with the information to be printed.
2. You can use the buttons at the top of the preview window as follows:

| To  | Click                    |
|---|--------------------------|
| Print the document  | <b>Print</b>             |
| View the next page, if available  | <b>Next Page</b>         |
| View the previous page, if available  | <b>Prev Page</b>         |
| Toggle between two-page and one-page views  | <b>Two Page/One Page</b> |
| Zoom into the document, if available  | <b>Zoom In</b>           |
| Return to the previous zoom level, if available   | <b>Zoom Out</b>          |
| Set the print options for the previewed document (for additional information, see step 3 below) | <b>Options</b>           |
| Exit this window  | <b>Close</b>             |

3. To set the print options, click Options. The Print Options dialog box appears. The options available in this dialog box vary depending on the type of information you are printing. Specify the following print options as available:
  - a. In the Print list, select from the following as available:
    - **Route Itinerary** to print the itinerary associated with this route.
    - **Route Pack** to print a packet of information including a summary page, an overview map page, and a set of pages showing segments of the itinerary with corresponding maps.
    - **Current Map** to print just the map that displays your route.
  - b. To specify how you want the document positioned on the printed page, click **Portrait** or **Landscape**.
  - c. Under **Route Options**, select from the following as available:
    - To print summary information, click **Summary Page**.
    - To print the overview map page, click **Overview Map Page**.
  - d. To return to the preview window, click **OK**.

4. To exit the preview window, click Close.

---

## Printing and Copying Inquiry Output

IntelliRoute enables you to print the results of a mileage or route inquiry and send your output directly to the printer. You can also copy the results of a mileage or route inquiry to the Windows clipboard.

### Printing and Copying Mileage Inquiry Results

You can print and copy output directly from a mileage inquiry dialog box, as illustrated below.



To print and copy the output of a mileage inquiry:

1. Calculate a mileage inquiry. For information on creating a mileage inquiry, see Chapter 3.

The inquiry results are shown in the output area at the bottom of the dialog box.

**Figure 6-1:** MileMaker HHG/Practical Mileage Inquiry screen

| Location        | Miles | County   |
|-----------------|-------|----------|
| CHICAGO, IL     |       | COOK     |
| DAYTONA BCH, FL | 1088  | VOLUSIA  |
| GAYLORD, TX     | 1400  | LIPSCOMB |
| Total           | 2488  |          |

2. To send the output directly to the printer, click **Print**.
3. To copy the output to the Windows clipboard, click **Copy**. This information can be pasted into another application.

## Printing Route Inquiry Results

➡ To print the output from your route inquiries:

1. Do one of the following:

- On the toolbar, click **Print**.

*or*

- On the **File** menu, click **Print**.

The Print dialog box appears. The appearance of this dialog box varies depending upon the type of printer you are connected to.

2. Specify the pages you want to print and the number of copies.

3. In the **Print** list, select from the following as available:

- **Route Itinerary** to print the itinerary associated with this route.
- **Route Pack** to print a packet of information including a summary page, an overview map page, and a set of pages showing segments of the itinerary with corresponding maps.
- **Current Map** to print just the map that displays your route.

4. Under **Route Options**, select from the following as available:

- To print route summary information, click **Route Summary Page**.
- To print the overview map page, click **Overview Map Page**.

5. To print the output, click **OK**.

## Copying Route Inquiry Results

The copy commands available for copying route inquiries to the Windows clipboard vary depending upon the type of route inquiry.

- ➔ To copy the output from a MileMaker Practical Route or MileMaker HHG Route inquiry:
  - On the **Edit** menu, click **Copy Itinerary**. The itinerary is copied to the Windows clipboard.
  
- ➔ To copy the output from a Lowest-Cost Route or Quickest Route inquiry:
  - On the **Edit** menu, click:
    - **Copy Map** to copy the map from the inquiry to the Windows clipboard.
    - **Copy Itinerary** to copy the itinerary from the inquiry to the Windows clipboard.
    - **Copy All** to copy all information from the itinerary to the Windows clipboard.

---

Note: To display the copied information in another Windows application, open that application, click the **Edit** menu, and then click **Paste**.

---

---

## Changing the Route Caption

You can change the caption of the IntelliRoute window. By default, each window you open is labeled incrementally as Route 1, Route 2, and so on. You might want to change a window caption when you print or copy the information in the window. The changed caption exists for the duration of the session only and is useful when you need to capture screen information.

- ➔ To change the route caption:
  1. On the **Window** menu, click **Change caption**.  
The Change Caption dialog box appears.
  2. Enter a new caption for the window and click **OK**.  
The caption you entered replaces the default route caption for the duration of the session.

---

## Copying a Map to the Clipboard

- ➔ To copy a map currently shown in the active window to another Windows application:
  1. On the **Edit** menu, select **Copy Map**. The map on your screen is copied to the Windows clipboard.
  2. To display the map in another Windows application, open that application and then use the Windows paste function to place the map.

---

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---

## Working with the Map

IntelliRoute allows you to work with the map to:

- Customize your view of the map and itinerary.
- Zoom in to view specific areas on the map.
- Find and label locations on the map.
- Create a route inquiry directly on the map.
- Avoid or prefer specific road segments in a route inquiry.
- Import locations.
- Use Area Searches.

---

## Viewing and Customizing the Map

In this section, you will learn how to view more of the map when an itinerary is open, how to obtain more information about the map, and how to customize the map's appearance.

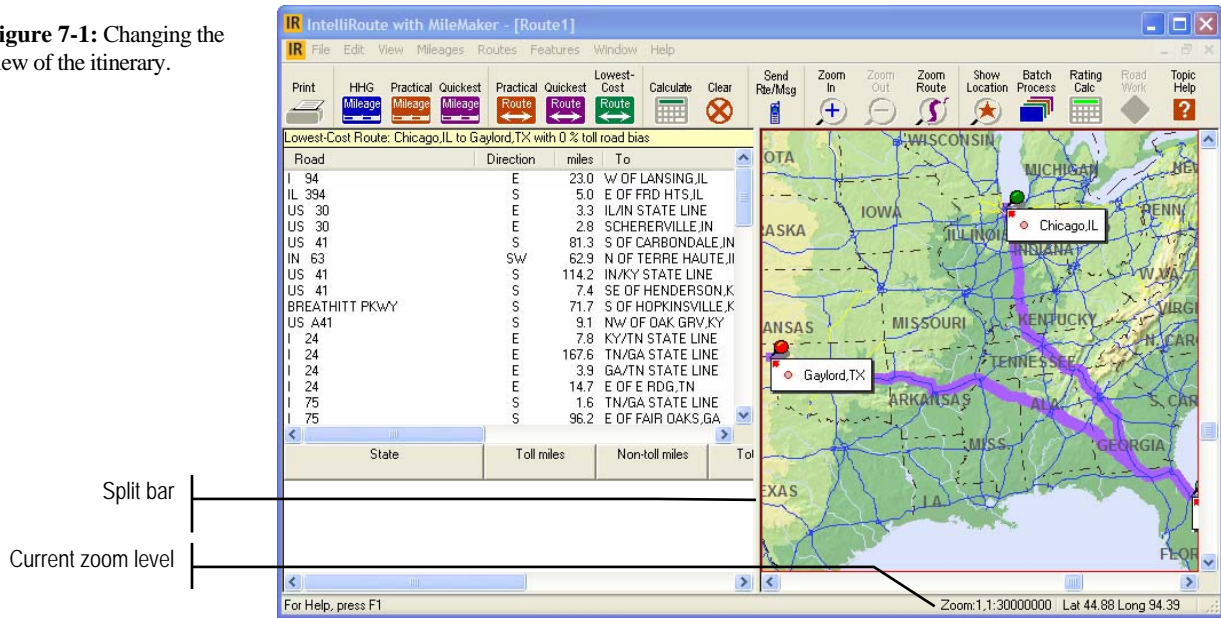
### Viewing the Itinerary

Depending upon the route inquiry type, when the results appear, you might see an itinerary and a map or an itinerary only.


Whenever the **Map/Itinerary** exists, there are two ways to change the view:

- You can drag the split bar on the right side of the itinerary to the left or right.
- You can use the **View** option on the **Map** menu.

**Figure 7-1:** Changing the view of the itinerary.



To change the view using the split bar:

1. Position your cursor over the bar that separates the itinerary and the map. The cursor changes to  when it is correctly positioned.
2. While holding the mouse button down, drag the split bar to the left or the right until you have the view you want.



To change the view using the menu:

1. On the **View** menu, click **Map/Itinerary**.
2. Click one of the following:
  - **Map Only** to move the split bar to the far left of your screen. This hides the itinerary and displays only the map in the active window.
  - **Itinerary Only** to move the split bar to the far right of your screen. This hides the map and displays only the itinerary in the active window.
  - **Map/Itinerary Split** to restore the default display of the map on the right, the itinerary on the left, and the split bar down the middle.

## Viewing IntelliRoute Itinerary Output

When you calculate an inquiry using IntelliRoute with MileMaker, the text itinerary area is shown in various colors to help you identify the type of information you are viewing. The colors are associated with information as follows:

- RoadWork information is shown in orange text.
- Driver break information is shown in blue text.
- Fuel stops are shown in green text.
- Weigh stations are shown in teal text.
- Truck-Type Violation Indicators are shown in red text.

## Viewing the Map Scale and Map Legend

The scale shows you distances in miles relative to the zoom level of the current map view. The legend tells you what the symbols on the map mean. You can show or hide the map scale and legend in the active map window as needed.

- ➔ To show or hide the scale:
  - On the **View** menu, click **Scale**.
- ➔ To show or hide the legend:
  - On the **View** menu, click **Legend**.

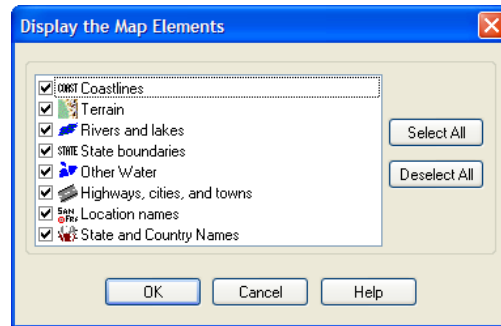
## Customizing the Map's Appearance

You can specify the map elements, such as rivers and lakes, state boundaries, highways, and cities you want to display in the IntelliRoute maps. You can also display the fuel stops, weigh stations, and rest areas associated with a Quickest or Lowest-Cost Route Inquiry.

## Displaying Map Elements

- ➔ To specify the map elements that you want to display:
  1. On the **View** menu, click **Map Elements**. The Display the Map Elements dialog box appears. By default, all items are selected.

**Figure 7-2:** Specifying the map elements you want to display.



2. To specify the individual map elements that you want to display on the map, select the appropriate check boxes.
3. To display all map elements, click **Select All**.
4. To clear all map elements, click **Deselect All**.

## Displaying Fuel Stops

When you run a Quickest or Lowest-Cost Route Inquiry you can display the fuel stops in the map that appears.

**Note:** Before you run the inquiry, verify that in the **Display Options** tab in the Route/Mileage Processing Options dialog box, either **Show Fuel Network** or **Show All Fuel Stops** is selected.

- ➔ To display fuel stops on the map for a quickest or lowest-cost route:
1. Run a Quickest or Lowest-Cost Route Inquiry.
  2. From the **View** menu, verify that the **Truck Stops** command is selected. A check mark appears to the left of the command if it is selected.
  3. Zoom into the map. You must be at zoom level 5 or greater to see the fuel stop icons.

---

## Moving Around the Map

There are several ways to zoom in and out on the map to see more or less map detail. There are also several methods for positioning the map, including scrolling and using the Locator Map.

### Zooming In and Out on the Map

You can zoom in and out on the map by:

- Using the rubber band zoom.

- Using one of the zoom selections on the **View** menu or one of the zoom buttons on the toolbar.
- Using the zoom selection on a label's shortcut menu.

There are nine zoom levels in IntelliRoute. The current zoom level is displayed in the status bar at the lower right of the screen.

## Using the Rubber Band Zoom

- ➔ To perform a rubber band zoom:
  - Click on the map and, holding the mouse button down, draw a rectangle around the area you wish to zoom in to.
  - Release the mouse button to zoom in to the area you have defined.

## Using Menu Commands or Toolbar Buttons to Zoom

- ➔ To zoom in to the next scale level and increase the level of detail in the visible area of the map, do one of the following:
  - On the toolbar, click **Zoom In**.
  - or*
  - On the **View** menu, click **Zoom In**.
- ➔ To zoom out to the next scale level and decrease the level of detail in the visible area of the map, do one of the following:
  - On the toolbar, click **Zoom Out**.
  - or*
  - On the **View** menu, click **Zoom Out**.
- ➔ To restore the map to the previous zoom view:
  - On the **View** menu, click **Undo Zoom**. The text for this command toggles to **Redo Zoom**.

---

**Note:** The text of this command varies depending on the last zoom command or scroll function performed. After you use the scroll bars, the text of this command toggles to allow you to undo or redo the last scroll function.

---

- ➔ To zoom in or out to display a complete view of the current route in the active window, do one of the following:
  - On the toolbar, click **Zoom Route**.
  - or*

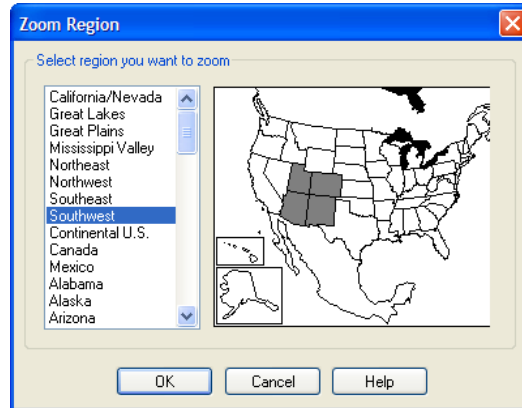
- On the **View** menu, click **Zoom Route**.



To identify the area where you want to zoom to:

1. On the **View** menu, click **Zoom Region**. The Zoom Region dialog box appears.
2. In the list box, click the state or region that you want to zoom to. As you select a state or region, it is highlighted on the map in the dialog box.

**Figure 7-3:** Setting the zoom region.



3. To set the map in the active window to the selected region, click **OK**.

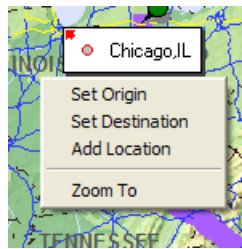
## Using the Map Label to Zoom



To zoom in to a specific location on the map:

1. Click on a location on the map to display the map label.
2. Right-click on the label to display the shortcut menu.

**Figure 7-4:** Using the shortcut menu on the map label to zoom.



3. Click **Zoom To** to zoom in to the location.

## Positioning the Map

There are several ways to position the active map. You can:

- Use the scroll bars to scroll the map vertically or horizontally.
- Use the Compass to scroll in any direction.
- Use the Locator Map to move the active map to a particular location.

## Using the Scroll Bars

- To scroll the map using the Windows-standard scroll bars in IntelliRoute:
  - Click on the arrows in the scroll bar or drag the scroll box.
- To restore the map to the previous location:
  - On the **View** menu, click **Undo Scroll**. The text for this command toggles to **Redo Scroll**.

---

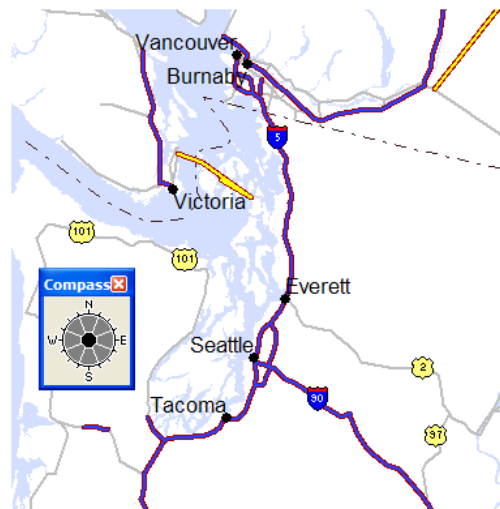
**Note:** The text of this command varies depending on the last zoom command or scroll function performed. After you use the zoom tool, the text of this command toggles to allow you to undo or redo the last zoom function.


---

## Using the Compass

- To scroll the map using the Compass:
  1. On the **View** menu, click **Compass Rose**. The Compass appears on the map.

**Figure 7-5:** Using the Compass to scroll the map.



2. To scroll the map, click on any of the shaded areas within the Compass to move in that direction.  
The Compass is particularly effective for scrolling the map diagonally.
3. To close the Compass, click the  (Close button) in the upper right corner of the compass.

## Using the Locator Map

➡ To move the map using the Locator Map:

1. On the **View** menu, click **Locator Map**. The Locator Map appears on the active map as a rectangle that shows you your current map view in the context of the larger, surrounding area.

**Figure 7-6:** Using the Locator Map to position the active map.



2. To move to another area shown within the Locator Map, drag the rectangle in the Locator Map.

---

**Note:** To reposition the Locator Map window, click its title bar and drag it to a different area on the active map. To resize the Locator Map, drag its borders to the new size.

---

## Using Show Location

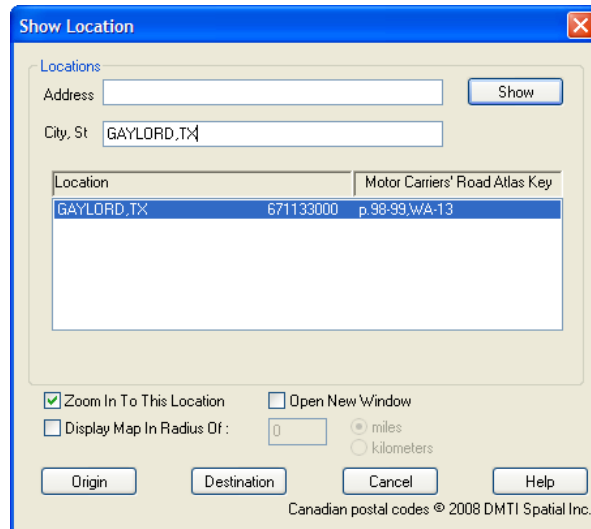
➡ To find a location:

1. Do one of the following:
  - On the toolbar, click **Show Location**.
  - or*
  - On the **Features** menu, click **Show Location**.

The Show Location dialog box appears.

2. In the **Locations** box, enter the origin. Select the desired location in the list box under the **Locations** box.

**Figure 7-7:** Show Location dialog box



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**Note:** If the Newfoundland Abbreviation is set to **NL**, you can use the **Browse Nuevo Leon, Mexico instead** checkbox to access locations that use the **NL** abbreviation for Mexican state Nuevo Leon.

---

3. You can do the following:

- To display the map centered on the location and shown with a label, click the **Zoom In To This Location** check box, and then click **Show**.
- To display the map illustrating the radius within a range of miles or kilometers, click the **Display Map in Radius Of** check box, enter the number miles or kilometers, click **Miles** or **Kilometers**, and then click **Show**.
- To display the location in a new window, click **Open New window**, and then click **Show**. On the **Window** menu, select the window name to switch to a different map.
- To display the origin or destination on the map for a route you have already calculated, click **Origin** or **Destination**.

---

## Working with Map Labels

Labels appear on a map when you click on the map or when you calculate a route. You can apply labels directly on the map, open a map's label to access a shortcut menu, show or hide map labels, and show the full or abbreviated location name on the label.

### Applying a Map Label Directly on the Map

You can click on any location on the map to open its label. If there are multiple locations in the area, you will need to select the location you want.

- ➔ To select a location for a map label:
  - Click on the map. One of the following will occur:
    - If only one location is associated with this point, a map label will appear.
    - If multiple locations are associated with this point, the Select a Location dialog box displays a list of locations associated with this point. Click on the location you want to associate with the label and then click **OK**.

### Opening a Drop-Down Menu from a Label

- ➔ To open a label's drop-down menu:
  - Right-click the map label to display the shortcut menu. Click on the command you want to apply.

### Hiding and Showing Map Labels

When you calculate a route, the labels for the origin, destination, and any via points appear on the map automatically. You can hide these labels, as well as any other labels that are open on the map.

- ➔ To hide all map labels:
  - On the **View** menu, click **Label**, and then click **Hide All Labels**.
- ➔ To hide an individual map label:
  - Double-click on the label.

- ➔ To show labels for a route:
  - On the **View** menu, click **Label**, and then click **Label Route**.

## Showing Unabbreviated Location Names on Map Labels

By default, abbreviated names are displayed for certain locations (for example, SALT LK CY,UT and VIRGINIA BCH,VA) on map labels. If you prefer, you can display the full name of the location on the map label (for example, SALT LAKE CITY, UT and VIRGINIA BEACH, VA).

- ➔ To display the unabbreviated location name on the map label:
  - On the **View** menu, click **Label**, and then click **Show Unabbreviated Name**.

---

## Creating a Route Directly on the Map

You can mark the origin, destination, and via points for a Quickest Route directly on the map and then click the **Calculate** button on the toolbar to process the route. There are two ways to mark locations on the map:

- Using the map label.
- Using route markers.

## Using Map Labels to Create a Quickest Route

- ➔ To create a Quickest Route using map labels:
  1. Label the origin of the route using the Show Location dialog box or by clicking directly on the map.
  2. Right-click the label to display the shortcut menu.
  3. Click **Set Origin** on the drop-down menu to mark the route's origin.
  4. Repeat steps 1–3 to mark the destination and any via points, using **Set Destination** to mark the route's destination and **Add Location** to mark any via points.
  5. When all locations have been added to the route, click **Calculate** on the toolbar to calculate the route.

---

**Note:** Make sure that you have added all of your locations to the route before processing it; transactions are deducted each time you recalculate the route.

---

## Using Route Markers to Create a Quickest Route

- ➔ To create a Quickest Route using route markers:
1. On the **View** menu, click **Route Markers**. The Route Markers window appears.
  2. To label the origin of the route, click on the marker labeled **Orig**. Then hold the mouse button down and drag the marker to the route origin.

---

**Tip:** It is easier to place the markers if you are zoomed in on the map.

---

3. Repeat steps 1–2 to mark the destination and any via points, using the **Dest** marker to mark the route's destination and the **Via** marker to mark any via points.
4. When all locations have been added to the route, click **Calculate** on the toolbar to calculate the route.

---

**Note:** Make sure that you have added all of your locations to the route before processing it; transactions are deducted each time you recalculate the route.

---

5. To create a new route on the map, click **Clear** on the toolbar. The current route and all route and mileage information is cleared.

---

## Setting Avoided and Preferred Segments on a Map

When creating a route, you might want to avoid or include particular road segments in your route. You can set the road segments that you prefer, or want to avoid, directly on the map as shown on the following pages.

**Warning:** Using the Avoid/Prefer Segment feature may produce routes that do not conform to the Rand McNally standard for truck-usable highways, and, as such, may deviate from highway segments that Rand McNally has defined as generally suitable for truck travel.

---

## Creating Avoided and Preferred Segments

- ➔ To create a preferred or avoided road segment:
1. On the map, click on the road segment you want IntelliRoute to avoid or prefer.
  2. A location label with the name of the road appears. Right-click the label to display the shortcut menu.
  3. Click one of the following:

- To avoid the segment, click **Avoid Segment**. The Avoid Highway Segments dialog box displays the highway name and coordinates of the avoided highway segment. Click **OK**. The avoided segment will appear in red on the map.
  - To mark a road segment as preferred, click **Prefer Segment**. The Prefer Highway Segments dialog box displays the highway name and coordinates of the preferred highway segment. Click **OK**. The preferred segment will appear in green on the map.
4. Enter locations and process your route as usual. When you calculate the route, IntelliRoute will route around the avoided segment(s) and/or include the preferred segment(s).

---

Note: Avoided and preferred road segments apply only to Quickest and Lowest-Cost route calculations. The avoided or preferred road segment will remain active for all subsequent routes generated until you remove the feature from that segment.

---

## Resetting Avoided or Preferred Segments

You can reset avoided and preferred segments when the settings no longer apply.



To reset segments using the **Features** menu:

1. On the **Features** menu, click either **Avoided Segments** or **Preferred Segments**. A dialog box displays a list of the avoided or preferred segments.
2. Click the segment you want to reset.
3. Click **Reset selected segments**.
4. Click **Done**.



To reset segments using map labels:

1. On the map, click on the segment you want to reset. A location label with the name of the road appears.
2. Right-click on the label to display a shortcut menu.
3. Click **Avoid Segment** or **Prefer Segment**.
4. In the Segment Selection dialog box, do one of the following:
  - Click **Reset** to clear the avoid or prefer feature from the selected segment.
  - Click **Expand** to display the **Avoid Highway Segments** or **Prefer Highway Segments** as appropriate. Click **OK** to close the dialog box.

---

Note: Network Users: Whenever an individual user sets an avoided or preferred segment on the IntelliRoute map, *that segment becomes designated as avoided or preferred on all workstations throughout the network.*

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## Importing Locations

The Import Locations feature allows you to import user-defined locations to the database used by IntelliRoute with MileMaker. For example, you might want to create an imported location for a specific location, such as a warehouse that is a frequent origin, via point, or destination. You can enter imported locations in the Location field of an inquiry dialog box.

You can define and import a point for the IntelliRoute with MileMaker database by:

- Identifying a location on the map. You can zoom into the map and click on the specific location you want to import to the database.
- Entering the location information directly into the Add Imported Locations dialog box. You can specify the exact location in the dialog box. Or, you can specify a location, such as a city or truck stop, and then enter the latitude and longitude fields to adjust to the exact location that you want to import.
- Importing locations from a formatted file. You will need to specify the fields and sequence of the fields in the file that you want to import.

### Importing a Location from the Map



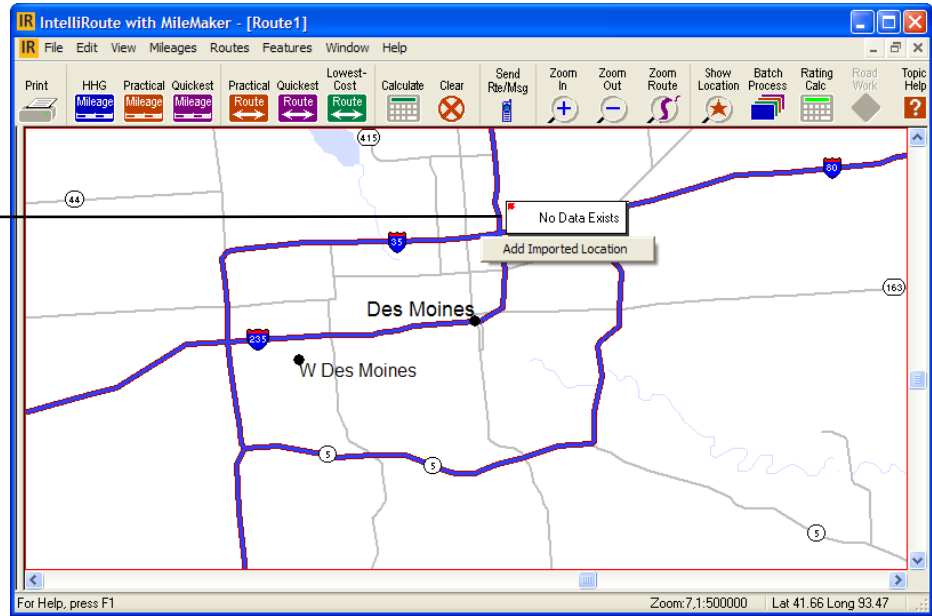
To import a location that you identify on the map:

1. In the map window, zoom to the area where you want to identify a location to import.
2. Double-click on the location that you want to include in the database. A map label appears with the text, “No Data Exists.”

- Right-click the map label to display the **Add Imported Location** button as illustrated below.

**Figure 7-8:** Importing a location from the map.

Right-click the "No Data Exists" label to display the Add Imported Location button



- Click **Add Imported Location**. The Add Imported Location dialog box appears.

**Figure 7-9:** Specifying the information for the location you are importing.

- In the **Name** box, enter the name that you want to give to this location. For example, if you frequently travel to a particular warehouse outside of a city, you might want to enter its name so that you could use it as an origin, via point, or destination in an inquiry.
- In the **State** box, enter the state or province code for this location.
- In the **Pin Type** box, select the icon that will appear on the map to mark this location.

8. By default, IntelliRoute with MileMaker displays the **Latitude** and **Longitude** associated with the location you selected on the map. You can change these values if necessary.
9. To add this imported location to the database, click **OK**.

The imported location is associated with a truck pin that might display on the map, depending upon the zoom level associated with the pin. For more information on viewing imported locations on the map, see “Displaying Imported Locations on the Map” on page 104.

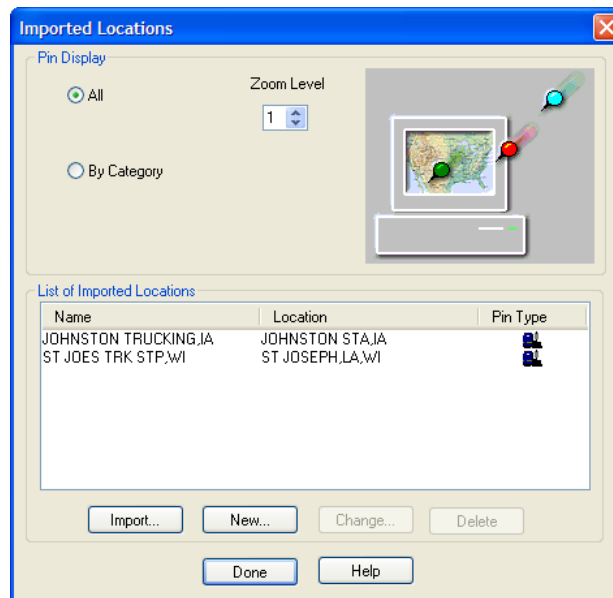
## Importing a Location by Specification



To enter location information directly into the Add Imported Locations dialog box:

1. On the **Features** menu, click **Imported Locations**. The Imported Locations dialog box displays the list of locations that were imported previously.

**Figure 7-10:** Viewing the list of imported locations.



2. You can specify a particular Zoom Level for the Pin Type you are importing. For more information, see “Displaying Imported Locations on the Map” on page 104.
3. To specify the information for an imported location, click **New**. The Add Imported Location dialog box appears.
4. Optionally, type a location in the **Location** box and then click **Add**. You might want to do this to position yourself near the location you will enter in the **Name** field. You can adjust the **Latitude** and **Longitude** fields to the exact coordinates you need by clicking **Clear**.
5. In the **Name** box, enter the name that you want to give to this location. For example, if you frequently travel to a particular warehouse outside of a city,

you might want to enter its name so that you could use it as an origin, via point, or destination in an inquiry.

6. In the **State** box, enter the state or province code for this location.
7. In the **Pin Type** box, select the icon that will appear on the map to mark this location.
8. In the **Latitude** and **Longitude** boxes, enter the values associated with the location you want to import. Specify the values using two decimal positions (for example, **41.67** and **93.70**).
9. To add this imported location to the database, click **OK**. The Imported Locations dialog box appears.
10. To exit, click **Done**.

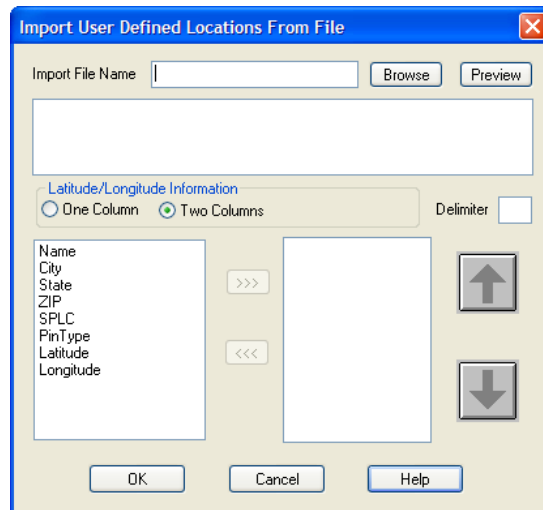
The imported location is associated with a truck pin that might display on the map, depending upon the zoom level associated with the pin. For more information on viewing imported locations on the map, see “Displaying Imported Locations on the Map” on page 104.

## Importing Locations from a Formatted File

➡ To import locations from a formatted file:




1. On the **Features** menu, click **Imported Locations**. The Imported Locations dialog box displays the list of locations that were imported previously.
2. To specify the format of the imported file, click **Import**. The Import User Defined Locations From File dialog box appears.

**Figure 7-11:** Importing locations from a formatted file.



3. Do one of the following:
  - In the **Import File Name** box, enter the name of the file that you want to import.

*or*

- To locate the file that you want to import, click **Browse**. The Select Imported Point File dialog box appears. Locate the file using standard Windows file techniques. Then click **OK**.
4. To preview the file, click **Preview**.
  5. Specify how the Latitude and Longitude values are formatted by clicking either **One Column** or **Two Columns**.
  6. Do one of the following:
    - If the Latitude and Longitude values are presented in two columns, specify the separator character in the **Delimiter** box.
    - If the Latitude and Longitude values are presented in one column, a **Latitude Longitude** button appears to the right of **Two Columns**. The **Latitude Longitude** button indicates the order in which these values are listed in the file. If these values are listed in reverse sequence in the file, click the button to indicate that the values will be listed in **Longitude Latitude** sequence.
  7. Specify the order of the fields in the import file using the list boxes at the bottom of the dialog box as follows:
    - To indicate that a field name is in the imported file, click the field name in the left column and then click . The field name appears in the right column.
    - To change the sort order for the import file, click the field name in the right column that you want to move and then click  or .
  8. To begin importing the locations from the file, click **OK**.

Each imported location is associated with a truck pin that might display on the map, depending upon the zoom level associated with the pin. For more information on viewing imported locations on the map, see “Displaying Imported Locations on the Map” on page 104.

## Displaying Imported Locations on the Map

You can display imported locations based on the zoom level of the map or you can display all imported locations regardless of the zoom level.

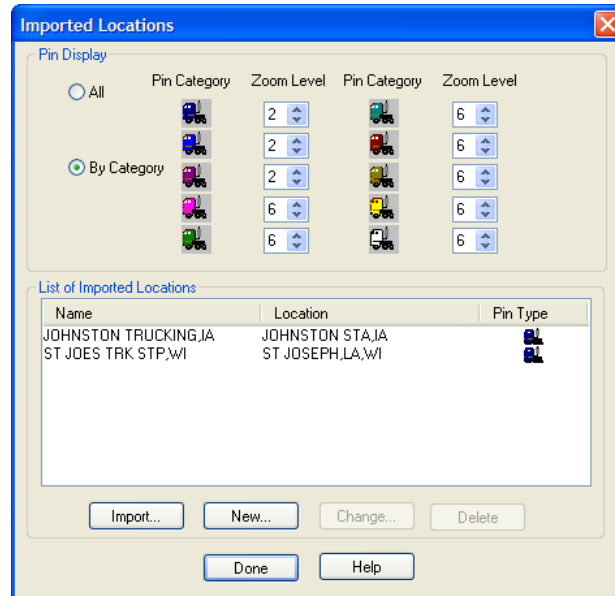
### Displaying Imported Locations by Zoom Level

A truck pin is associated with each location that you import. There are ten categories of truck pins, each associated with a unique color. Default values are not associated with any pin type category; those are established by you or your company.

The pins will display on the map based on its zoom level. You can specify whether you want all pins to display at a certain zoom level and all higher levels, or you can identify the starting zoom level for each pin type category.

In the example below, the pins for the first two categories are set to appear at zoom levels 2–9. All other pins will appear at zoom levels 6–9. You can use this feature to help avoid clutter in the map window.

**Figure 7-12:** Specifying the zoom level for truck pins associated with imported locations.



To set the zoom level for imported locations:

1. On the **Features** menu, click **Imported Locations**. The Imported Locations dialog box appears.
2. In the **Pin Display** area, do one of the following:
  - To display all pins for each imported location at the same zoom level, click **All**, and then enter or select the **Zoom Level**. All pins will be displayed when the map is at the specified, or higher zoom level. For example, if you click **All** and enter a **Zoom Level** of 6, the pins associated with each map location will be visible when the map is zoomed into levels 6, 7, 8, and 9 only.
  - To display pins on the map based on category, click **By Category**. For each of the ten categories, enter or select the starting **Zoom Level**. This is useful when you want to associate certain pins with a zoomed-out map view and other pins with a more zoomed-in (detailed) view of the map.
3. To save your changes and exit, click **Done**.

## Displaying All Imported Locations

You can show or hide all imported locations on the map regardless of zoom level.

- ➔ To show or hide all imported points on the map:
  - On the **View** menu, verify that **Imported Points** is selected. This is the default option.

## Showing or Hiding the Label for an Imported Location

You can show or hide the label associated with a particular imported location.

- ➔ To show or hide the label for a particular imported location on the map:
  1. Zoom in to the area of the map that contains the imported location.
  2. Do one of the following:
    - To show a label, double-click the truck pin for the imported location.
    - To hide a label, double-click the label.

## Changing Information for an Imported Location

You might need to change the state or pin you entered previously for an imported location.

- ➔ To change information about an imported location:
  1. Do one of the following:
    - On the **Features** menu, click **Imported Locations**. The Imported Location dialog box appears. In the **List of Imported Locations** box, click the name of the location you want to change and then click **Change**.
    - or*
    - Right-mouse click the label associated with the imported location to display the shortcut menu. On the shortcut menu, click **Change Location Properties**.

The Change Imported Location dialog box appears.

**Figure 7-13:** Changing information for an imported location.

Change Imported Location

User Location

Name JOHNSTON TRUCKING State IA

Pin Type [Truck Icon] Latitude 41.65 Longitude 93.69

Location

[Empty Input Field] Add Clear

JOHNSTON STA,IA 536862001

OK Cancel Help

Canadian postal codes © 2008 DMT! Spatial Inc.

2. To change the **State**, enter a new state code.
3. To change the **Pin Type**, select a new pin from the list.
4. To save your changes, click **OK**.
5. When a message box prompts you to verify that you want to replace the information for that location, click **OK**. The Imported Locations dialog box appears.
6. To exit, click **Done**.

## Deleting an Imported Location

You might need to delete an imported location.



To delete an imported location using the **Features** menu:

1. On the **Features** menu, click **Imported Locations**. The Imported Location dialog box appears.
2. In the **List of Imported Locations** box, click the name of the location you want to delete and then click **Delete**.

Tip:

To delete multiple imported locations, hold down the **SHIFT** key as you click on the location names.

3. When a message box prompts you to verify that you want to delete the selected location, click **Yes**.
4. A message displays indicating that the location is deleted. Click **OK** to acknowledge the message.
5. To exit the Imported Locations dialog box, click **Done**.

- ➔ To delete an imported location directly on the map:
  1. Right-mouse click the label associated with the imported location to display the shortcut menu.
  2. On the shortcut menu, click **Delete Location**. The Delete Imported Location dialog box appears.
  3. To delete the imported location, click **OK**.

---

## Using Area Searches

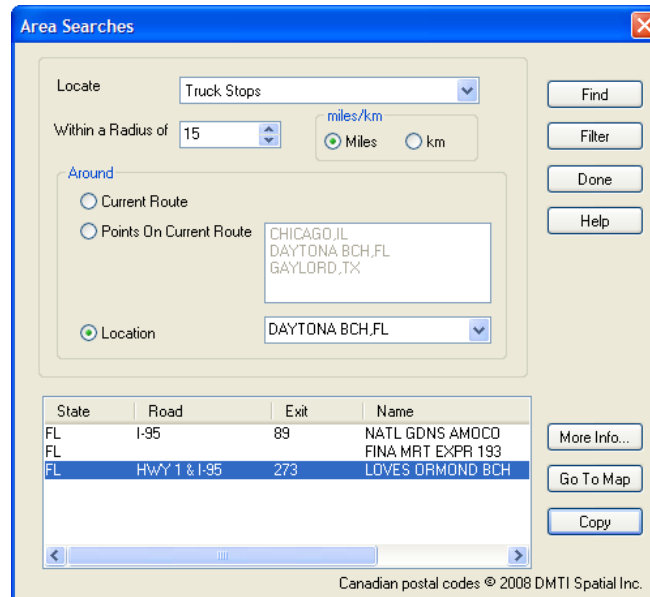
The Area Search feature allows you to search for cities, imported locations, truck stops, and weigh stations within a radius of a location you specify, or along the current route.

### Searching within a Radius of a Location

- ➔ To search for cities, imported locations, truck stops, and weigh stations within a radius of a location you specify:
  1. On the **Features** menu, click **Area Searches**. The Area Search dialog box appears.
  2. In the **Locate** box, select **Cities, Imported Locations, Truck Stops** or **Weigh Stations** to indicate the information you want to find within the radius of a location.
  3. In the **Within a Radius of** box, type or select the search radius.
  4. To specify whether you want the search radius in miles or kilometers, click **Miles** or **km**.
  5. To specify a location, click **Location** and enter the name of the location. You can specify the location by city name, truck stop name, SPLC, ZIP Code, Canadian postal code, and other formats. For more information, see “Accepted Formats for the Location Entry Field” in Chapter 2.
  6. If you are searching for truck stops, you can specify the amenities you want available at the truck stops. For more information, see “Filtering Truck Stop Amenities” on page 111.

7. To find locations within the radius you specified, click **Find**. The locations display in the lower half of the dialog box as illustrated below.

**Figure 7-14:** Searching for truck stops within a radius of a location.



8. After the area search results appear, you can:
  - Display all information about a truck stop (if you searched for truck stops) by selecting a truck stop name, and then clicking **More Info**. You will be able to view, print, and save the information about the selected truck stop. Click **OK** to exit the dialog box.
  - Go to a location on the map by selecting a location name, and then clicking **Go To Map**.
  - Copy the results of the search to the clipboard by clicking **Copy**.
  - Exit this dialog box by clicking **Done**.

## Searching Along a Route

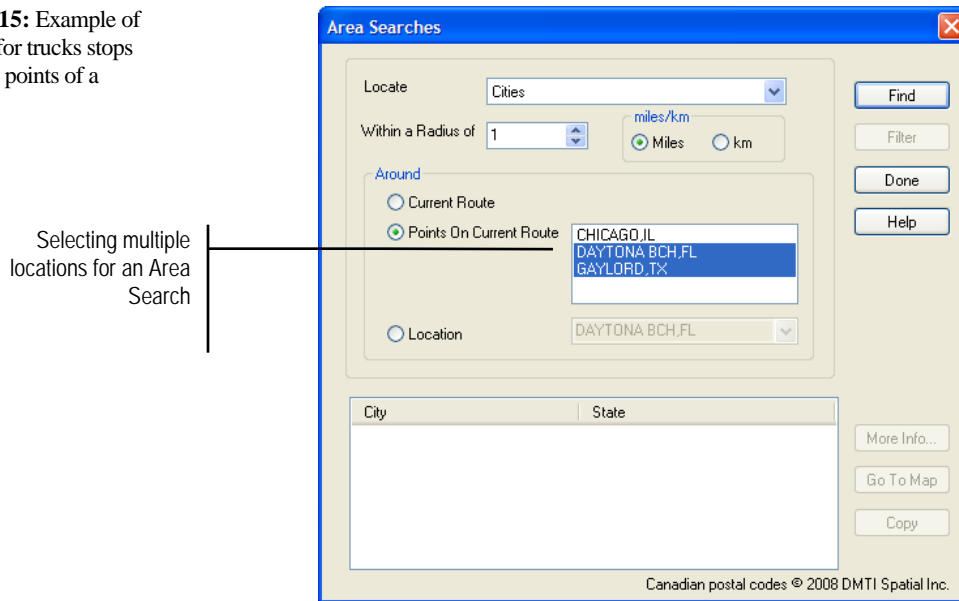
If you want to search for locations along a route, you must run a route inquiry before you run an area search. The type of area search you can run varies with the type of route inquiry:

If you run a:

- MileMaker HHG Route Inquiry, you can run an area search around selected points (origin, via points, and destination) on the current route.
- For all other route inquiries, you can run an area search along the entire current route, or around selected points on the current route.

- ➡ To search for cities, imported locations, truck stops and weigh stations using the results of the current route inquiry:
1. On the **Features** menu, click **Area Searches**. The Area Search dialog box appears.
  2. In the **Locate** box, select **Cities**, **Imported Locations**, **Truck Stops**, or **Weigh Stations** to indicate the information you want to find within the radius of a location.
  3. In the **Within a Radius of** box, type or select the search radius.
  4. To specify whether you want the search radius in miles or kilometers, click **Miles** or **km**.
  5. Do one of the following:
    - To find cities, imported locations, truck stops, or weigh stations along the entire current route, click **Current Route**. This option is not available if the current route resulted from a MileMaker HHG Route Inquiry.
    - To find cities imported locations, truck stops, or weigh stations around the origin, via points, or destination on the current route, click **Points On Current Route**. Then select the points around which you want to find cities, imported locations, or truck stops. To select more than one location, hold down CTRL while you select each location.

**Figure 7-15:** Example of searching for trucks stops around the points of a route.



6. If you are searching for truck stops, you can specify the amenities you want available at the truck stops. For more information, see “Filtering Truck Stop Amenities” on page 111.
7. To find locations within the radius you specified, click **Find**. The locations will display in the lower half of the dialog box.
8. After the area search results appear, you can:

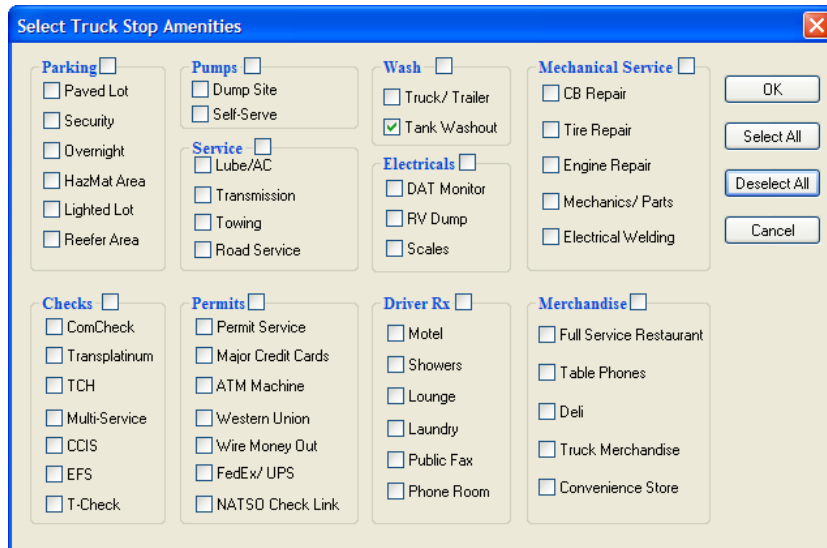
- Display all information about a truck stop (if you searched for truck stops) by selecting a truck stop name, and then clicking **More Info**. You will be able to view, print, and save the information about the selected truck stop. Click **OK** to exit the dialog box.
- Go to a location on the map by selecting a location name, and then clicking **Go To Map**.
- Copy the results of the search to the clipboard by clicking **Copy**.
- Exit this dialog box by clicking **Done**.

## Filtering Truck Stop Amenities

You can filter an area search to locate truck stops that have the amenities you prefer.

1. Display the Area Search dialog box as shown above in “Searching within a Radius of a Location” or “Searching Along a Route” and specify the information you need to locate truck stops.
2. To filter the search to display truck stops that have amenities you prefer, click **Filter**. The **Select Truck Stop Amenities** dialog box appears.

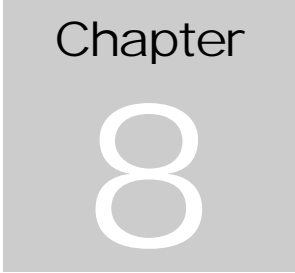
**Figure 7-16:** Selecting truck stop amenities for an Area Search.



3. To specify truck stop amenities, do the following:
  - To select individual amenities, click on each amenity that you want to apply.
  - To select all amenities in a group, click the heading label for that amenity group. For example, click **Parking** and **Wash** to select all amenities in those groups. Optionally, you can exclude a selection within the group by clicking on the individual amenity to clear the check box.
  - To select all amenities, click **Select All**.

- To clear all amenity selections, click **Deselect All**.
4. To save your changes and exit this dialog box, click **OK**. The Area Search dialog box appears.

# ENTERING BATCH INQUIRIES



---

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---

## Using Batch Inquiries

You can use this IntelliRoute Batch option to create a file containing several mileage and/or route inquiries. This file can then be processed at a later time. When you process the *batch input file*, IntelliRoute calculates all of its routes and generates a *batch output file* in ASCII format. Other programs such as spreadsheets, word processors, or databases can read the batch output file for additional processing or printing.

You can have as many batch input files as you wish, and can edit and execute them as often as necessary. This saves you from having to re-enter information in other programs for frequently processed routes.

You use the **Batch Processing** command on the **File** menu to create a batch input file. You can process the batch file from the **File** menu in IntelliRoute.

---

Note: In the *batch output file* the original Toll Cost data appears on the SM records (State Mileage Breakdown Records). The Toll Cost data now returns on the Toll Cost (TC) records.

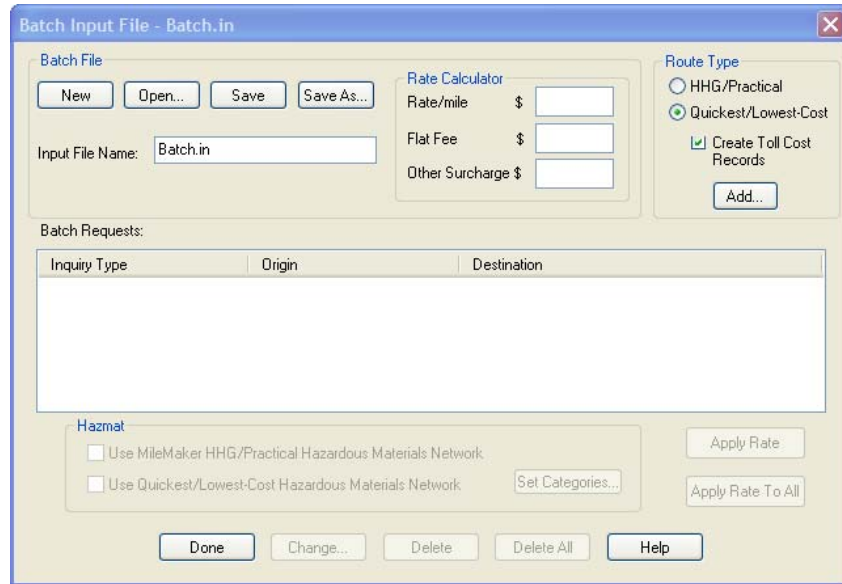
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---

## Creating a Batch Input File

- To set up a batch input file:
  1. On the **File** menu, click **Batch Processing**, and then select **Setup**.
  2. In the Batch Input File - Batch.in dialog box, select the **Route Type** by clicking the **HHG/Practical** or **Quickest/Lowest-Cost** option.

**Figure 8-1:** Batch Input File dialog box

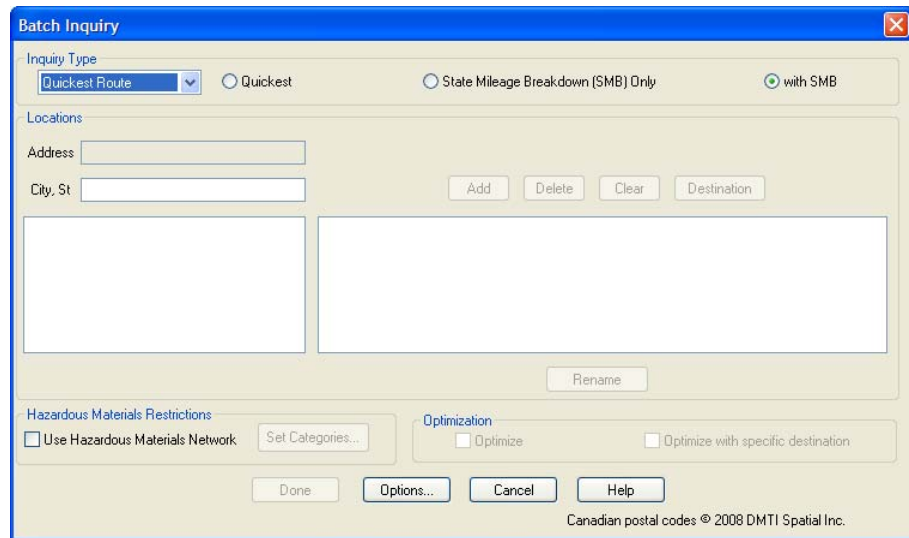


3. Optionally, if the **Quickest/Lowest-Cost** option is selected, click the **Create Toll Cost Records** check box if you want toll cost records created.

Note: The **Create Toll Cost Records** check box remains dimmed until the **Quickest/Lowest-Cost** radio button is activated.

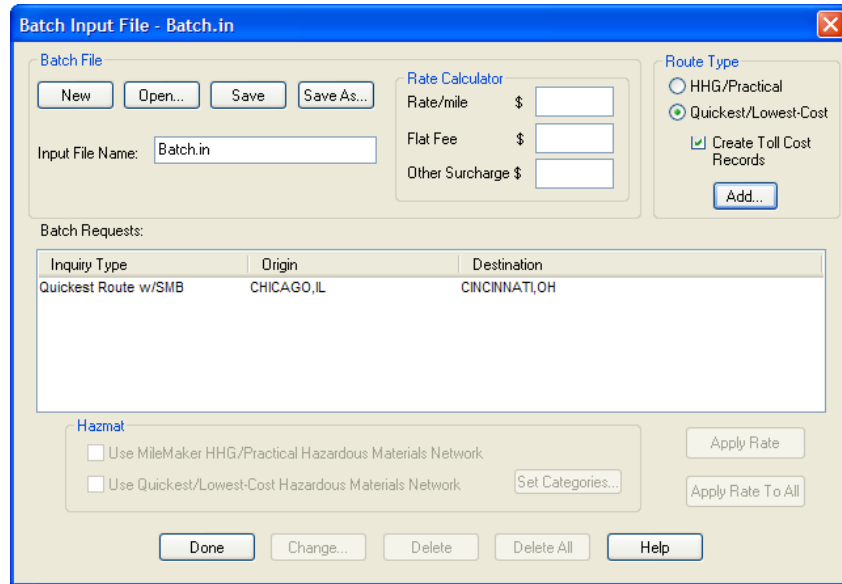
4. Click **Add** to open the Batch Inquiry dialog box.
5. In the Batch Inquiry dialog box, select a route or mileage inquiry in the **Inquiry Type** section.

**Figure 8-2:** Batch Inquiry dialog box



6. Enter your route list and specify any customization options by clicking **Options**. For more information on entering an inquiry, see Chapter 3.
7. Click **Done**. This returns you to the Batch Input File - Batch.in dialog box. The inquiry you just created appears in the **Batch Requests** list.

**Figure 8-3:** Batch Input File dialog with Batch Requests.



8. To create and include another inquiry in the current batch file, click **Add** again. Continue to add inquiries until the batch file is complete.
9. In the **Input File Name** box, enter a name for the file.
10. Optionally, use the **Rate Calculator** area to enter rates for the route, then select the appropriate route in the **Batch Requests** list and click **Apply Rates**. If you want to apply the rates to all the routes, click **Apply Rate All**.
11. In the Hazmat area, select the appropriate settings for hazardous materials.
12. Do one of the following:
  - Click **Done** to save the file under the name you provided in the **Input File Name** box and exit the dialog box.
  - or*
  - Click **Save** if you want to save the file but remain in the dialog box to create another batch input file.

---

Note: IntelliRoute stores Batch input files in the IntelliRoute directory on your hard drive.

---

13. IntelliRoute asks if you want to save changes to the existing batch file. Do one of the following:
  - Click **Yes** to save the changes.
  - or*
  - Click **No** to abandon the data you have entered.

---

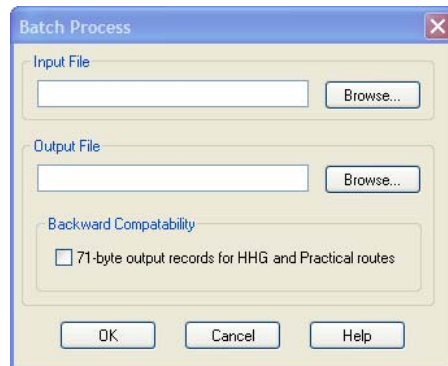
## Processing a Batch File

When you process the *batch input file*, IntelliRoute calculates all of its routes and generates a *batch output file* in ASCII format. Other programs such as spreadsheets, word processors, or databases can read the batch output file for additional processing or printing. You can process a batch file within IntelliRoute.

### Processing a Batch File in IntelliRoute

- ➡ To process a batch file in IntelliRoute:
1. Do one of the following:
    - On the toolbar, click **Batch Process**.
    - or*
    - On the **File** menu, click **Batch Processing**, and then click **Process**.
  2. In the Batch Process dialog box **Input File** field, type in the name of the batch file you want to process. You can also click **Browse** to see a list of available files.

**Figure 8-4:** Batch Process dialog box

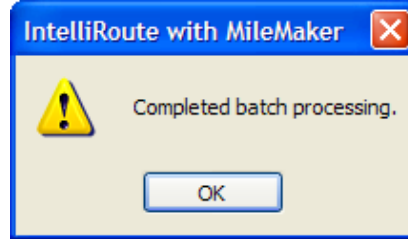


3. In the **Output File** box, type in a name for the output file. You can also click **Browse** to select a different output folder and/or select an existing file to which you can append the Input File.

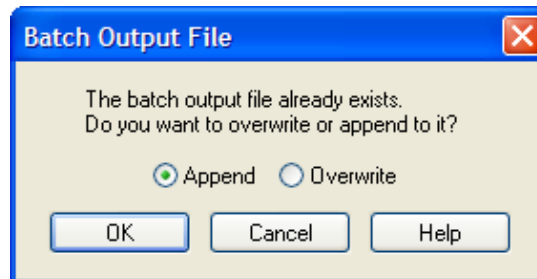
4. Click **OK** to start the batch process.

IntelliRoute responds in one of the following ways:

- If you typed a unique name for **Output File**, IntelliRoute displays a confirmation message when it completes the batch processing:



- If IntelliRoute discovers another file with the same name (in the same folder) as the name you provided in the **Output File** box, it displays the following dialog box:



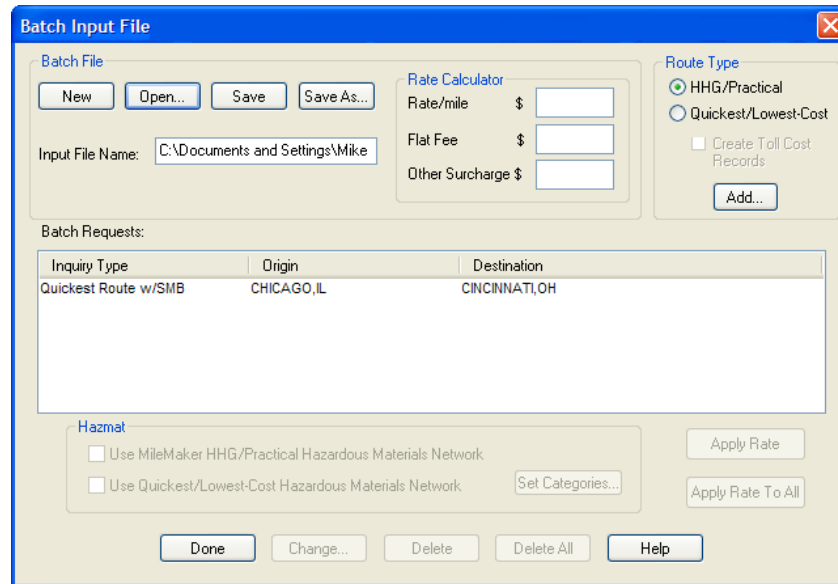
In this case, select **Append** to add the output from the batch input file to the end of the existing batch output file, or select **Overwrite** to replace the batch output file with a new file. Then, click **OK** to start the batch process.

---

## Other Batch File Options

Once you have created one or more batch input files, you can use the following options in the Batch Input File - Batch.in dialog box to manage and edit them.

**Figure 8-5:** Batch Input File dialog options



### Open

Use to open an existing batch input file that you want to edit, delete, or rename.

### Save

Use to save a batch input file you have created. This option saves the file, but leaves the dialog box open so that you can create another batch input file. The **Done** button saves the file and exits the dialog box.

### Save As

Use to save an existing batch input file under another file name.

### Change

Use to edit a route highlighted in the **Batch Requests** list. **Change** opens the route inquiry dialog box, where you can edit the route as required.

### Delete

Use to delete a route from a batch input file. Highlight the route you want to delete, then click the **Delete** button.

### Delete All

Use to delete all of the routes in the open batch input file. You can then use the **Add** button to add new routes from scratch.



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## Using Additional Features

This chapter describes the following features:

- **Saving Routes**, which lets you store and re-use all the information generated when you created a route.
- **Rate Tables**, which lets you identify several rating variables by zone, vehicle size, load size, material type, driver handling, and any customized criteria that you want to establish. After you complete the Rate Tables, you can use the Advanced Calculator to calculate a rate quote for the last route you created by identifying the rate variables you want to apply.
- **Rating Calculator**, which lets you calculate the rate quotes for each route. Two types of calculators are provided—Simple and Advanced. Both allow you to calculate route information for the last trip you developed in the current session as follows:
  - The **Simple Calculator** lets you calculate a rate quote by rate per mile, flat fees, and any other surcharges that apply to the route.
  - The **Advanced Calculator** lets you calculate a rate quote using the variables you entered in the Rating Table. Note that you must have entered the variables you want to use in the calculation to the Rating Tables. Variables can include vehicle size, load size, load and material type, and more.
- **RoadWork™** online construction update feature, which lets you download up-to-date information about road availability from Rand McNally via the Internet. Once you download this information, you can choose to apply the RoadWork updates to route itineraries and have IntelliRoute calculate routes that avoid road construction and closed roads.
- **Fuel Network Manager**, which lets you create a custom list of approved fuel stops. After you create your custom Fuel Network, you can display fuel stops from the network in the itinerary of a calculated route.
- **Fuel Finder**, which lets you display, print, and save a list of fuel locations along a calculated route.
- **Smart City Browse**, which produces a city list for you in a list box as soon as you, while entering a location for an inquiry, have entered the first three characters of the location followed by a comma.
- **Toll Cost** feature which allows you to obtain toll cost breakdown results after calculating a Quickest or Lowest-Cost route.
- **Weigh Station** feature, which allows you to display and search for weigh stations in the United States and Canada. You have the option of displaying

weigh stations for the Quickest and Lowest-Cost routes on both the route itinerary and map.

- **Rest Area** feature, which allows you to display rest area icons on the Quickest and Lowest-Cost route maps of a calculated route. You can filter the display of rest area icons for rest rooms and overnight truck parking.
- **IntelliRoute® Fuel** feature, which allows you to obtain fuel-optimized trip planning via the IntelliRoute® Fuel online service.
- **IntelliRoute® Lane Rates** feature, which allows you to obtain current market rate index information for a specific lane via the IntelliRoute® Lanes Rates online service.
- **IntelliRoute® Streets** feature, which allows you to obtain street-level routing and mapping for the Quickest and Lowest-Cost Route Inquiries.
- **Truck-Type Violation Indicators**, which are displayed in the itinerary for a route when settings for trailer lengths of 53', truck widths of 102", and double or triple trailer options are in violation. Each segment of the route in the itinerary that has a violation is highlighted in red, and details regarding the violation and route segment specifics, including distance, are displayed.
- **Update via Internet** feature, which provides a means of downloading toll costs and other updates from the Internet, and a means of viewing the download history log.
- **Microsoft Excel Add-In**, which provides IntelliRoute mileage and State Mileage Breakdown (SMB) type routing calculations within a Microsoft Excel worksheet.

---

## Saving Routes

You might find it useful to save all of the information that you have developed for a route or mileage inquiry. A saved route can be retrieved and displayed using the options as set when you originally created the inquiry. For information on setting options, refer to Chapter 5.

After you run a mileage inquiry, you can save it using the Save Route button. After you run a route inquiry, you can save the route using the Archive Route command from the Features menu. The saved information will incorporate all entries you made in the mileage and/or route inquiry dialog (such as inquiry type, hazardous materials setting, and optimization settings) and all options as they were set in the Route/Mileage Processing Options dialog box.

Entries that you make when you save a route can be used later when you want to search for a route.

### Saving a Route from a Mileage Inquiry



To save a route list from a mileage inquiry:

1. Complete the information in the mileage inquiry dialog box. For information on creating a mileage inquiry, refer to Chapter 3.
2. If necessary, click **Route Options** to apply changes to the settings for the inquiry. The settings associated with this inquiry are saved with the route.
3. Click **Calculate** to generate the mileage inquiry.
4. When the mileage information is returned in the inquiry dialog box, click **Save Route**.  
The Route Archival dialog box appears.
5. In the **User ID** box, enter a user name that identifies you as the person who created this route. The user name can be up to ten characters.  
So that you and others can easily find routes you have created, enter the **User ID** exactly the same way each time you save a route.
6. In the **Notes** box, enter notes pertaining to this route. A maximum of 40 characters can be entered in the note.

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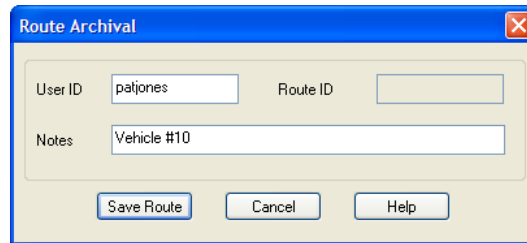
#### Tip:

Your company may want to standardize the use of the **Notes** box in order to attach useful information, such as Vehicle ID or Driver ID, which can be used to search the archive for reporting and analysis.

---

**Figure 9-1:** Sample information used to save a route.

An example of a completed Route Archival dialog box is shown below:



7. To save the route, click **Save Route**.
8. IntelliRoute displays a message box that shows the Route ID assigned to this route. Click **OK** to acknowledge the message.

## Saving a Route from a Route Inquiry

- ➔ To save a route from a route inquiry:
1. Complete the information in the route inquiry dialog box. For information on creating a route inquiry, refer to Chapter 4.
  2. If necessary, click **Options** to apply changes to the settings for the inquiry. The settings associated with this inquiry are saved with the route.
  3. Click **Calculate** to generate the route inquiry. The route information is returned in a new window.
  4. On the **Features** menu, click **Archive Route**.
  5. In the **User ID** box, enter a user name that identifies you as the person who created this route. The user name can be up to ten characters.  
So that you and others can easily find routes you have created, enter the **User ID** exactly the same way each time you save a route.
  6. In the **Notes** field, enter notes pertaining to this route. A maximum of 40 characters can be entered in the note.

---

**Tip:** Your company may want to standardize the use of the **Notes** box in order to attach useful information, such as Vehicle ID or Driver ID, which can be used to search the archive for reporting and analysis.

---

An example of a completed Route Archival dialog box is shown above.

7. To save the route, click **Save Route**.
8. IntelliRoute displays a message box that shows the Route ID assigned to this route. Click **OK** to acknowledge the message.

## Searching for a Saved Route

You can search for and retrieve saved routes. You will be able to view, load, or delete a route from the list that is returned.



To search for a saved route:

1. On the **Features** menu, click **Retrieve Route**.

The Route Retrieval dialog box appears.

**Figure 9-2:** Route Retrieval dialog box

| # | Route ID | User ID | Route Type | Origin | Destination | Notes | Miles/kms | Date |
|---|----------|---------|------------|--------|-------------|-------|-----------|------|
|---|----------|---------|------------|--------|-------------|-------|-----------|------|

2. In the **Route ID** box, you can enter the ID that was assigned by IntelliRoute for the route you want to retrieve. Continue with step 4.
3. You can also search for routes by entering one or more of the fields listed below. The date fields are required; all other fields are optional.
  - In **User ID**, enter the User ID of the person who saved the route.
  - In the **From Date** box, enter the starting date you want to use to search for routes. To select a date from a calendar, click on the down arrow. From the calendar that appears, click on the appropriate date.
  - In the **To Date** box, enter the ending date that you want to use to search for routes. To select a date from a calendar, click on the down arrow. From the calendar that appears, click on the appropriate date.
  - Type or select a location in either or both the **Origin** and **Destination** boxes.
  - In the **Notes** box, enter the note text you typed when you saved the route. You must start with the first character in the original **Notes** field and enter

any additional characters in their exact sequence. For example, if the **Notes** field contains “Vehicle #10” you can search for “Veh”, but you cannot search for “10”.

4. Click **Search**. A list of routes that match the search criteria appears in the Search Results area of the dialog box.

## Viewing a Retrieved Route



To view a retrieved route:

1. Search for the route you need as shown in “Searching for a Saved Route” on page 127.
2. In the Search Results area of the dialog box, click on the route number in the # column for the route that you want to retrieve as illustrated below.

**Figure 9-3:** Selecting a route from the list returned by a search.

To select a route, click on the number of the route.

The screenshot shows the 'Route Retrieval' dialog box. It has a search criteria section with fields for User ID, Origin, From Date, Destination, To Date, and Notes. Below that is a 'Search By Route ID' section with a Route ID field and a Search button. The 'Search Results' section contains a table with the following data:

| # | Route ID | User ID  | Route Type    | Origin     | Destination | Notes       | Miles/kms | Date       |
|---|----------|----------|---------------|------------|-------------|-------------|-----------|------------|
| 1 | 1        | patjones | Quickest With | CHICAGO,IL | GAYLORD,T   | Vehicle #10 | 2622.8    | 09/07/2007 |
| 2 | 2        | patjones | Quickest With | CHICAGO,IL | GAYLORD,T   | Vehicle #20 | 2622.8    | 09/07/2007 |

At the bottom of the dialog box are buttons for View Route, Load Route, Delete Route, SMB Report, Close, and Help.

3. To view the route, click **View Route**. The Route View dialog box displays route information and the mileage/route processing options as set when the route was archived.

**Figure 9-4:** View Route dialog box.

Toll Cost  
Exchange Rate.

Route View

User ID: patjones Date/Time: 09/07/2007 07:38 Route Type: Quickest With SMB

Route ID: 1 Notes: Vehicle #10 Total Miles: 2622.8

CHICAGO,IL  
DAYTONA BCH,FL  
GAYLORD,TX

Route/Mileage Processing Options

Physical Restriction: ON Units Of Measure: MILES

Canadian Border Restriction: ON Toll Road Bias: 0

Zero Miles Processing:  Do not use default ZIP code processing

Toll Road Avoid Segments:

Avoid Segments:

SMB Order: ALPHABETICAL

Exchange Rate: 1.0000

Optimization: OFF

Hazardous Material Restrictions: OFF

Categories:

Close

Routing Costs

Cost Of Time:  \$/Hour

Maintenance Cost:

Average Fuel Cost:

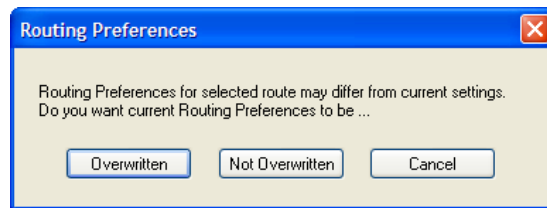
Average Fuel Efficiency:

4. Click **Close** to return to the Route Retrieval dialog box.

## Loading a Retrieved Route

- ➡ To load a retrieved route:
1. Search for the route you need as shown in “Searching for a Saved Route” on page 127.
  2. In the Search Results area of the dialog box, click on the route number in the # column for the route that you want to load.
  3. To load the route, click the **Load Route** button. The message box shown below appears.

**Figure 9-5:** Indicating whether you want to load the selected route with the original or current route settings.



4. In the **Routing Preferences** message box, click one of the following:
  - If you want to apply the settings as set in the Route/Mileage Processing Options dialog box when the route was archived, click **Overwritten**. The archived route will display as it was originally saved; existing settings in the Route/Mileage Processing Options dialog box will be overwritten with those associated with the archived route.
  - If you want to apply the current settings as set in the Route/Mileage Processing Options dialog box to the archived route, click **Not Overwritten**. The archived route will display using the current settings from the Route/Mileage Processing Options dialog box; the current settings in this dialog box will not be overwritten.

The route information will appear in an inquiry dialog box.

---

**Note:** If you resave the route information, you will need to indicate whether you want to overwrite the existing Route ID with the current settings or create a new route.

---

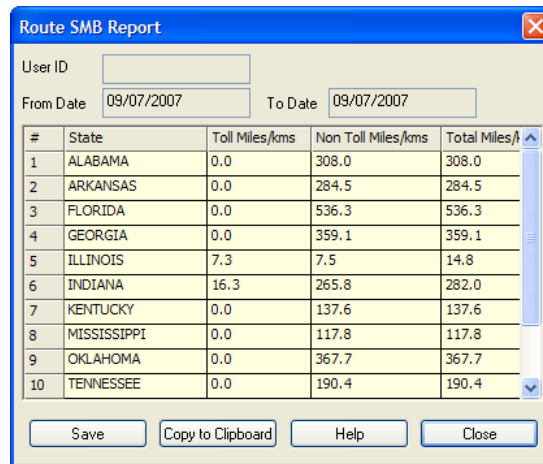
## Deleting a Retrieved Route

- ➡ To delete a retrieved route that you no longer need:
1. Search for the route list you need as shown in “Searching for a Saved Route” on page 127.
  2. In the Search Results area of the dialog box, click on the route number in the # column for the route you want to delete.
  3. Click **Delete Route**. The route is immediately deleted from the Search Results area of the dialog box.

## Viewing State Mileage Breakdown Report

- ➡ To view a breakdown of the mileage by state for all retrieved routes:
1. Search for the route list you need as shown in “Searching for a Saved Route” on page 127.
  2. Click **SMB Report**. The Route SMB Report dialog box displays the toll miles, non-toll miles, and total miles by state for all retrieved routes.

**Figure 9-6:** Viewing the State Mileage Breakdown for all retrieved routes.



| #  | State       | Toll Miles/kms | Non Toll Miles/kms | Total Miles/▲ |
|----|-------------|----------------|--------------------|---------------|
| 1  | ALABAMA     | 0.0            | 308.0              | 308.0         |
| 2  | ARKANSAS    | 0.0            | 284.5              | 284.5         |
| 3  | FLORIDA     | 0.0            | 536.3              | 536.3         |
| 4  | GEORGIA     | 0.0            | 359.1              | 359.1         |
| 5  | ILLINOIS    | 7.3            | 7.5                | 14.8          |
| 6  | INDIANA     | 16.3           | 265.8              | 282.0         |
| 7  | KENTUCKY    | 0.0            | 137.6              | 137.6         |
| 8  | MISSISSIPPI | 0.0            | 117.8              | 117.8         |
| 9  | OKLAHOMA    | 0.0            | 367.7              | 367.7         |
| 10 | TENNESSEE   | 0.0            | 190.4              | 190.4         |

3. To save this report in an ASCII-text format, click **Save**. In the Save As dialog box, specify a name and location for the file. Then click **Save**.
4. To copy this report to the clipboard, click **Copy to Clipboard**.
5. To exit this dialog box, click **Close**. The Route Retrieval dialog box appears.
6. To exit, click **Close**.

---

## Using the Rating Calculator

IntelliRoute provides a rate tool that you can use to calculate rate charges for bids and quotes based on the last calculated route inquiry. The rating calculator includes a simple and advanced version. The simple calculator helps you quickly create rates based on a flat fee, rate per mile or kilometer, and miscellaneous surcharges. The advanced calculator helps you create a more complex rate based on information you enter in various rate tables for zones, vehicle size, load size, material type, driver handling, and a customized user defined rate that you can use for miscellaneous charges such as taxes, tolls, and surcharges. Once you calculate a rate, you can print it out to use for bids and quotes.

### Doing a Simple Calculation

The simple rating calculator allows you to quickly create rates for bids and quotes based on the output from a route inquiry. IntelliRoute uses the following formula for a simple calculation:

Total rate = flat fee + (number of miles × rate/mile) + other surcharges.



To calculate a simple rate:

1. Calculate a route inquiry. For more information, see Chapter 4.
2. Do one of the following to display the Rating Calculator:
  - On the toolbar, click **Rating Calc.**
  - or*
  - On the **Features** menu, click **Rating Calculator.**

---

Note: Neither the **Rating Calculator** menu command or the **Rating Calc** icon is available unless you first calculate a route inquiry.

---

**Figure 9-7:** Rate Calculator dialog box using the Simple Calculator.

Trip Summary information is generated from the route inquiry calculation

3. Type in the charges where applicable in the **Rate per Mile**, **Flat Fee**, or **Other Surcharges** boxes.
4. Optionally, type information relating to the charges in the **Reason** boxes.
5. Click **Print** to print a copy of the rate calculation for this route.

---

Tip: If you make any changes to the rate values, click **Calculate** to refresh the **Total Result**. To calculate a new rate from scratch, click **Clear** to empty all the fields.

---

## Doing an Advanced Calculation

You can calculate a more complex rate using the advanced calculator. The advanced calculator lets you include several rating factors based on rate table information that you customize for your situation. In addition to a basic rate per mile or kilometer, you can include rates for zones, vehicle size, load size, material type, driver handling, and a customized user defined rate that you can use for miscellaneous charges such as taxes, tolls, and surcharges.

---

Note: Before you can use the advanced calculator, you must set up the rate tables. For more information, see “Using Rate Tables” on page 135.

---



To use the advanced calculator:

1. Calculate a route inquiry. For more information, see Chapter 4.
2. Do one of the following to display the Rating Calculator:
  - On the toolbar, click **Rating Calc.**
  - or*
  - On the **Features** menu, select **Rating Calculator.**

Note: Neither the **Rating Calculator** command or the **Rating Calc** icon is available unless you first calculate an inquiry.

**Figure 9-8:** Advanced Rating Calculator

3. On the Rating Calculator dialog box, click the **Advanced Calculator** tab.

| Charge Type       | Description | Per Mile/ km/ Route | Charge | Total Charge |
|-------------------|-------------|---------------------|--------|--------------|
| <b>Basic Rate</b> |             |                     |        |              |
| Zone Rate         |             |                     |        |              |
| Vehicle Size      |             |                     |        |              |
| Load Size         |             |                     |        |              |
| Load Type         |             |                     |        |              |
| Driver Handling   |             |                     |        |              |
| User Defined      |             |                     |        |              |

Result

Total:  Date: 9/7/2007

Buttons: Calculate, View Rate Tables..., Print, Clear, Help, OK

4. On the **Basic Rate** line, click in the box under the **Charge** column and type the basic rate per mile or kilometer.
5. On the **Zone Rate** line, double-click in the box under the **Description** column and select a zone rate (if available) from the list. IntelliRoute automatically fills in the **Per Mile/Route**, **Charge**, and **Total Charge** information for the **Zone Rate** you selected.
6. As necessary, repeat the last step for any of the other rate settings (**Vehicle Size**, **Load Size**, **Load Type**, etc.).
7. To view the rate tables used for the **Charge Types**, click **View Rate Tables.**
8. Click **Print** to print a copy of the rate calculation for this route.

Note: If you make any changes to the rate values, click **Calculate** to refresh the **Total Result.** To calculate a new rate, click **Clear** to empty all the fields.

---

# Using Rate Tables

The Rate Tables feature helps you identify several rating variables by mile, kilometer, or route. Values you enter in the rate tables are used by the advanced rating calculator to develop a quick rate quote for a route. You can complete the tables that are relevant to your company. For example, you might not need to identify rates by load size. However, you might need to identify interim storage rates, which can be set up in the **User Defined** tab.

The following rate variables are supported:

- **Zone Rate.** Zones are a collection of one or more states or provinces, generally in the same geographical area. For example, you might identify Oregon and Washington as states comprising a zone. After you identify a zone, you can build a matrix of zones to rates that can be used by the Rating Calculator to develop a rate quote. By default, the zone rate type is specified per miles.
- **Vehicle Size.** You can specify rates by the size of a vehicle. For example, you can specify vehicle sizes such as: 50 ft., greater than 50 ft., and double trailer. By default, the rate type for vehicle size is specified per route.
- **Load Size.** You can specify rates by the size of a load. For example, you can specify load sizes such as: less than 10 tons, 10–20 tons, and greater than 20 tons. By default, the rate type for load size is specified per route.
- **Material Type.** You can specify rates by the type of material in a load. For example, the rate for transporting various types of hazardous material may differ. By default, the material type for load size is specified per route.
- **Driver Handling.** You can specify rates based on the type of load handling required by the driver. For example, you might need to specify different rates for loading and unloading the vehicle. By default, the rate type for driver handling is specified per route.
- **User Defined.** Use this tab to identify rate variables relevant to your company. For example, you might want to add rates for taxes and tolls. By default, the rate type for user defined variables is specified per route.

## Entering Values in the Rate Tables

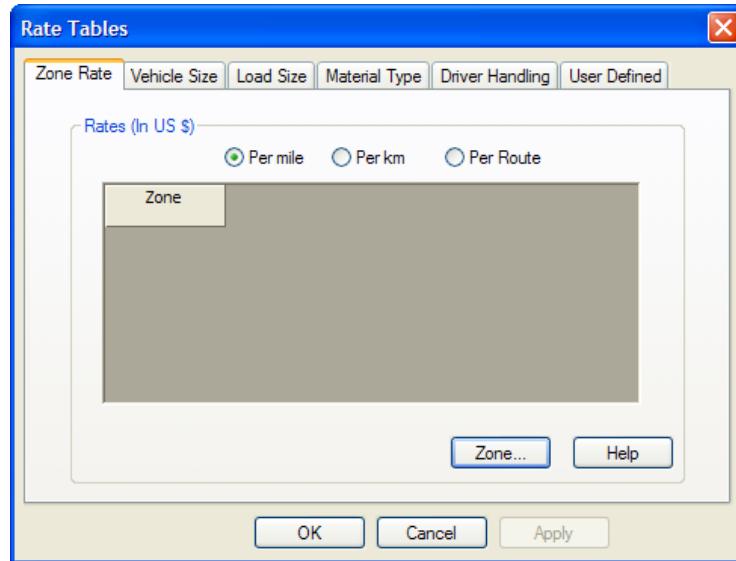


To enter values in the Rate Tables:

1. On the **Features** menu, click **Rate Tables**.

The Rate Tables dialog box appears.

**Figure 9-9:** Setting up the Rate Tables.



2. To enter rates for travel between and within zones, click the **Zone Rate** tab. The zones and any rates already established will appear.

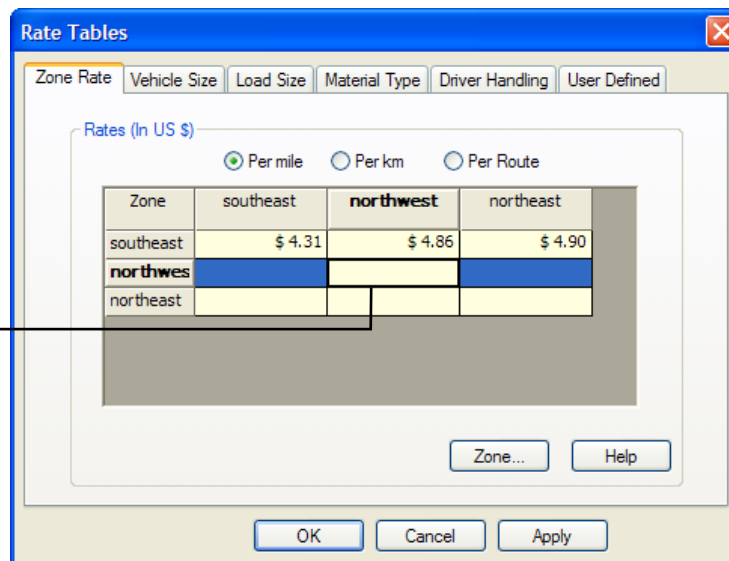
**Note:** If no zones are defined in the **Zone Rate** tab (as illustrated above), you need to create zones by identifying the states and provinces that are associated with each zone. For more information, refer to “Creating Zones” on page 138.

Then do the following:

- a. Click the option that indicates whether you want to apply all amounts entered in the table on a Per Mile, Per km, or Per Route basis.
- b. To enter rates for travel between or within zones, click on a cell in the matrix and enter the applicable rate amount in U.S. dollars.

**Figure 9-10:** Entering rate information in a selected cell.

The selected cell has a bolded border

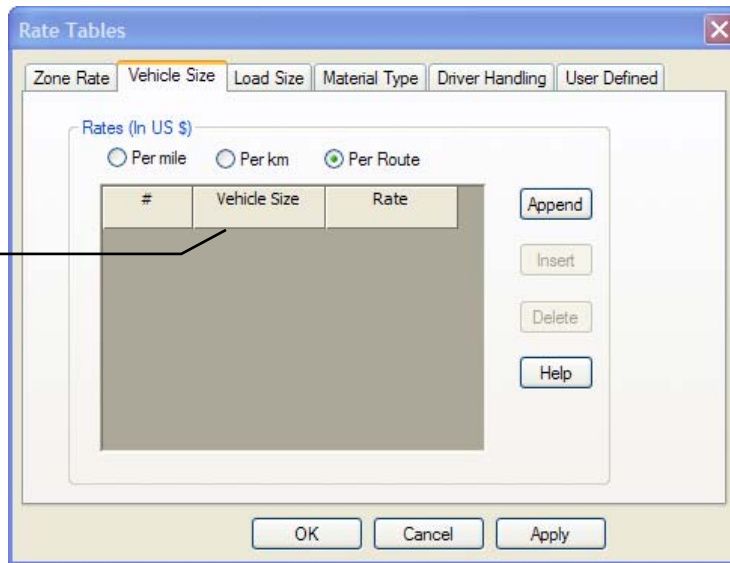


Repeat this step for each zone for which you want to enter rate information.

3. To enter rates for another tab, follow the instructions below. Note rate information for all tabs other than **Zone Rate** is entered in exactly the same manner.
  - a. Click on the tab for which you want to enter rate information. The tab will show rate information, if previously entered. If no information was entered, cells will not be shown, as illustrated below.

**Figure 9-11:** Entering rate information for all tabs other than Zone Rate.

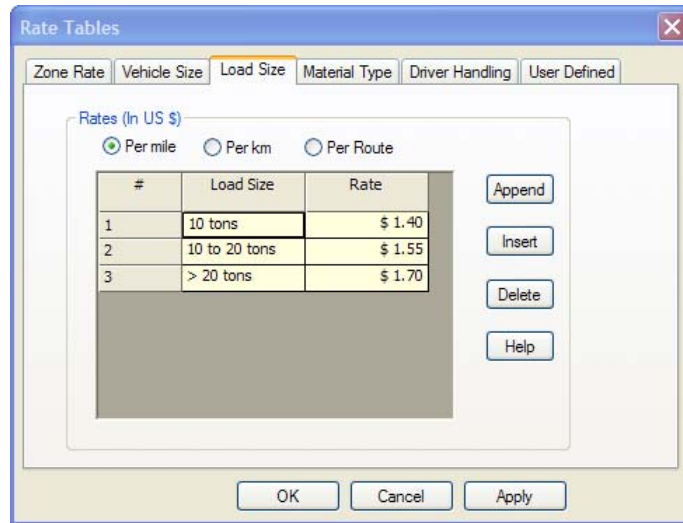
The label of the descriptive column heading is identical to the title of the tab



- b. Click the option that indicates whether you want to apply all amounts entered in the table on a Per Mile, Per km, or Per Route basis.
- c. To add or remove cells to the table, do one of the following:
  - To append a row of cells to the table, click **Append**. A blank row of cells appears at the end of the table. The number in the # column is automatically incremented.
  - To insert a row of cells above an existing row, click the number in the # column above which you want to insert a new row. Then click **Insert**. A new row is inserted above the insertion point. The numbers in the # column are automatically adjusted.
  - To delete a row of cells, click the number in the # column for the row you want to delete. Then click **Delete**. The numbers in the # column are automatically adjusted.
- d. To describe the rate information you are adding, click on a cell in the first entry column and enter descriptive text as illustrated below.

- e. To enter rates related to the selected tab type, click on a cell in the Rate column and enter the applicable rate amount in U.S. dollars as illustrated below.

**Figure 9-12:** Entering descriptive text and rates in the Rate Tables dialog box.



4. To exit the Rate Tables dialog box, click OK.

## Creating Zones

Before you can include rates in the **Zone Rate** tab, you need to identify the states or provinces that are in a particular zone. Generally, these states would be in the same geographical area, for which similar rating variables can be applied. For example, you might identify Oregon and Washington as states comprising a zone if the rate charges from these points are similar. Note that a state can be associated with only one zone.

After you create a zone, you can change or remove the states you have associated with the zone, and you can delete a zone you no longer need.

### Creating a Zone

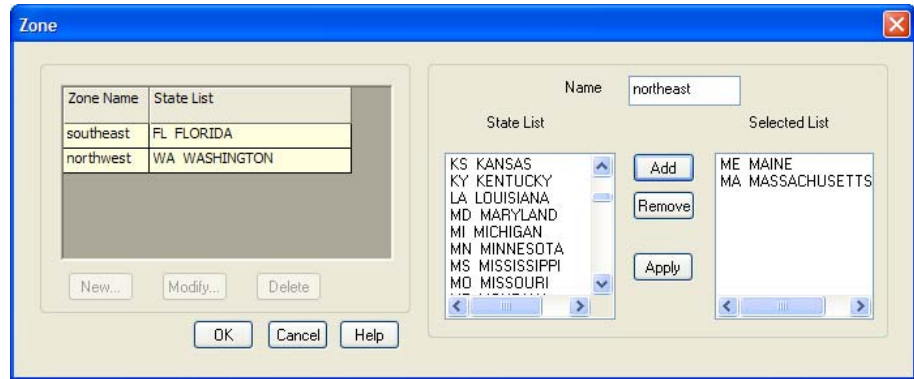


To enter information for a new zone:

1. On the **Features** menu, click **Rate Tables**. The Rate Tables dialog box appears.
2. Click the **Zone Rate** tab and then click **Zone**. The Zone Creation dialog box appears.
3. Click **New**. The Zone Creation dialog box expands to display a list of states that you can associate with a zone.
4. In the **Name** box, enter the name for the zone you are creating.
5. In the **State List** box, click on the state you want to include in the zone, and then click **Add**. The state will appear in the **Selected List**.

Repeat this step for each state you want to include in the zone. The example below illustrates how states are associated with a zone.

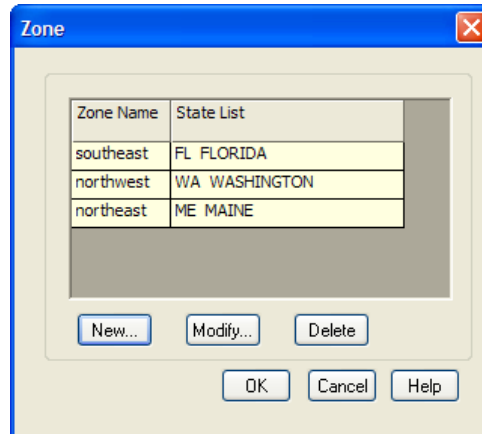
**Figure 9-13:** Identifying states you want to include in a zone.



**Note:** Once you add a state to the **Selected List**, the state cannot be added to another zone.

- When you have completed selecting states for the zone, click **Apply**. The Zone Creation dialog box displays the zones you created, as illustrated below.

**Figure 9-14:** The Zone Creation dialog box displays the list of zones.



- Do one of the following:
  - To create another zone, click **New**. Continue from step 4 above.
  - To modify an existing zone definition, refer to “Modifying a Zone” on page 139.
  - To delete a zone definition, refer to “Deleting a Zone” on page 140.
  - To exit this dialog box, click **OK**.

## Modifying a Zone

➡ To change the states associated with a particular zone:

- In the Rating Tables dialog box, click the **Zone Rate** tab.

2. Click **Zone**. The Zone Creation dialog box appears.
3. Click on the name of the zone that you want to change and then click **Modify**. The Zone Creation dialog box expands to display the states associated with the selected zone.
4. You can do one or more of the following:
  - To add another state to the list, click on the state you want to add in the **State List**. Then click **Add**.
  - To remove a state from the zone, from the **Selected List**, click on the state you want to remove. Then click **Remove**.
5. To apply your changes, click **Apply**. The **Zone Creation dialog** displays the zones.
6. To return to the Rate Tables dialog box, click **OK**.

## Deleting a Zone



To delete a zone:

1. In the Rate Tables dialog box, click the **Zone Rate** tab.
2. Click **Zone**. The Zone Creation dialog box appears.
3. Click on the name of the zone that you want to delete and then click **Delete**.
4. A message box prompts you to verify whether you want to permanently delete the selected zone. Click **OK** to delete the zone.
5. To return to the Rate Tables dialog box, click **OK**.

---

## Applying RoadWork™ Updates to a Calculated Route

The RoadWork feature found in IntelliRoute with MileMaker lets you download up-to-date information about road availability from Rand McNally via the Internet. IntelliRoute uses this information to overlay its road network database with information about road construction, delays, and temporary and permanent road closures. You can choose to apply the RoadWork updates to route itineraries and have IntelliRoute calculate routes that avoid road construction and closed roads. For more information on downloading RoadWork data and activating the RoadWork feature for calculated routes, see Chapter 5.

You can set a default in the Route/Mileage Processing Options dialog box so IntelliRoute always includes RoadWork data in its calculations for Quickest and Lowest-Cost routes. See Chapter 5 to learn how to set this option.

If you did not set the default so IntelliRoute automatically calculates routes with RoadWork data, you can recalculate a route using this data on a case-by-case basis. You can display a RoadWork report listing construction delays and closed roads along the route.

### Recalculating a Route Using RoadWork™ Data

If you did not set the default so IntelliRoute automatically calculates routes with RoadWork data, you can recalculate a Quickest or Lowest-Cost route using RoadWork data and display RoadWork alerts in the itinerary.



To recalculate a route using RoadWork data:

1. Calculate a Quickest or Lowest-Cost route.
2. On the toolbar, click **RoadWork**.

IntelliRoute recalculates the route taking into account RoadWork data. When it's finished, IntelliRoute automatically displays the RoadWork report.

3. View the RoadWork report, and then click **Close**.

## Displaying the RoadWork™ Report

After you calculate a route using RoadWork, you can display the RoadWork report any time. The report lists all the construction delays and closed roads found in the route.

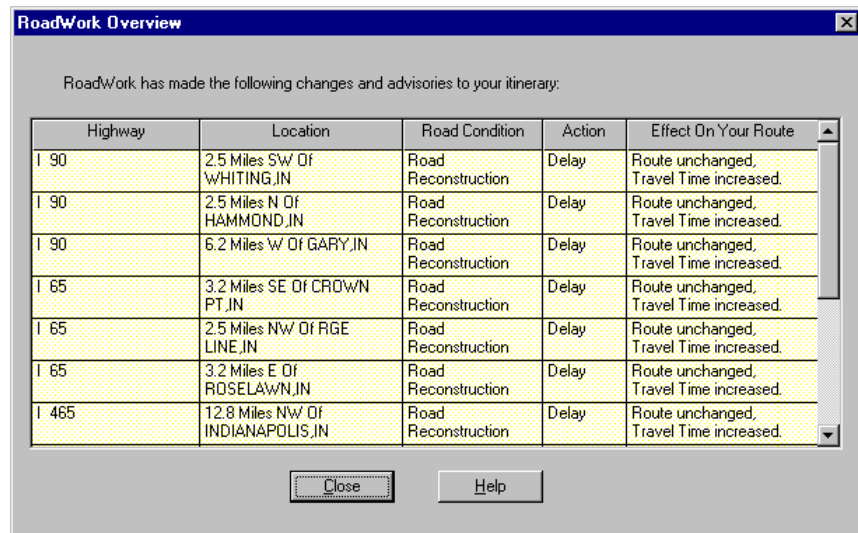


To display the RoadWork report:

1. On the **Features** menu, click **RoadWork Report**.

IntelliRoute displays the RoadWork Overview dialog box.

**Figure 9-15:** RoadWork Overview dialog box (RoadWork Report)



2. After viewing the RoadWork information, click **Close** to remove the dialog box.

---

## Creating a Custom Fuel Network

You can create a custom list of fuel stops using the Fuel Network Manager. After you create your custom Fuel Network, you can display fuel stops from the network in the itinerary of a calculated route.

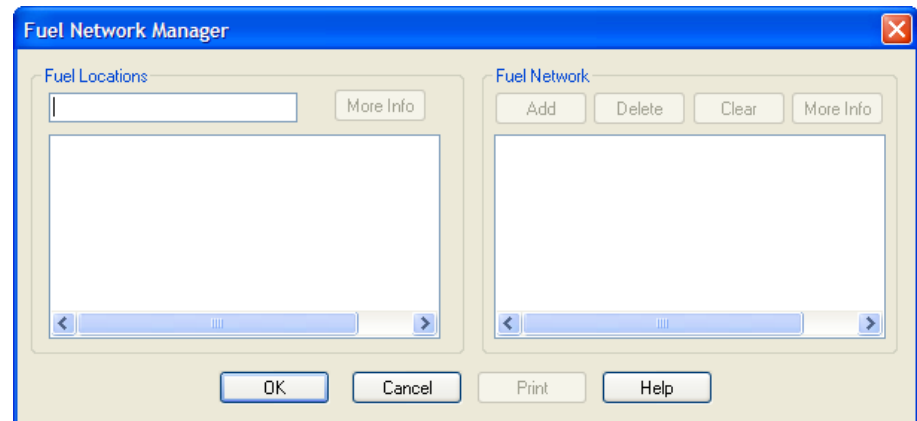


To create a custom Fuel Network:

1. On the **Features** menu, click **Fuel Network Manager**.

IntelliRoute displays the Fuel Network Manager dialog box:

**Figure 9-16:** Fuel Network Manager dialog box



2. In the **Fuel Locations** box, enter the fuel location in the same way you would for a location in an inquiry.
3. Click **Add** or press ENTER. The location will appear in the list on the right.
4. To add another location, type it over the highlighted text in the **Fuel Locations** box; the new entry will automatically replace the highlighted one. Continue to enter locations to your Fuel Network as required.
5. When you have finished entering Fuel Network locations do any of the following:
  - Click **Print** to print a list of your Fuel Network locations.
  - Click **OK** to save any changes and exit the dialog box.

---

**Note:** To display fuel stops from your Fuel Network, you have to set the option to display fuel stops in the Route/Mileage Processing Options dialog box. See Chapter 5 for more information.

---

---

## Using the Fuel Finder

You can display, save, and print a list of fuel locations available along a calculated route. The fuel locations displayed depend on how you set the display options and the fuel filter options.

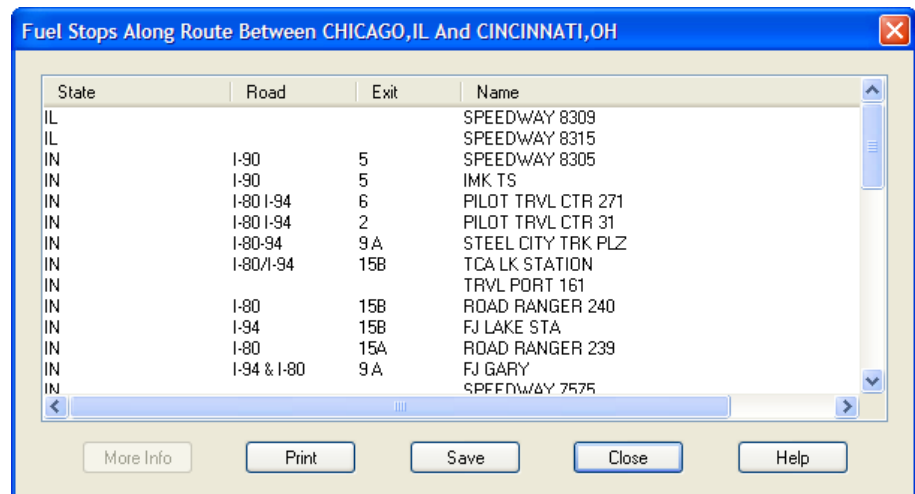


To display the Fuel Finder:

1. Set the display options and fuel filter options as desired. For more information see Chapter 5.
2. Calculate a route.
3. On the **Features** menu, click **Fuel Finder**.

IntelliRoute displays the fuel stops along the route:

**Figure 9-17:** Fuel Finder dialog box displaying fuel stops along a calculated route.



4. Do one of the following:
  - To print the list, click **Print**.
  - To save the list to a text file, click **Save**.
  - To close the Fuel Finder dialog box, click **Close**.

- To display detailed information about a particular fuel stop, select the stop, and then click **More Info**. IntelliRoute displays the Truck Stop Information dialog box:

**Figure 9-18:** The Truck Stop Information dialog box.

View various information about the truck stop by clicking the **General**, **Vehicle Services**, **Payment Services**, or **Driver Services** tabs. When you're finished, click **OK** to close the dialog box.

---

## Smart City Browse

The **Smart City Browse** command on the **Features** menu is used to turn the Smart City Browse option on or off.

When Smart City Browse is turned on, and you enter a location for a inquiry, Smart City Browse produces a city list for you to choose from in the **Browse/Selection List** list box, as soon as you have entered the first three characters of the location followed by a comma. Smart City Browse revises the list to produce a better match as you enter additional characters before the comma.

When Smart City Browse is turned off, you must enter a location, a comma, and a state or province name abbreviation before a city selection list appears. You may wish to turn Smart City Browse off if you know the exact locations you wish to enter.

The Smart City Browse option is turned on by default.



To turn Smart City Browse on or off:

- On the **Features** menu, click **Smart City Browse**.

A check mark appears next to the Smart City Browse menu option when the feature is turned on.

---

## Toll Cost Feature

The toll cost feature allows you to obtain toll cost breakdown results after calculating a Quickest or Lowest-Cost route. Actual toll costs are available for the United States, Canada, Canadian Borders, Mexican Borders, and commonly used Alaskan ferries. Calculations for toll cost are based on a single 5-axle 80,000-pound tractor-trailer making daytime payment with cash. You can now choose when to update the IntelliRoute toll costs with the most recent values. Cost changes include existing toll roads, new toll roads, and deleted toll roads in the IntelliRoute database. Actual toll costs for ticket systems are now displayed instead of the average toll costs displayed in the past. In addition, barrier toll costs at interchanges are now included.

You can specify an IntelliRoute exchange rate to convert Canadian dollars into US dollars. The conversion result appears in the toll cost breakdown after calculating a Quickest or Lowest-Cost route. For more information, see

### Setting the Toll Cost Exchange Rate.

The Updates via Internet feature allows you to download toll cost and other updates from the Internet.

The toll cost feature provides the following functionality:

- You can download quarterly toll updates from the Internet
- You can define the exchange rate for toll costs
- Toll cost breakdown displays in both screen and print formats
- Toll cost breakdown formulas are available in the Excel Add-In
- API functions are available for the toll cost features

---

## Weigh Station Feature

The weigh station feature allows you to display and search for weigh stations in the United States and Canada. You have the option of displaying weigh stations for the Quickest and Lowest-Cost routes on both the route itinerary and map.

You also have the option to search for weigh stations around a location, location along a route, and a route. For more information, see [Using Area Searches](#).

IntelliRoute displays the highway name, weigh station name, and state in the itinerary weigh station entry in the color teal. The following two icons are used to represent weigh stations on the route map, with the red box indicating the weigh station is selected:



Note:

---

The weigh station icons only appear on zoom level 4 and higher.

---

For more information, see [Displaying Weigh Stations](#).

---

## Rest Area Feature

The rest area feature allows you to display rest area icons on the Quickest and Lowest-Cost route maps of a calculated route. You can filter the display of rest area icons for rest rooms and overnight truck parking. The rest area information does not display on the route itinerary. IntelliRoute displays rest areas with the following icon on the route map:



Note:

---

The rest area icons only appear on zoom level 4 and higher.

---

For more information, see [Displaying Rest Areas](#).

---

## IntelliRoute® Fuel Feature

---

The IntelliRoute® Fuel feature is a separately purchasable option.

---

The IntelliRoute® Fuel feature allows you to obtain fuel-optimized trip planning via the IntelliRoute® Fuel online service. The IntelliRoute® Fuel feature allows you to enter specific information regarding a route (origin and destination), truck identity, fuel level, fuel capacity, fuel efficiency, and many other optional parameters. Once this information is provided, the IntelliRoute® Fuel online service returns a **Trip Plan**, a **Fuel Plan**, fuel optimization **Statistics**, and **State Miles** breakdown detailing your fuel-optimized trip.

The IntelliRoute® Fuel feature provides the following functionality:

- Secure login for the IntelliRoute® Fuel online service.
- Entry for route origin and destination specification including state, postal code, and optional latitude and longitude.
- Entry for fuel optimization parameters including capacity, level, miles/gallon, balance thresholds and minimum purchase requirements.
- Entry for fuel parameters including route type, solution type, hazardous materials, and trailer size.
- Entry for reporting parameters including vehicle identification, load, board ID, driver A, driver B and manager.
- Print report capability for all specified input parameters.
- Trip Plan results detailing the route with directions and mileages.
- Fuel Plan results detailing the fuel stops along the route.
- Statistics results detailing fuel optimization.
- State Miles results detailing state mileage breakdown (SMB).
- Print report capability for all results.

---

Note: You must have a valid account with [www.FuelAdvice.com](http://www.FuelAdvice.com) before you can use the IntelliRoute® Fuel online service. To register for this service, click the [www.IntelliRouteFuel.com](http://www.IntelliRouteFuel.com) link at the bottom of the IntelliRoute® Fuel login screen.

---



To request IntelliRoute® Fuel online services:

- From the **Features** menu, select **IntelliRoute® Fuel**.

For more information, see “Fuel Request” and “Fuel Report” below.

## Fuel Request

The IntelliRoute® Fuel feature allows you to obtain fuel-optimized trip planning via the IntelliRoute® Fuel online service.

You must have a valid account with [www.FuelAdvice.com](http://www.FuelAdvice.com) before you can use the IntelliRoute® Fuel online service, and you must be connected to the Internet.



To login to the IntelliRoute® Fuel online service with an existing account:

**Figure 9-19:** The IntelliRoute® Fuel Login dialog box.

IntelliRoute® Fuel provides routing with suggested fuel purchase plans to take advantage of lowest cost fuel stops in a defined route.

Please enter your User ID and Password below.

User ID

Password

intelliroute® FUEL

This User ID and Password is active for this session only.

- OR -

If you would like to register for this service, please click on 'Register Now' below and follow the registration instructions.

[Register Now](#)

OK Cancel

1. In the **User ID** text box, type your [www.FuelAdvice.com](http://www.FuelAdvice.com) User ID, then press the **TAB** key.
2. In the **Password** text box, type your [www.FuelAdvice.com](http://www.FuelAdvice.com) Password, then click **OK**.

A **STATUS: Validating User ID and Password** message is immediately displayed below the Password text box.

---

Note: If you receive a **login failed REASON: no response from Server** message, check to make sure your Internet access is working, then repeat this procedure.

---

3. When your **User ID** and **Password** are validated, the **IntelliRoute® Fuel** dialog for entry will display.



To register for the IntelliRoute® Fuel online service:

- Click the [www.IntelliRouteFuel.com](http://www.IntelliRouteFuel.com) link at the bottom of the **IntelliRoute® Fuel** dialog for login, then follow the registration instructions.

**Figure 9-20:** The IntelliRoute® Fuel Request dialog box.



To enter an IntelliRoute® Fuel request:

**Note:** All fields labeled in **red** in the IntelliRoute® Fuel dialog for entry are required fields.

If **Latitude** and **Longitude** entries are supplied in either the **Origin** or **Destination** areas, the **Latitude** and **Longitude** values will take precedence over the **State** and **Postal Code** values in those areas.

1. In the **Origin** group box, select your origin state in the **State** list box.
2. In the **Origin** group box, select the **Postal Code** text box, and type the postal code for your origin.
3. Optionally, in the **Origin** group box, select the **Latitude** text box, and type the latitude in degrees for your origin.
4. Optionally, in the **Origin** group box, select the **Longitude** text box, and type the longitude in degrees for your origin.
5. In the **Destination** group box, select your destination state in the **State** list box.
6. In the **Destination** group box, select the **Postal Code** text box, and type the postal code for your destination.
7. Optionally, in the **Destination** group box, select the **Latitude** text box, and type the latitude in degrees for your destination.
8. Optionally, in the **Destination** group box, select the **Longitude** text box, and type the longitude in degrees for your destination.

9. In the **Fuel Optimization (gals)** group box, select the **Capacity** text box, and type the fuel capacity for your vehicle.
10. In the **Fuel Optimization (gals)** group box, select the **Level** text box, and type the current fuel level for your vehicle.
11. In the **Fuel Optimization (gals)** group box, select the **Miles/Gallon** text box, and type the current miles/gallon rating for your vehicle.
12. Optionally, in the **Fuel Optimization (gals)** group box, select the **Min Balance** text box, and type the minimum fuel balance for your vehicle.
13. Optionally, in the **Fuel Optimization (gals)** group box, select the **End Balance** text box, and type the ending fuel balance for your vehicle.
14. Optionally, in the **Fuel Optimization (gals)** group box, select the **Min Purchase** text box, and type the minimum fuel purchase for your vehicle.
15. In the **Fuel Parameters** group box, select the route type in the **Route Type** list box.
16. In the **Fuel Parameters** group box, select the solution type in the **Solution Type** list box.

Note:

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The **Optimal** solution produces an optimized fueling solution, more commonly referred to as 'Fuel Optimization'. This solution displays the absolute best way to fuel along the route provided. Information about fuel locations and how much fuel to buy at each location is provided.

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The **All Stops** solution lists all available stops along the route.

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The **Lowest-Cost** solution produces the lowest-cost fuel locations for every 200 mile route segment, along with the recommended gallon purchase at each of those locations.

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17. Optionally, in the **Fuel Parameters** group box, select the hazardous materials type in the **Hazardous Materials** list box.
18. Optionally, in the **Fuel Parameters** group box, select the trailer size in the **Trailer Size** list box.
19. In the **Reporting** group box, select the **Vehicle** text box, and type the name used for your vehicle.
20. Optionally, in the **Reporting** group box, select the **Load** text box, and type the load value.
21. Optionally, in the **Reporting** group box, select the **Board ID** text box, and type the board ID value.
22. Optionally, in the **Reporting** group box, select the **Driver A** text box, and type the Driver A value.
23. Optionally, in the **Reporting** group box, select the **Driver B** text box, and type the Driver B value.

24. Optionally, in the **Reporting** group box, select the **Manager** text box, and type the Manager value.

25. Click **OK**.

After a few moments, the IntelliRoute® Fuel dialog for report will display. For more information, see Fuel Report.

➔ To print the IntelliRoute® Fuel for entry report:

- Click **Print**.

➔ To clear all fields in the IntelliRoute® Fuel dialog for entry:

- Click **Clear**.

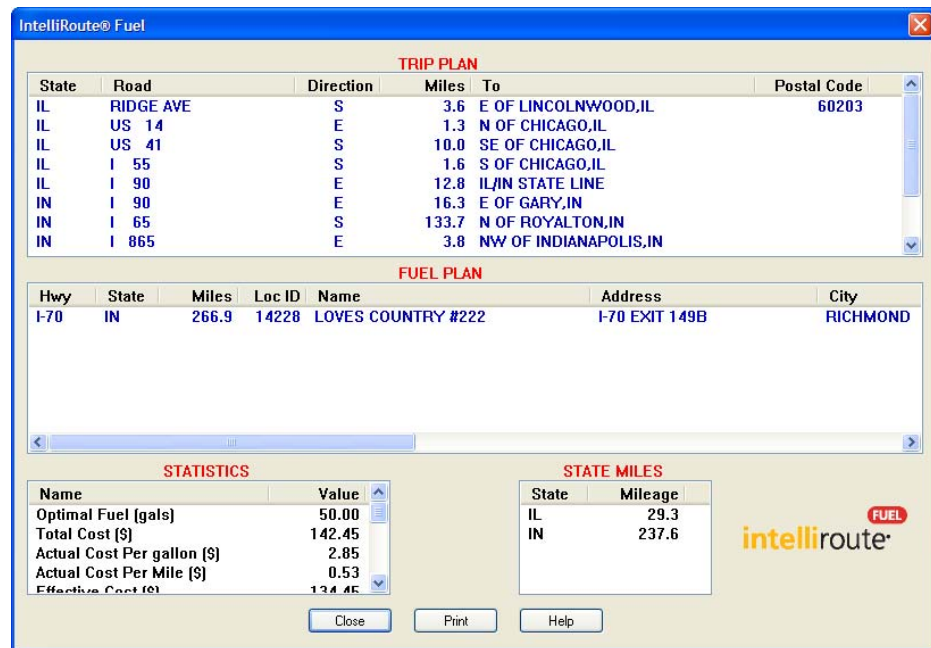
➔ To close the IntelliRoute® Fuel dialog for entry:

- Click **Close**.

## Fuel Report

The IntelliRoute® Fuel online service returns the following four major areas of information, all contained in a single dialog:

**Figure 9-21:** The IntelliRoute® Fuel Report dialog box.



1. The **Trip Plan** detailing the route with directions and mileages. Each line in the **Trip Plan** contains the following information:

- **State** – the state code traversed by this highway.
- **Road** – the highway name.
- **Direction** – the direction of travel on this highway.

- **Miles** – miles driven on this highway
  - **To** – the interchange name at the end of this highway.
  - **Return Point** – the origin and destination postal code.
2. The **Fuel Plan** detailing the fuel stops along the route. Each line in the **Fuel Plan** contains the following information:
- **Hwy** – the highway location for this fuel stop.
  - **State** – the state code for this fuel stop.
  - **Miles** – the accumulated miles to this fuel stop.
  - **Loc ID** – the location ID for this fuel stop.
  - **Name** – the name of this fuel stop.
  - **Address** – the address of this fuel stop.
  - **City** – the city name for this fuel stop.
  - **Phone** – the phone number for this fuel stop.
  - **Fuel Purchase** – the number of gallons to purchase from this fuel stop.
  - **Retail** – the retail price per gallon for gas at this fuel stop.
  - **CPG** – the cost per gallon for gas at this fuel stop.
  - **Cost** – the total cost for gas at this fuel stop.
  - **Effective CPG** – the effective cost per gallon for gas at this fuel stop.
  - **Effective Cost** – the effective total cost for gas at this fuel stop.
  - **Rem Fuel** – the remaining fuel in gallons.
  - **Fill** – the indication whether this fuel stop is a fill.
  - **LocType** – the location type for this fuel stop.
  - **Exit** – the exit name for this fuel stop.
3. **Statistics** detailing fuel optimization. The **Statistics** area contains the following information:
- **Optimal Fuel** – the optimal fuel for this trip.
  - **Total Cost** – the total cost for this trip.
  - **Actual Cost Per Gallon** – the actual cost per gallon for this trip.
  - **Actual Cost Per Mile** – the actual cost per mile for this trip.
  - **Effective Cost** – the total effective cost for this trip.
  - **Effective Cost Per gallon** – the effective cost per gallon for this trip.

- **Effective Cost Per Mile** – the effective cost per mile for this trip.
  - **Savings** – the total savings for this trip.
  - **Savings Per gallon** – the savings per gallon for this trip.
  - **Savings Per Mile** – the savings per mile for this trip.
  - **Route Average** – the route average for this trip.
  - **Route Maximum** – the route maximum for this trip.
  - **Route Minimum** – the route minimum or this trip.
  - **Optimal Fuel** – the optimal fuel for this trip.
4. **State Miles** detailing state mileage breakdown (SMB). The **State Miles** area contains the following information:
- **State** – the state code for each state traveled in for this trip.
  - **Mileage** – the total mileage driven in each state for this trip.

➡ To print the IntelliRoute® Fuel report:

- Click **Print**.

➡ To return to IntelliRoute® Fuel dialog for entry:

- Click **Close**.

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## IntelliRoute® Lane Rates Feature

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The IntelliRoute® Lane Rates feature is a separately purchasable option.

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The IntelliRoute® Lane Rates feature allows you to obtain current market rate index information for a specific lane via the IntelliRoute® Lanes Rates online service. The IntelliRoute® Lane Rates feature allows you to enter specific information regarding a route (origin and destination), and equipment type. Once this information is provided, the IntelliRoute® Lane Rates online service returns **Truckload Rate Info** detailing the current market rate index for a specific lane.

The IntelliRoute® Lane Rates feature provides the following functionality:

- Secure login for the IntelliRoute® Lane Rates online service.
- Entry for route origin and destination specification including city, state, and optional postal code.
- Entry for equipment type such as flatbed, reefer, van, etc.

- Truckload Rate Info results detailing the current market rate index for a specific lane.
- Print report capability for all specified input parameters and results.
- The ability to create a batch file containing multiple IntelliRoute® Lane Rates inquiries for later processing.

Note: You must have a valid account with [www.TruckLoadRate.com](http://www.TruckLoadRate.com) before you can use the IntelliRoute® Lane Rates online service. To register for this service, click the [www.IntelliRouteLaneRates.com](http://www.IntelliRouteLaneRates.com) link at the bottom of the IntelliRoute® Lane Rates login screen.

- ➔ To request IntelliRoute® Lane Rates online services:
  - From the **Features** menu, select **IntelliRoute® Lane Rates**.
 For more information, see “Process Lane Rates” and “Create Batch File” below.

## Process Lane Rates

The **Process Lane Rates** command displays the IntelliRoute® Lane Rates dialog box where you can get current market rate index information for a specific lane via the IntelliRoute® Lane Rates online service.

You must have a valid account with [www.TruckLoadRate.com](http://www.TruckLoadRate.com) before you can use the IntelliRoute® Lane Rates online service, and you must be connected to the Internet.

- ➔ To Process Lane Rates:
  - From the **Features** menu, select **IntelliRoute® Lane Rates:Process Lane Rates**.
- ➔ To login to the IntelliRoute® Lane Rates online service with an existing account:

**Figure 9-22:** The IntelliRoute® Lane Rates Login dialog box.

1. In the **User ID** text box, type your [www.TruckLoadRate.com](http://www.TruckLoadRate.com) User ID, then press the **TAB** key.
2. In the **Password** text box, type your [www.TruckLoadRate.com](http://www.TruckLoadRate.com) Password, then click **OK**.

A **STATUS: Validating User ID and Password** message is immediately displayed below the Password text box.

**Note:** If you receive a **login failed REASON: no response from Server** message, check to make sure your Internet access is working, then repeat this procedure.

3. When your **User ID** and **Password** are validated, the **IntelliRoute® Lane Rates** dialog for entry/report will display.



To register for the IntelliRoute® Lane Rates online service:

- Click the [www.IntelliRouteLaneRates.com](http://www.IntelliRouteLaneRates.com) link at the bottom of the **IntelliRoute® Lane Rates** dialog for login, then follow the registration instructions.



To enter an IntelliRoute® Lane Rates request:

**Figure 9-23:** The IntelliRoute® Lane Rates Request dialog box.

**Note:** All fields labeled in **red** in the IntelliRoute® Lane Rates dialog for entry/report are required fields.

1. In the **Origin** group box, select the **City** text box, and type the name of your origin city.
2. In the **Origin** group box, select your origin state in the **State** list box.
3. Optionally, in the **Origin** group box, select the **Postal Code** text box, and type the postal code for your origin.

4. In the **Destination** group box, select the **City** text box, and type the name of your destination city.
5. In the **Destination** group box, select your destination state in the **State** list box.
6. Optionally, in the **Destination** group box, select the **Postal Code** text box, and type the postal code for your destination.
7. In the **Equipment Type** list box, select your equipment type.
8. Click **Get Rate**.

After a few moments, the IntelliRoute® Lane Rates dialog for entry/report will refresh and the Truckload Rate Info group box populated with the current market rate index information for the specific lane you requested.

**Figure 9-24:** The IntelliRoute® Lane Rates Report dialog box.

**IntelliRoute® Lane Rates**

Origin  
 City: Evanston State: Illinois Postal Code: 60203

Destination  
 City: Richmond State: Indiana Postal Code: 47374

Equipment Type: Flatbed

| Truckload Rate Info          |         |
|------------------------------|---------|
| Average Rate/Mile            | \$ 2.53 |
| Minimum Rate/Mile            | \$ 2.27 |
| Maximum Rate/Mile            | \$ 2.82 |
| Spread (Max - Min Rate/Mile) | \$ 0.55 |
| Fuel Surcharge               | \$ 0.33 |

Buttons: Get Rate, Close, Clear, Print, Help

Note: Fields in red are required

The IntelliRoute® Lane Rates online service returns the following current market rate index information:

- **Average Rate/Mile** – the average rate/mile cost.
  - **Minimum Rate/Mile** – the minimum rate/mile cost.
  - **Maximum Rate/Mile** – the maximum rate/mile cost.
  - **Spread (Max – Min Rate/Mile)** – the spread cost, which is calculated as:  
 $\text{Spread} = \text{Maximum Rate/Mile} - \text{Minimum Rate/Mile}$
  - **Fuel Surcharge** – the fuel surcharge cost.
- ➔ To print the IntelliRoute® Lane Rates report:
- Click **Print**.
- ➔ To clear all fields in the IntelliRoute® Lane Rates dialog for entry/report:
- Click **Clear**.

- ➔ To close the IntelliRoute® Lane Rates dialog for entry/report:
  - Click **Close**.

## Create Batch File

The **Create Batch File** command displays the Create Lane Rates File dialog box, where you can create a file containing multiple IntelliRoute® Lane Rates inquiries for later processing. When you are ready to process these batched inquiries, you must send an email, with this file as an attachment, to [autofile@truckloadrate.com](mailto:autofile@truckloadrate.com) for processing. Your results are emailed to the **Response Email Address** you provided in the Create Lane Rates File dialog.

You must have a valid account with [www.TruckLoadRate.com](http://www.TruckLoadRate.com) before you can use the IntelliRoute® Lane Rates online service, and you must be connected to the Internet.

- ➔ To create a new Lane Rates batch file:
  1. From the **Features** menu, select **IntelliRoute® Lane Rates:Create Batch File**.
  2. Click **New**.
  3. Enter the name and select the location for the file, then click **Open**.
  4. You will be requested to supply the **User ID** and **Password** for your IntelliRoute® Lane Rates online service account. For more information, see “To login to the IntelliRoute® Lane Rates online service with an existing account” in the section “Process Lane Rates” above.
  5. In the **Equipment Type** box, select the desired type from the list.
  6. In the **Response Email Address**, type the email address where the batch file processing results are to be returned.

---

Note: The **Equipment Type** and **Response Email Address** fields cannot be changed with this dialog once a record is added to the file.

---

7. In the **Origin** box, type the origin location.
  - Enter a city name and a state or province, with no space after the comma.  
Example: **DAYTONA BEACH,FL** or **DAYTONA BEACH,FLORIDA**  
*or*
  - Enter a 5-digit U.S. ZIP Code.  
Example: **60203**
8. In the **Destination** box, type the destination location (Same format as **Origin** above).
9. Click **Add** to save the record to the file.

10. Repeat steps 4 through 6 for each additional record you want to add. When finished, continue with the next step.

11. Click **Done** to save the file to disk and close the dialog.



To open an existing Lane Rates batch file:

1. Click **Open**.
2. Locate and select the desired file, then click **Open**.

For information about adding records, see option below.



To save the Lane Rates batch file with a new name:

1. Click **Save As**.
2. Enter the new name and select the location for the file, then click **Save**.



To view the Lane Rates batch records:

1. Click **View**. The Batch Lane Rates Records dialog appears.
2. Click **Close**.



To delete record(s) in the Lane Rates batch file:

1. Click **View**. The Batch Lane Rates Records dialog appears.
2. In the records box, select the record(s) you want to delete. When you select multiple records, each must be selected individually. To deselect a record, select it again.
3. Click **Delete**. A delete warning message appears.
4. Do one of the following:
  - Click **OK** to delete the selected records.
  - or*
  - Click **Cancel** to return to the dialog.
5. Click **Close**.



To delete the Lane Rates batch file:

1. Click **Delete**. A delete warning message appears.
2. Do one of the following:
  - Click **Yes** to delete the file.
  - or*
  - Click **No** to return to the dialog.



To save the Lane Rates batch file in progress:

Click **Save**.

- ➔ To save the Lane Rates batch file and close the dialog:  
Click **Done**.
- ➔ To exit without saving your Lane Rates batch file changes:
  1. Click **Cancel**.
  2. If a cancel warning message appears, then do one of the following:
    - Click **Yes** to exit without saving your changes.  
*or*
    - Click **No** to return to the dialog.
- ➔ To add records to the Lane Rates batch file:
  1. In the **Origin** box, type the origin location.
    - Enter a city name and a state or province, with no space after the comma.  
Example: **DAYTONA BEACH,FL** or **DAYTONA BEACH,FLORIDA**  
*or*
    - Enter a 5-digit U.S. ZIP Code.  
Example: **60203**
  2. In the **Destination** box, type the destination location (Same format as **Origin** above).
  3. Click **Add** to save the record to the file.
  4. Repeat steps 1 through 3 for each additional record you want to add.
  5. Click **Save As**, **Save**, or **Done** as desired. For additional information about each of these options, see the appropriate description above.

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## IntelliRoute® Streets Feature

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The IntelliRoute® Streets feature is a separately purchasable option.

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The IntelliRoute® Streets feature allows you to obtain street-level routing and mapping for the Quickest and Lowest-Cost Route Inquiries. The Quickest and Lowest-Cost Route Inquiry screens allow the entry of street addresses for origins and destinations only. All other points in between (via points) must be the standard IntelliRoute® point locations, sometimes referred to as general location entries.

The IntelliRoute® Streets feature provides the following functionality for the Quickest and Lowest-Cost Routes:

- Street address inputs for origin and destination locations.
- Street-level directions without Truck-Type attributes.

- Street-level directions in the itinerary for the origin and destination locations.
- Street-level distance included in mileage breakdown.
- Street-level maps for the origin and destination locations.
- Street-level map route highlighting.
- Street-level map address labeling for origin and destination locations.
- Street-level map panning in the eight major compass directions.
- Street-level map zooming in and out.

For more information, see “Entering a Street Address Location” and “Street-Level Map”.

## Street-Level Map

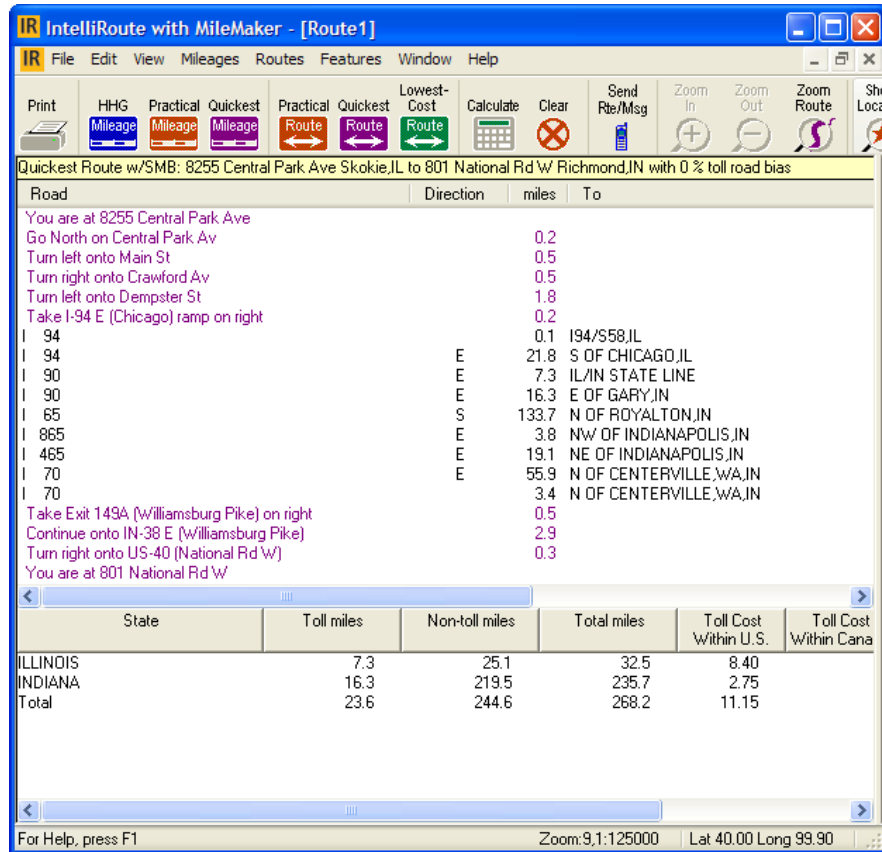
After clicking the **Calculate** button for a Quickest Route Inquiry or a Lowest-Cost Inquiry, an itinerary is displayed with steps for the route highlighted in different colors. The street-level directions appear as violet-shaded instructions. The street-level map appears in a separate window to the left of the itinerary when you click a violet-shaded street-level step of the itinerary.

---

Note: You can also display a street-level map, once a street-level itinerary is displayed, by selecting either the **View:Map/Itinerary:Origin Street Map** or **View:Map/Itinerary:Destination Street Map** option in the **View** menu.

---

**Figure 9-25:** Street-level itinerary.

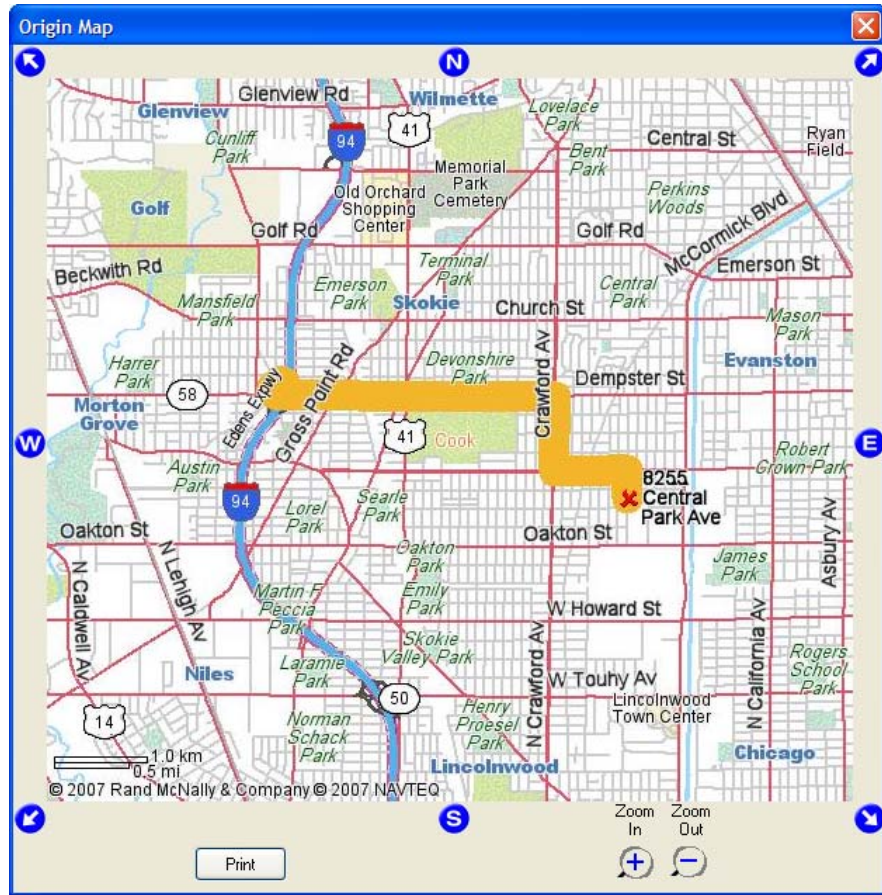


To display a street-level map from a street-level itinerary:

- Click any one of the violet-shaded street-level steps.

If the step applies to the origin portion of the route, the origin street-level map appears. Similarly, if the step applies to the destination portion of the route, the destination street-level map appears. Only one map can appear at a time.

**Figure 9-26:** Street-level map.



- ➡ To pan (move) a street-level map:
  - Click on any of the eight compass direction buttons on the perimeter of the street-level map.
- ➡ To zoom (scale) a street-level map:
  - Click on the **Zoom In** and **Zoom Out** buttons to increase or decrease the scaled display of the map.

Note: If the **Zoom In** button is grayed out (not selectable), the highest level of detail is currently displayed. If the **Zoom Out** button is grayed out (not selectable), the highest level of coverage is currently displayed.

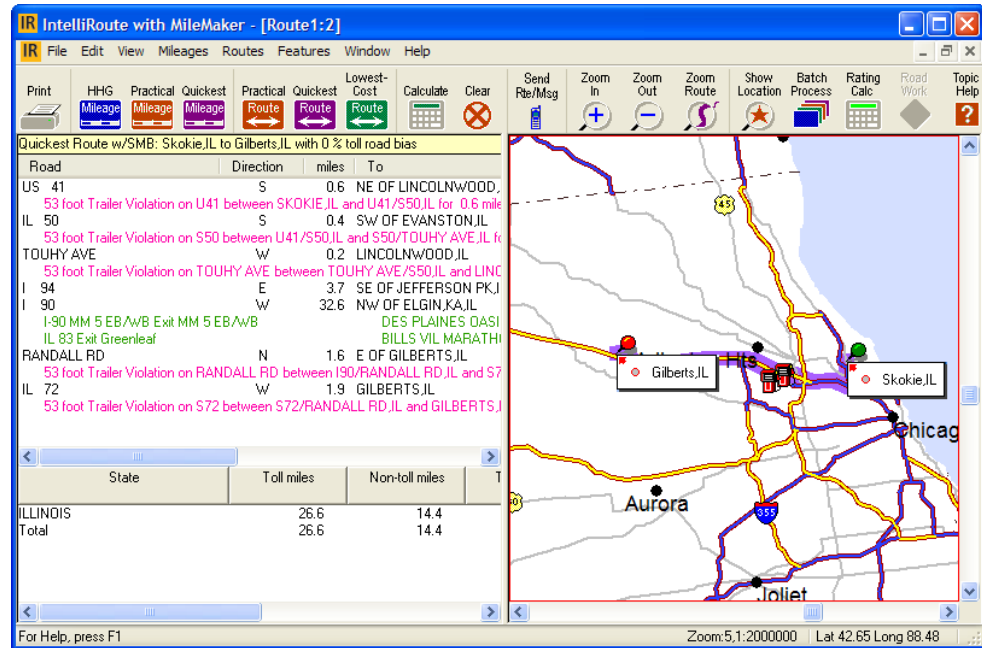
- ➡ To print the street-level map:
  - Click **Print**.

---

# Truck-Type Violation Indicators

Truck-Type Violation Indicators are displayed in the itinerary for a route when settings for trailer lengths of 53', truck widths of 102", and double or triple trailer options are in violation. Each segment of the route in the itinerary that has a violation is highlighted in red, and details regarding the violation and route segment specifics, including distance, are displayed.

**Figure 9-27:** Viewing Truck-Type Violation Indicators in the itinerary.



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# Update via Internet

The Update via Internet feature provides a means of downloading toll costs and other updates from the Internet, and a means of viewing the download history log.

## Download Updates

The Download Updates feature provides a means of downloading toll costs and other updates from the Internet. When the **Update via Internet:Download Updates** feature is selected you will either receive a message box indicating that all files are presently up to date or a dialog box listing available updates.



If all files are presently up to date:

1. After clicking **Update via Internet:Download Updates** the “**All files are presently up to date**” message box appears.

2. To exit, click **OK**.



If updates are available:

1. After clicking **Update via Internet:Download Updates** the **IntelliRoute with MileMaker Updates** dialog box appears.
2. Click the check boxes for the updates you wish to download.
3. Click **Download Updates** to begin the download. The dialog displays the progress bar to indicate how much data has downloaded. When the download completes the “**Download from Internet completed. Please close and restart the Application to complete the Update process.**” message appears.
4. To exit, click **OK**.

Note:

---

Clicking **OK** returns you to the IntelliRoute application. You can continue to work without the updates applied. To apply the updates follow the procedure below.

---



To apply the updates:

1. If IntelliRoute is still running, then shutdown IntelliRoute. On the **File** menu, click **Exit**.
2. Restart IntelliRoute. Click the IntelliRoute desktop icon. The **IntelliRoute with MileMaker Update** dialog will appear.
3. Do one of the following:
  - Click **OK** to start the update process. Once the update process is complete, IntelliRoute will restart.

*or*

  - Click **Cancel** to start IntelliRoute without applying the updates.

Note:

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The **IntelliRoute with MileMaker Update** dialog will continue to appear upon restart until the updates are applied.

The update installation process will closely resemble the original IntelliRoute installation.

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## View Download History

The View Download History feature provides a means of viewing the download history log. When the **Update via Internet:View Download History** feature is selected the download history log containing the update file name, version, size, download date, and upload date is displayed.



To view the download history log:

1. Click **Update via Internet:View Download History**. The **IntelliRoute with MileMaker Update History** dialog box appears.

2. To exit, click **Close**.

---

## Microsoft Excel Add-In

The Microsoft Excel Add-In provides IntelliRoute mileage and State Mileage Breakdown (SMB) type routing calculations within a Microsoft Excel worksheet. SMB shows the distance traveled in each state along the specified route. HHG mileages, Practical mileages, Quickest mileages, and Lowest-Cost mileages are all supported, and may be calculated with or without SMB type routing information. In addition, data conversion functionality is also providing for converting an SPLC or ZIP Code to a corresponding location name, for converting ZIP Codes to a corresponding city name or SPLC code, and for converting a city name to a corresponding ZIP Code.

For mileage calculation only formulas, data and formula specifications are entered into the Excel worksheet, and IntelliRoute will return the calculated mileage. For mileage with SMB type routing calculation formulas, data and formula specifications are entered into the Excel worksheet, and IntelliRoute will return the calculated mileage, as well as, a table of SMB type routing calculations, displaying the distance traveled in each state along the route.

Two macros are also provided to facilitate the saving of a Microsoft Excel workbook containing IntelliRoute mileage information to disk, and transferring the workbook for use to another PC that has Microsoft Excel installed but not IntelliRoute.

## Microsoft Excel Location Entry

➡ To enter location data in a cell:

1. Click the cell where you want to enter the location.
2. Type the location.
3. Press ENTER.

Example: Contents of cell A1: **Skokie,IL**

For mileage calculation formulas, there are two basic location specification formats:

- The origin and destination locations are specified in two separate cells in the Microsoft Excel worksheet.

Example:

The value in cell A1 contains the origin location.

The value in cell A2 contains the destination location.

The formula in cell B1 is the two-cell location formula for calculating HHG mileage.

**Figure 9-28:** Two cell location format.

|   | A             | B           | C | D |
|---|---------------|-------------|---|---|
| 1 | Skokie,IL     | =HHG(A1,A2) |   |   |
| 2 | Richardson,TX |             |   |   |
| 3 |               |             |   |   |
| 4 |               |             |   |   |

- The origin and destination locations are specified in four separate cells in the Microsoft Excel worksheet.

Example:

The value in cell A1 contains the origin location city name.  
 The value in cell A2 contains the origin location state code.  
 The value in cell A3 contains the destination location city name.  
 The value in cell A4 contains the destination location state code.  
 The formula in cell B1 is the four-cell location formula for calculating HHG mileage.

**Figure 9-29:** Four cell location format.

|   | A          | B                  | C | D |
|---|------------|--------------------|---|---|
| 1 | Skokie     | =HHG2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                    |   |   |
| 3 | Richardson |                    |   |   |
| 4 | TX         |                    |   |   |
| 5 |            |                    |   |   |



For information on entering locations, see “Accepted Formats for Location Entry” above.

## Microsoft Excel Formula Entry

Outlined below is the general procedure used to enter a formula in a Microsoft Excel worksheet. This example uses the MileMaker HHG mileage formula, but the procedure is basically the same for all mileage formulas.



To enter a formula in a cell:

1. Click the cell where you want to enter the formula.
2. Type = (an equal sign).  
 If you click the Edit Formula  or Paste Function  toolbar commands, Microsoft Excel inserts an equal sign for you.
3. Enter the formula.
4. Press ENTER.

Example:

The contents of cell B1: **=HHG(A1,A2)**

**Figure 9-30:** Formula entry.

|   | A             | B           | C | D |
|---|---------------|-------------|---|---|
| 1 | Skokie,IL     | =HHG(A1,A2) |   |   |
| 2 | Richardson,TX |             |   |   |
| 3 |               |             |   |   |
| 4 |               |             |   |   |

## Calculating Mileage in Microsoft Excel

Outlined below is the general procedure used to calculate mileage or mileage with State Mileage Breakdown (SMB) between any two location points that you enter into cells in a Microsoft Excel worksheet. This example calculates HHG mileage, but the procedure is basically the same for all mileage formulas.

**Warning:**

When calculating mileage with State Mileage Breakdown (SMB), sufficient space must be allowed for in the Microsoft Excel worksheet for the SMB table. The SMB table is returned directly below the cell containing the mileage formula, and is two cells wide and  $x$  rows long, where  $x$  is the number of states traveled through along the specified route. Any formulas or data that exist in cells where the SMB table is returned will be overwritten.



To calculate mileage in Microsoft Excel:

1. Create a new Microsoft Excel worksheet or open an existing one.
2. Type the locations in the cells of your choice.

Example:

- Type **Skokie,IL** in cell A1, and press ENTER.
  - Type **Richardson,TX** in cell A2, and press ENTER.
3. Type the mileage formula in a separate cell using the cell specifications you used in the previous step, namely A1 and A2.

Example:

- For HHG mileage only, type **=HHG(A1,A2)** in cell B1, and press ENTER.

Result:

The value in cell B1 contains the HHG mileage between **Skokie,IL** and **Richardson,TX**.

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 921 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

*or*

**Figure 9-31:** Calculating mileage only.

- For HHG mileage with SMB breakdown, type =HHGSMB(A1,A2) in cell B1, and press ENTER.

Result:

The value in cell B1 is the HHG mileage between **Skokie,IL** and **Richardson,TX**.

The values in cells B2-C2 through B5-C5 are the SMB breakdown.

**Figure 9-32:** Calculating mileage with SMB breakdown.

|   | A             | B   | C   | D |
|---|---------------|-----|-----|---|
| 1 | Skokie,IL     | 921 |     |   |
| 2 | Richardson,TX | IL  | 303 |   |
| 3 |               | MO  | 291 |   |
| 4 |               | OK  | 264 |   |
| 5 |               | TX  | 63  |   |
| 6 |               |     |     |   |

---

## MILES32.DLL

The MILES32.DLL is a library of all route calculation and processing functions contained in MileMaker SP32. These route calculation functions can be used by a 3rd party executable Windows application. Developers of that application are responsible for screen display and proper calls to the MILES32.DLL library of functions.

In order to test MILES32.DLL with TEST32.EXE or another C++ application, the application must either reside in the same directory as the MILES32.DLL and the IntelliRoute API or the PATH environment variable must be set to point to the IntelliRoute API directory.

In order to test MILES32.DLL with TEST32VB.EXE or another Visual Basic application, the PATH environment variable must be set to point to the IntelliRoute API directory.

All numeric data that is passed to the functions, needs to be passed as 4 byte binary data. For C++ this is an int or long field. For Visual Basic this is a long field.

All source code for the sample applications resides in the "Examples" subdirectory.

---

Note: The MILES32.DLL is only available in the Windows Stand-Alone version.

---

## Library Functions

### GetHHGDistance

Parameters - (Starting Location, Ending Location)

Calculates HHG Mileage between a specified Starting Location and Ending Location. Both Locations must exist inside the MileMaker database, otherwise an error is returned.

In this function, and other functions documented here, the word "Location" means user input in the form of:

1. SPLC
2. City/County/State
3. ZIP Code

All locations are 22-byte ASCII character strings declared in C as follows:

**char location[23];**

The 23rd byte is for the NULL character, which follows 22 bytes of location information as follows:

- City/County/State: City is 18 bytes, beginning with the 1st byte, County is 2 bytes starting with byte 19 (value optional); and State is 2 bytes, starting with byte 21.
- SPLC: SPLC is 9 characters, beginning with the first byte. The SPLC must then be appended by 13 spaces to create the 22-byte character string.
- ZIP Code: ZIP Code is 5 characters, beginning with the first byte. The ZIP Code must be appended by 17 spaces, in order to create 22-byte character string.

### GetPracDistance

Parameters - (Starting Location, Ending Location)

Calculates Practical Mileage between a specified Starting Location and Ending Location. Both Locations must exist inside the MileMaker database, otherwise an error is returned.

### GetHHGDistanceValid

Parameters - (Starting Location, Ending Location)

Calculates HHG Mileage between a user-selected Starting Location and Ending Location. A location is validated when the user selects it from the MileMaker database using the Validation screen.

## GetPracDistanceValid

Parameters - (Starting Location, Ending Location)

Calculates Practical Mileage between a user-selected Starting Location and Ending Location. A location is validated when the user selects it from the MileMaker database using the Validation screen.

## Route

Parameters - (String of Input Records, String of Output Records, Route Type, Validation Flag)

Route calculates one of following 9 Route Types for the locations entered:

1. HHG Mileage
2. HHG Origin
3. HHG Audit Route
4. HHG Route State Mileage Breakdown Only
5. HHG Full Route With State Mileage Breakdown
6. Practical Route
7. Practical Route State Mileage Breakdown Only
8. Practical Route with State Mileage Breakdown
9. Practical Mileage

**String of Input Records:** Input Records consist of strings containing up to 28 input locations that are processed according to the Route Type selected.

**String of Output Records:** Upon successful calculation, the String of Output Records representing Mileage, Route, or State Mileage (depending on Route Type) is returned.

---

Note: Each Output Record is 71 bytes long, see the documentation on batch processing for complete information.

---

### Validation Flag

- If Validation Flag is set to 1, then all locations are validated when the user selects a location using the Validation screen.
- If Validation Flag is set to 0, then it is assumed that all locations are valid and do not need to be validated.

## Validate

Parameters - (Location, Val Flag)

Takes **Location** and validates it against the MileMaker database using the Validate screen. The found location is returned inside Location. In some cases it is returned in the abbreviated form.

Example: Location MORTON GROVE, IL returns MORTON GRV, IL.

See the “IntelliRoute with MileMaker User Guide” for the list of abbreviations.

**Val Flag** must be 0 for HHG Validation, and 8 for Practical Validation.

## ValidateList

Parameters - (Location, Val Flag, LocationsList)

Takes **Location** and validates it against the MileMaker database. If a location cannot be found then a list of possible locations with closely matching names is returned inside **LocationsList**. It is assumed that the user will select a location by using a screen in the 3rd party application.

**Val Flag** must be 0 for HHG Validation, and 8 for Practical Validation.

## TransactionUpdate

Parameters (NONE)

Displays a transaction update screen that lets the user view the number of transactions and update them.

---

Note: If the LAN version of the MileMaker database has been installed, then only the user with the MMADMIN account is able to update transactions, other users can only view them.

---

## SetProgressDisplay

Parameters (Display Flag)

Determines whether a status screen is displayed during route calculation.

If **Display Flag** is set to 1 then a small screen that displays the percentage of the job done is displayed during all subsequent Route and Mileage Calculations.

If **Display Flag** is set to 0 (default) then the status screen is not displayed.

All numeric data that is passed to the functions, needs to be passed as 4 byte binary data. For C++ this is an int or long field. For Visual Basic this is a long field.

---

# MileMaker SP32 Batch Output Format

## The Answer File

The answer file contains eight types of 71-byte records: Header record, Mileage record, Practical Miles record, Via record, Route record, State Mileage Breakdown record, Error record, Last Answer record.

Record Sequence for an Answer file:

| <b>Record Name</b> | <b>Characters in Cols 1-2</b> | <b>Explanation</b>  |
|--------------------|-------------------------------|---|
| Header             | HR                            | This record contains the type of request. It can also contain user information which is transferred back to the host.   |
| Mileage            | MI                            | This record contains the origin and destination cities. It also contains the total toll, total non-toll, and total mileage between the origin and destination cities for certain request types. |
| Practical Miles    | PM                            | This record follows the MI record and is used for returning results from a PM or Practical Mileage Inquiry request.   |
| Via                | VI                            | This record contains the stop-off point and the mileage from the previous point to this stop-off point.   |
| Route              | DR                            | This record contains the detailed information on any given segment of a trip.   |
| State Mileage      | SM                            | This record contains the state codes total toll, total non-toll, and total in each state along the route.   |
| Error              | ER                            | This record contains an error code if the request cannot be completed.  |
| End of Answer      | LR                            | This record indicates the end of a set of answer records for a given request.   |

### Header Record

The Header record returns the type of request that was sent and the optional user-specified information.

#### Record Size: 71 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>           |
|--------------|-----------------------------|-----------------------|------------------------------|
| 1 - 2        | 2                           | HR                    | Always "HR" to indicate that |

|         |    |        |   |
|---------|----|--------|---|
|         |    |        | this is a Header record.  |
| 3 - 4   | 2  | MI     | Type of request. One of the following list: MI, MD, OP, HA, HS, HB, PR, PS, PM, or PB.  |
| 5       | 1  | M      | This field contains an indicator to distinguish between distance in miles or kilometers. If the indicator is "M" or the field is blank, the distance is returned in miles. If the indicator is "K", the distance is in kilometers. Note that kilometer requests are only valid for Practical Route options. |
| 6 - 22  | 17 | Info.  | User-supplied information.  |
| 23 - 71 | 49 | Spaces |   |

### Mileage Record

This record follows the Header record for all inquiry types and contains the origin and destination points and the total toll, total non-toll, and total mileage between specified points for inquiry types: HHG State Mileage Breakdown Only Inquiry (HS), Practical Route Only Inquiry (PR), Practical State Mileage Breakdown Only Inquiry (PS), and Practical Route with State Mileage Breakdown Inquiry (PB). The fields for total toll and total non-toll miles are zero for request types: HHG Mileage Inquiry (MI), Single Origin Multiple Destination Inquiry (MD), Optimization Inquiry (OP), and HHG Audit Route Inquiry (HA) and Practical Miles Only (PM). If SPLCs are used in the request, the answers are returned using SPLCs. If 5-digit ZIP Codes are used in the request, the answers are returned using 5-digit ZIP Codes.

### Record Size: 71 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | MI             | Always "MI" to indicate that this is a Mileage record.                                     |
| 3 - 20  | 18                   | CHICAGO        | Origin location name.  |
| 21 - 22 | 2                    |                | Origin county name (abbreviated) if needed.  |
| 23 - 24 | 2                    | IL             | Origin state name (abbreviated).   |
| 25 - 42 | 18                   | BARRINGTON     | Destination location.  |
| 43 - 44 | 2                    | CO             | Destination county name. Spaces if not needed.   |
| 45 - 46 | 2                    | IL             | Destination state name (abbreviated).  |
| 47 - 51 | 5                    | 37             | Total miles or kilometers between origin and destination points, right-justified in column |

|         |   |        |  |
|---------|---|--------|--|
|         |   |        | range.   |
| 52 - 58 | 7 | 9      | Total toll miles or kilometers between origin and destination points, right-justified in column range. |
| 59 - 65 | 7 | 28     | Total non-toll miles or kilometers between origin destination points, right-justified in column range. |
| 66 - 71 | 6 | Spaces |  |

Note: There are multiple records for a Single Origin Multiple Destination Inquiry (MD) request.

### Practical Mileage Record

This record follows the MI record and is used for returning results from a PM, or Practical Mileage Inquiry request.

#### Record Size: 71 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | DM             | Detail Mileage (DM) record used with a Practical Mileage request type.                               |
| 3 - 26  | 24                   | OAK PARK,IL    | Requested city (with county if necessary) and state.   |
| 27 - 31 | 5                    | 12             | Miles or kilometers between previous DM point and current DM point, right-justified in column range. |
| 32 - 37 | 6                    | 0:24           | Accumulated Time, right-justified in column range.   |
| 38 - 71 | 34                   | Spaces         |  |

### Via Record

The Via record contains the name of an intermediate stop-off point, as well as the mileage from the previous point (either the origin or the previous stop-off point) to this stop-off point.

#### Record Size: 71 bytes

| Cols.  | Number of Characters | Sample Content | Explanation  |
|--------|----------------------|----------------|--|
| 1 - 2  | 2                    | VI             | Always "VI" to indicate that this is a Via record. |
| 3 - 20 | 18                   | ROSEMONT       | Via city name.                                     |

|         |    |        |  |
|---------|----|--------|--|
| 21 - 22 | 2  | CO     | Via city's county name, if needed. If not, it is filled with spaces.     |
| 23 - 24 | 2  | IL     | Via state name (abbreviated).  |
| 25 - 31 | 7  | 9      | Miles from previous via or origin city, right-justified in column range. |
| 32 - 71 | 40 | Spaces |  |

## Route Record

The Route record contains the detailed route information for a single segment of a route.

### Record Size: 71 bytes

| Cols.   | Number of Characters | Sample Content       | Explanation  |
|---------|----------------------|----------------------|--|
| 1 - 2   | 2                    | DR                   | Always "DR" to indicate that this is a Detailed Route record.  |
| 3 - 19  | 17                   | I 90                 | This contains the highway segment's name.  |
| 20 - 21 | 2                    | W                    | Direction of travel on the highway segment.  |
| 22 - 27 | 6                    | 24                   | Miles or kilometers traveled on the highway segment, right-justified in column range.  |
| 28 - 54 | 27                   | S OF ROLLING MDWS,IL | End location on the highway segment.   |
| 55 - 60 | 6                    | 0:37                 | Total accumulated time to end highway segment from the origin city. in the format, HH:MM (where H represents hours and M represents minutes).This field contains spaces for all HHG inquiries. HHG inquiries are based strictly on mileage, right-justified in column range. |
| 61 - 65 | 5                    | 24                   | Total accumulated miles or kilometers to end of highway segment from the origin city, right-justified in column range.   |
| 66 - 71 | 6                    | TL                   | Highway notes such as HHG INDEX mileage, toll roads (TL), toll booths (TB), ferries (FY), via (VIA), etc.  |

Note: This type of answer record is returned for an HHG Audit Route Inquiry (HA), a Practical Route Only Inquiry (PR), and a Practical Route with State Mileage Breakdown Inquiry (PB).

## State Mileage Breakdown Record

This record contains state codes in alphabetical or route order and the total mileage for each state in the route.

### Record Size: 71 bytes

| Cols.   | Number of Characters | Sample Content | Explanation   |
|---------|----------------------|----------------|---|
| 1 - 2   | 2                    | SM             | Always "SM" to indicate that this is a State Mileage Breakdown record.                  |
| 3 - 4   | 2                    | IL             | First or next state alphabetically in the route.  |
| 5 - 9   | 5                    | 93             | Total miles or kilometers for the first or next state, right-justified in column range. |
| 10 - 16 | 7                    | 77             | Total toll miles or kilometers for this state, right-justified in column range.         |
| 17 - 23 | 7                    | 16             | Total non-toll miles or kilometers for this state, right-justified in column range.     |
| 24 - 25 | 2                    | MN             | Next state alphabetically in the route.   |
| 26 - 30 | 5                    | 156            | Total miles or kilometers for this state, right-justified in column range.              |
| 31 - 37 | 7                    | 0              | Total toll miles or kilometers for this state, right-justified in column range.         |
| 38 - 44 | 7                    | 156            | Total non-toll miles or kilometers for this state, right-justified in column range.     |
| 45 - 46 | 2                    | ON             | Next state alphabetically in the route.   |
| 47 - 51 | 5                    | 34             | Total miles or kilometers for this state, right-justified in column range.              |
| 52 - 58 | 7                    | 0              | Total toll miles or kilometers for this state, right-justified in column range.         |
| 59 - 65 | 7                    | 34             | Total non-toll miles or kilometers for this state, right-justified in column range.     |
| 66 - 71 | 6                    | Spaces         |   |

Note: This type of record is sent for an HHG State Mileage Breakdown Only Inquiry (HS), a Practical State Mileage Breakdown Only Inquiry (PS), and a Practical Route with State Mileage Breakdown Inquiry (PB). If the route travels through more than four states, the answer records contain as many State Mileage Breakdown records as necessary to show all mileage in all states.

## Error Record

The Error Record is sent when an error occurs for the current inquiry.

### Record Size: 71 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | ER                    | Always "ER" to indicate that this is an Error record.   |
| 3 - 4        | 2                           | 18                    | A number corresponding to a set of possible error codes. For example: out of transactions, invalid city, city needs a county qualifier, etc. Some include numbers to identify the point in error. |
| 5 - 6        | 2                           | 17                    | This field indicates the line number where the error occurred. If this is a General error message, the field will contain zeroes (00). If no error exists the field will contain spaces.          |
| 7 - 71       | 67                          | Spaces                | Error code or spaces.   |

## End of Answer Record

The End of Answer Record is the last record for a given request in the answer file. It is used to indicate the end of information for the trip.

### Record Size: 71 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | LR                    | Always "LR" to indicate that this is an End of Answer record. |
| 3-71         | 69                          | Spaces                |   |

## Optimization Record

The Optimization Record indicates that optimization was requested.

### Record Size: 71 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>                    |
|--------------|-----------------------------|-----------------------|---------------------------------------|
| 1 - 2        | 2                           | OP                    | Optimization was used in the request. |
| 3-71         | 69                          | Spaces                |                                       |

## Error Codes

The error codes produced are identical to those generated by the standard IntelliRoute with MileMaker batch processing.

## Answer examples

These examples have been set up below to demonstrate the order of the output records.

### HHG Mileage Inquiry

**Answer:**

```
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
HRMI  
MICHILI                ILBOSTON                MA 1185  
VIBOSTON                MA    1185  
LR
```

### Single Origin Multiple Destination Inquiry

**Answer:**

```
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
HRMD  
MILOS ANGELES          CAHOUSTON                TX 1499  
MILOS ANGELES          CADALLAS                  TX 1362  
LR
```

### Optimization Inquiry No Destination Specified

**Answer:**

```
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
HRMI  
OP  
MICHICAGO              ILBARRINGTON            COIL  42  
VIOAK PARK              IL    12  
VIROSEMONT              COIL    9  
VIBARRINGTON            COIL    21  
LR
```

---

**Note:** For an optimization request with no pre-determined destination, the destination field of the request Optimization Record should contain two spaces. In addition, notice how the cities were translated from the request to the answer.

---

### Optimization Inquiry Round Trip is Specified

**Answer:**

```
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
HRMI  
OP  
MICHICAGO          ILCHICAGO          IL    78  
VIOAK PARK         IL      12  
VIBARRINGTON      COIL    31  
VIROSEMONT        COIL    21  
VICHICAGO         IL     14  
LR
```

---

Note: For a round trip optimization request, place "01" in the request destination city field. Notice that the Mileage Record reflects that this is a round trip.

---

### Optimization Inquiry Specific Destination Oak Park, IL

**Answer:**

```
1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
HRMI  
OP  
MICHICAGO          ILOAK PARK        IL    66  
VIROSEMONT        COIL    14  
VIBARRINGTON      COIL    21  
VIOAK PARK         IL     31  
LR
```

---

Note: To specify a pre-determined destination place the stop-off number of the destination city in the request Header Record destination city field. In this example, Oak Park, IL was the second city in the request. Therefore, the characters 02 were placed inside the Optimization Header Record. If Rosemont, CO, IL, were requested as the final destination, the destination city number in the request Header Record would have been the characters 04.

---

## HHG Audit Route Inquiry

### Answer:

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.

HRHA

|           |     |                |                     |     |     |
|-----------|-----|----------------|---------------------|-----|-----|
| MICHICAGO |     | ILWEST MEMPHIS | AR                  | 527 |     |
| DRI       | 94  | E              | 11S OF CHICAGO,IL   |     | 11  |
| DRI       | 57  | S              | 139SW OF PESOTUM,IL |     | 150 |
| DRUS      | 45  | S              | 34NE OF PARADISE,IL |     | 184 |
| DRI       | 57  | S              | 187IL/MO STATE LINE |     | 371 |
| DRI       | 57  | S              | 22NE OF SIKESTON,MO |     | 393 |
| DRI       | 55  | S              | 66MO/AR STATE LINE  |     | 459 |
| DRI       | 55  | S              | 63W OF MARION,AR    |     | 522 |
| DRAR      | 118 | E              | 0MARION,AR          |     | 522 |
| DRAR      | 77  | S              | 5W MEMPHIS,AR       |     | 527 |

LR

## HHG State Mileage Breakdown Only Inquiry

### Answer:

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.

HRHS

|                  |     |          |       |     |   |     |
|------------------|-----|----------|-------|-----|---|-----|
| MISALT LAKE CITY |     | UTDENVER | CO    | 489 | 0 | 489 |
| SMCO             | 288 | 0        | 288UT | 201 | 0 | 201 |

LR

## Practical Route Only Inquiry

### Answer:

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.

HRPR

|           |    |              |                        |        |      |      |
|-----------|----|--------------|------------------------|--------|------|------|
| MICHICAGO |    | ILBARRINGTON | COIL                   | 37     | 9    | 28   |
| DRI       | 90 | W            | 24S OF ROLLING MDWS,IL |        | 0:37 | 24TL |
| DRIL      | 53 | N            | 4SE OF PALATINE,IL     |        | 0:42 | 28   |
| DRUS      | 14 | W            | 8NE OF BARRINGTON      | ,CO,IL | 0:56 | 36   |
| DRIL      | 59 | SW           | 1BARRINGTON            | ,C     | 0:58 | 37   |

LR

### Practical State Mileage Breakdown Only Inquiry

**Answer:**

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
 HRPS  
 MICHICAGO ILTHUNDER BAY ON 652 77 575  
 SMIL 93 77 16MN 156 0 156ON 34 0 34  
 SMWI 369 0 369  
 LR

### Practical Route with State Mileage Breakdown Inquiry

**Answer:**

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
 HRPB  
 MICHICAGO ILBARRINGTON COIL 37 9 28  
 DRI 90 W 24S OF ROLLING MDWS, IL 0:37 24TL  
 DRIL 53 N 4SE OF PALATINE, IL 0:42 28  
 DRUS 14 W 8NE OF BARRINGTON ,CO, IL 0:56 36  
 DRIL 59 SW 1BARRINGTON ,C 0:58 37  
 SMIL 37 9 28  
 LR

### Practical Route Miles Only Inquiry

**Answers:**

1...5...10...15...20...25...30...35...40...45...50...55...60...65...70.  
 HRPM  
 MICHICAGO ILBARRINGTON COIL 42 0 42  
 DMOAK PARK, IL 12 0:24  
 DMROSEMONT ,CO, IL 9 0:45  
 DMBARRINGTON ,CO, IL 21 1:20  
 LR



# MICROSOFT EXCEL ADD-IN FORMULAS AND MACROS



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## Chapter Contents

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---

## Formulas and Macros

The types of Microsoft Excel formulas available include MileMaker HHG Mileages, MileMaker Practical Mileages, Quickest Mileages, Lowest-Cost Mileages, and data conversions.

Two macros are also provided to facilitate the saving of a Microsoft Excel workbook containing IntelliRoute mileage information to disk, and transferring the workbook for use to another PC that has Microsoft Excel installed but not IntelliRoute.

Toll cost feature formulas are now available for Quickest mileage and Lowest-Cost mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

### Warning:

When calculating mileage with State Mileage Breakdown (SMB), sufficient space must be allowed for in the Microsoft Excel worksheet for the SMB table. The SMB table is returned in the same cell as the mileage formula, and is five cells wide and  $x$  rows long, where  $x$  is the number of states and/or provinces traveled through along the specified route. For each  $x$  row returned, the first cell contains the state/province name, the second cell contains the toll cost within the US, the third cell contains the toll cost within Canada, the fourth cell contains the converted toll cost in US dollars, and the fifth cell contains the converted toll cost in Canadian dollars.

---

## MileMaker HHG Mileage Formulas

MileMaker HHG Mileage calculations determine the shortest distance between any two or more locations over truck-usable roads based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG).

All MileMaker HHG Mileage calculations give you HHG Tariff Mileages, which are used as a standard for freight rating and auditing. IntelliRoute incorporates all of the complex HHG rules that affect mileage determination, and uses only those highways, bridges, and ferries designated as “truck-authorized” by the HHG mileage guide.

### HHG

Calculates MileMaker HHG Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**HHG(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker HHG Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-1:**  
HHG formula.

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 921 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

Where cell B1 contains the formula: =HHG(A1,A2).

## HHG2

Calculates MileMaker HHG Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**HHG2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker HHG Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula  
 #VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-2:**  
HHG2 formula.

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 921 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

Where cell B1 contains the formula: =HHG2(A1,A2,A3,A4)

## HHGNC

Calculates MileMaker HHG Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**HHGNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker HHG Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-3:**  
HHGNC formula.

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 921 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

Where cell B1 contains the formula: =HHGNC(A1,A2).

## HHGNC2

Calculates MileMaker HHG Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**HHGNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker HHG Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 921 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

Where cell B1 contains the formula: =HHGNC2(A1,A2,A3,A4)

## HHGSMB

Calculates MileMaker HHG Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**HHGSMB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker HHG Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A             | B   | C   | D |
|---|---------------|-----|-----|---|
| 1 | Skokie,IL     | 921 |     |   |
| 2 | Richardson,TX | IL  | 303 |   |
| 3 |               | MO  | 291 |   |
| 4 |               | OK  | 264 |   |
| 5 |               | TX  | 63  |   |
| 6 |               |     |     |   |

Where cell B1 contains the formula: =HHGSMB(A1,A2).

**Figure 10-5:**  
HHGSMB formula.

## HHGSMB2

Calculates MileMaker HHG Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**HHGSMB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker HHG Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-6:**  
HHGSMB2 formula.

|   | A          | B   | C   | D |
|---|------------|-----|-----|---|
| 1 | Skokie     | 921 |     |   |
| 2 | IL         | IL  | 303 |   |
| 3 | Richardson | MO  | 291 |   |
| 4 | TX         | OK  | 264 |   |
| 5 |            | TX  | 63  |   |
| 6 |            |     |     |   |

Where cell B1 contains the formula: =HHGSMB2(A1,A2,A3,A4)

## HHGSMBNC

Calculates MileMaker HHG Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**HHGSMBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker HHG Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-7:**  
HHGSMBNC formula.

Example:

|   | A             | B   | C   | D |
|---|---------------|-----|-----|---|
| 1 | Skokie,IL     | 921 |     |   |
| 2 | Richardson,TX | IL  | 303 |   |
| 3 |               | MO  | 291 |   |
| 4 |               | OK  | 264 |   |
| 5 |               | TX  | 63  |   |
| 6 |               |     |     |   |

Where cell B1 contains the formula: =HHGSMBNC(A1,A2).

## HHGSMBNC2

Calculates MileMaker HHG Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**HHGSMBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker HHG Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-8:**  
HHGSMBNC2 formula.

Example:

|   | A          | B   | C   | D |
|---|------------|-----|-----|---|
| 1 | Skokie     | 921 |     |   |
| 2 | IL         | IL  | 303 |   |
| 3 | Richardson | MO  | 291 |   |
| 4 | TX         | OK  | 264 |   |
| 5 |            | TX  | 63  |   |
| 6 |            |     |     |   |

Where cell B1 contains the formula: =HHGSMBNC2(A1,A2,A3,A4)

## MileMaker Practical Mileage Formulas

MileMaker Practical Mileage calculations determine the most time-efficient mileage between the locations entered using the same road network database used in the MileMaker HHG Mileage calculations. **MileMaker Practical Miles are not calculated with HHG tariff rules.**

### PRAC

Calculates MileMaker Practical Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**PRAC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker Practical Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-9:**  
PRAC formula.

Example:

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 930 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

Where cell B1 contains the formula: =PRAC(A1,A2).

## PRAC2

Calculates MileMaker Practical Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**PRAC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker Practical Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-10:**  
PRAC2 formula.

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 930 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

Where cell B1 contains the formula: =PRAC2(A1,A2,A3,A4)

## PRACNC

Calculates MileMaker Practical Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**PRACNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker Practical Mileage.

-1: IntelliRoute general error, check location specification

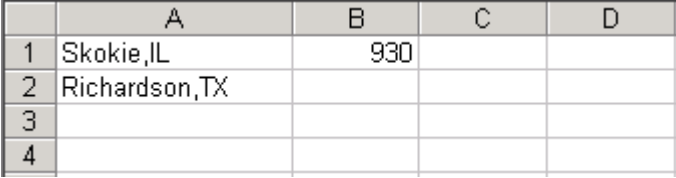
#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:



The image shows a small Excel spreadsheet with 4 rows and 4 columns (A, B, C, D). Row 1: A1 contains 'Skokie,IL', B1 contains '930'. Row 2: A2 contains 'Richardson,TX'. Rows 3 and 4 are empty.

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 930 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

**Figure 10-11:**  
PRACNC formula.

Where cell B1 contains the formula: =PRACNC(A1,A2).

## PRACNC2

Calculates MileMaker Practical Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**PRACNC2(A1,A2,A3,A4)**

| Parameter | Description   |
|-----------|---|
| A1        | The cell containing the value of the first portion of the origin location.  |
| A2        | The cell containing the value of the second portion of the origin location. |

| Parameter | Description  |
|-----------|--|
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker Practical Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 930 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

**Figure 10-12:**  
PRACNC2 formula.

Where cell B1 contains the formula: =PRACNC2(A1,A2,A3,A4)

## PRACSMB

Calculates MileMaker Practical Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**PRACSMB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker Practical Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-13:**  
PRACSMB formula.

|   | A             | B   | C   | D |
|---|---------------|-----|-----|---|
| 1 | Skokie,IL     | 930 |     |   |
| 2 | Richardson,TX | IL  | 309 |   |
| 3 |               | MO  | 292 |   |
| 4 |               | OK  | 264 |   |
| 5 |               | TX  | 65  |   |
| 6 |               |     |     |   |

Where cell B1 contains the formula: =PRACSMB(A1,A2).

## PRACSMB2

Calculates MileMaker Practical Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**PRACSMB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker Practical Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-14:**  
PRACSMB2 formula.

Example:

|   | A          | B   | C   | D |
|---|------------|-----|-----|---|
| 1 | Skokie     | 930 |     |   |
| 2 | IL         | IL  | 309 |   |
| 3 | Richardson | MO  | 292 |   |
| 4 | TX         | OK  | 264 |   |
| 5 |            | TX  | 65  |   |
| 6 |            |     |     |   |

Where cell B1 contains the formula: =PRACSMB2(A1,A2,A3,A4)

## PRACSMBNC

Calculates MileMaker Practical Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**PRACSMBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: MileMaker Practical Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-15:**  
PRACSMBNC formula.

|   | A             | B   | C   | D |
|---|---------------|-----|-----|---|
| 1 | Skokie,IL     | 930 |     |   |
| 2 | Richardson,TX | IL  | 309 |   |
| 3 |               | MO  | 292 |   |
| 4 |               | OK  | 264 |   |
| 5 |               | TX  | 65  |   |
| 6 |               |     |     |   |

Where cell B1 contains the formula: =PRACSMBNC(A1,A2).

## PRACSMBNC2

Calculates MileMaker Practical Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**PRACSMBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: MileMaker Practical Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-16:**  
PRACSMBNC2 formula.

|   | A          | B   | C   | D |
|---|------------|-----|-----|---|
| 1 | Skokie     | 930 |     |   |
| 2 | IL         | IL  | 309 |   |
| 3 | Richardson | MO  | 292 |   |
| 4 | TX         | OK  | 264 |   |
| 5 |            | TX  | 65  |   |
| 6 |            |     |     |   |

Where cell B1 contains the formula: =PRACSMBNC2(A1,A2,A3,A4)

## Quickest Mileage Formulas

Quickest Mileage calculations determine the fastest (shortest time) truck-usable mileage between two locations. The mileage is determined using the new IntelliRoute GPS-accurate road network.

## QUICK

Calculates Quickest Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**QUICK(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

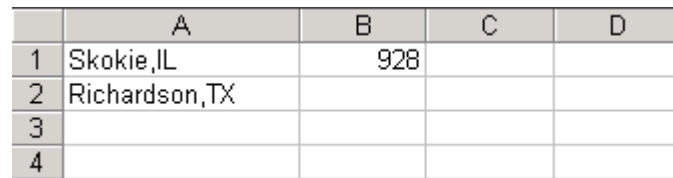
#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:



|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 928 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

**Figure 10-17:**  
QUICK formula.

Where cell B1 contains the formula: =QUICK(A1,A2).

## QUICK2

Calculates Quickest Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**QUICK2(A1,A2,A3,A4)**

| Parameter | Description   |
|-----------|---|
| A1        | The cell containing the value of the first portion of the origin location.      |
| A2        | The cell containing the value of the second portion of the origin location.     |
| A3        | The cell containing the value of the first portion of the destination location. |

| Parameter | Description  |
|-----------|--|
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 928 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

Figure 10-18:  
QUICK2 formula.

Where cell B1 contains the formula: =QUICK2(A1,A2,A3,A4)

## QUICKNC

Calculates Quickest Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**QUICKNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-19:**  
QUICKNC formula.

|   | A             | B   | C | D |
|---|---------------|-----|---|---|
| 1 | Skokie,IL     | 928 |   |   |
| 2 | Richardson,TX |     |   |   |
| 3 |               |     |   |   |
| 4 |               |     |   |   |

Where cell B1 contains the formula: =QUICKNC(A1,A2).

## QUICKNC2

Calculates Quickest Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**QUICKNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-20:**  
QUICKKNC2 formula.

Example:

|   | A          | B   | C | D |
|---|------------|-----|---|---|
| 1 | Skokie     | 928 |   |   |
| 2 | IL         |     |   |   |
| 3 | Richardson |     |   |   |
| 4 | TX         |     |   |   |
| 5 |            |     |   |   |

Where cell B1 contains the formula: =QUICKKNC2(A1,A2,A3,A4)

## QUICKSMB

Calculates Quickest Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**QUICKSMB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-21:**  
QUICKSMB formula.

|   | A             | B   | C     | D |
|---|---------------|-----|-------|---|
| 1 | Skokie,IL     | 928 |       |   |
| 2 | Richardson,TX | IL  | 310.1 |   |
| 3 |               | MO  | 291.8 |   |
| 4 |               | OK  | 260.6 |   |
| 5 |               | TX  | 65.4  |   |
| 6 |               |     |       |   |

Where cell B1 contains the formula: =QUICKSMB(A1,A2).

## QUICKSMB2

Calculates Quickest Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**QUICKSMB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B   | C     | D |
|---|------------|-----|-------|---|
| 1 | Skokie     | 928 |       |   |
| 2 | IL         | IL  | 310.1 |   |
| 3 | Richardson | MO  | 291.8 |   |
| 4 | TX         | OK  | 260.6 |   |
| 5 |            | TX  | 65.4  |   |
| 6 |            |     |       |   |

**Figure 10-22:**  
QUICKSMB2 formula.

Where cell B1 contains the formula: =QUICKSMB2(A1,A2,A3,A4)

## QUICKSMBNC

Calculates Quickest Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**QUICKSMBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-23:**  
QUICKSMBNC formula.

|   | A             | B   | C     | D |
|---|---------------|-----|-------|---|
| 1 | Skokie,IL     | 928 |       |   |
| 2 | Richardson,TX | IL  | 310.1 |   |
| 3 |               | MO  | 291.8 |   |
| 4 |               | OK  | 260.6 |   |
| 5 |               | TX  | 65.4  |   |
| 6 |               |     |       |   |

Where cell B1 contains the formula: =QUICKSMBNC(A1,A2).

## QUICKSMBNC2

Calculates Quickest Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**QUICKSMBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-24:**  
QUICKSMBNC2  
formula.

|   | A          | B   | C     | D |
|---|------------|-----|-------|---|
| 1 | Skokie     | 928 |       |   |
| 2 | IL         | IL  | 310.1 |   |
| 3 | Richardson | MO  | 291.8 |   |
| 4 | TX         | OK  | 260.6 |   |
| 5 |            | TX  | 65.4  |   |
| 6 |            |     |       |   |

Where cell B1 contains the formula: =QUICKSMBNC2(A1,A2,A3,A4)

## QTT

Calculates the Quickest total toll costs between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total amount for the US toll will be output in the same cell as the formula and the total amount for the Canadian toll will be output in the adjacent cell.

Syntax:

**QTT(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-25:**  
QTT formula.

Example:

|   | A            | B     | C      | D |
|---|--------------|-------|--------|---|
| 1 | Boston,MA    | 14.21 | 483.90 |   |
| 2 | St. Johns,NF |       |        |   |
| 3 |              |       |        |   |

Where cell B1 contains the formula: =QTT(A1,A2).

## QTT2

Calculates the Quickest total toll costs between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

Syntax:

**QTT2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-26:**  
QTT2 formula.

Example:

|   | A         | B     | C     | D |
|---|-----------|-------|-------|---|
| 1 | Boston    | 14.21 | 483.9 |   |
| 2 | MA        |       |       |   |
| 3 | St. Johns |       |       |   |
| 4 | NF        |       |       |   |
| 5 |           |       |       |   |

Where cell B1 contains the formula: = QTT2(A1,A2,A3,A4)

## QTTNC

This formula calculates the Quickest total toll costs between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**QTTNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-27:**  
QTTNC formula.

|   | A            | B     | C      | D |
|---|--------------|-------|--------|---|
| 1 | Boston,MA    | 14.21 | 483.90 |   |
| 2 | St. Johns,NF |       |        |   |
| 3 |              |       |        |   |

Where cell B1 contains the formula: = QTTNC(A1,A2).

## QTTNC2

Calculates the Quickest total toll costs between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**QTTNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A         | B     | C     | D |
|---|-----------|-------|-------|---|
| 1 | Boston    | 14.21 | 483.9 |   |
| 2 | MA        |       |       |   |
| 3 | St. Johns |       |       |   |
| 4 | NF        |       |       |   |
| 5 |           |       |       |   |

Where cell B1 contains the formula: = QTTNC2(A1,A2,A3,A4)

## QTTNCNV

Calculates the Quickest total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total converted tolls in US dollars and Canadian dollars will be output in different cells.

The converted toll to US dollars outputs in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

Syntax:

**QTTCNV(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A            | B      | C      | D |
|---|--------------|--------|--------|---|
| 1 | Boston,MA    | 454.12 | 499.53 |   |
| 2 | St. Johns,NF |        |        |   |
| 3 |              |        |        |   |

**Figure 10-29:**  
QTTCNV formula.

Where cell B1 contains the formula: = QTTCNV(A1,A2).

**QTTCNV2**

Calculates the Quickest total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The converted toll to US dollars will be output in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

Syntax:

**QTTCNV2(A1,A2,A3,A4)**

| Parameter | Description   |
|-----------|---|
| A1        | The cell containing the value of the first portion of the origin location.  |
| A2        | The cell containing the value of the second portion of the origin location. |

| Parameter | Description  |
|-----------|--|
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A         | B      | C      | D |
|---|-----------|--------|--------|---|
| 1 | Boston    | 454.12 | 499.53 |   |
| 2 | MA        |        |        |   |
| 3 | St. Johns |        |        |   |
| 4 | NF        |        |        |   |
| 5 |           |        |        |   |

**Figure 10-30:**  
QTTCNV2 formula.

Where cell B1 contains the formula: = QTTCNV2(A1,A2,A3,A4)

## QTTCNVNC

Calculates the Quickest total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The converted toll to US dollars will be output in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**QTTCNVNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-31:**  
QTTCNVNC formula.

|   | A            | B      | C      | D |
|---|--------------|--------|--------|---|
| 1 | Boston,MA    | 454.12 | 499.53 |   |
| 2 | St. Johns,NF |        |        |   |
| 3 |              |        |        |   |

Where cell B1 contains the formula: = QTTCNVNC(A1,A2)

## QTTCNVNC2

Calculates the Quickest total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The converted toll to US dollars outputs in the same cell as the formula and the converted toll to Canadian dollars outputs in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**QTTCNVNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-32:**  
QTTCNVNC2 formula.

|   | A         | B      | C      | D |
|---|-----------|--------|--------|---|
| 1 | Boston    | 454.12 | 499.53 |   |
| 2 | MA        |        |        |   |
| 3 | St. Johns |        |        |   |
| 4 | NF        |        |        |   |
| 5 |           |        |        |   |

Where cell B1 contains the formula: = QTTCNVNC2(A1,A2,A3,A4)

## QSTB

Calculates the Quickest state toll cost breakdown between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

Syntax:

**QSTB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-33:**  
QSTB formula.

Example:

|   | A            | B  | C     | D      | E      | F      | G |
|---|--------------|----|-------|--------|--------|--------|---|
| 1 | Boston,MA    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | St. Johns,NF | ME | 10.71 | 0.00   | 10.71  | 11.78  |   |
| 3 |              | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 |              | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |              | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |              | NS | 0.00  | 25.00  | 22.73  | 25.00  |   |
| 7 |              |    |       |        |        |        |   |

Where cell B1 contains the formula: = QSTB(A1,A2).

## QSTB2

Calculates the Quickest state toll cost breakdown between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

Syntax:

**QSTB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-34:**  
QSTB2 formula.

Example:

|   | A         | B  | C     | D      | E      | F      | G |
|---|-----------|----|-------|--------|--------|--------|---|
| 1 | Boston    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | MA        | ME | 10.71 | 0.00   | 10.71  | 11.78  |   |
| 3 | St. Johns | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 | NF        | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |           | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |           | NS | 0.00  | 25.00  | 22.73  | 25.00  |   |
| 7 |           |    |       |        |        |        |   |

Where cell B1 contains the formula: = QSTB2(A1,A2,A3,A4)

## QSTBNC

Calculates the Quickest state toll cost breakdown between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars will be output.

The browse screen is disabled for location entries.

Syntax:

**QSTBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-35:**  
QSTBNC formula.

Example:

|   | A            | B  | C     | D      | E      | F      | G |
|---|--------------|----|-------|--------|--------|--------|---|
| 1 | Boston,MA    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | St. Johns,NF | ME | 10.71 | 0.00   | 10.71  | 11.78  |   |
| 3 |              | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 |              | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |              | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |              | NS | 0.00  | 25.00  | 22.73  | 25.00  |   |
| 7 |              |    |       |        |        |        |   |

Where cell B1 contains the formula: = QSTBNC(A1,A2).

## QSTBNC2

Calculates the Quickest state toll cost breakdown between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

The browse screen is disabled for location entries.

Syntax:

**QSTBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Quickest Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-36:**  
QSTBNC2 formula.

Example:

|   | A         | B  | C     | D      | E      | F      | G |
|---|-----------|----|-------|--------|--------|--------|---|
| 1 | Boston    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | MA        | ME | 10.71 | 0.00   | 10.71  | 11.78  |   |
| 3 | St. Johns | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 | NF        | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |           | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |           | NS | 0.00  | 25.00  | 22.73  | 25.00  |   |
| 7 |           |    |       |        |        |        |   |

Where cell B1 contains the formula: = QSTBNC2(A1,A2,A3,A4)

## Lowest-Cost Mileage Formulas

Lowest-Cost Mileage calculations determine the lowest-cost truck-usable route mileage between locations. The route is determined using the new IntelliRoute GPS-accurate road network.

### LC

Calculates Lowest-Cost Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**LC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-37:**  
LC formula.

Example:

|   | A             | B     | C | D |
|---|---------------|-------|---|---|
| 1 | Skokie,IL     | 930.8 |   |   |
| 2 | Richardson,TX |       |   |   |
| 3 |               |       |   |   |
| 4 |               |       |   |   |

Where cell B1 contains the formula: =LC(A1,A2).

## LC2

Calculates Lowest-Cost Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**LC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-38:**  
LC2 formula.

|   | A          | B     | C | D |
|---|------------|-------|---|---|
| 1 | Skokie     | 930.8 |   |   |
| 2 | IL         |       |   |   |
| 3 | Richardson |       |   |   |
| 4 | TX         |       |   |   |
| 5 |            |       |   |   |

Where cell B1 contains the formula: =LC2(A1,A2,A3,A4)

## LCNC

Calculates Lowest-Cost Mileage between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**LCNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

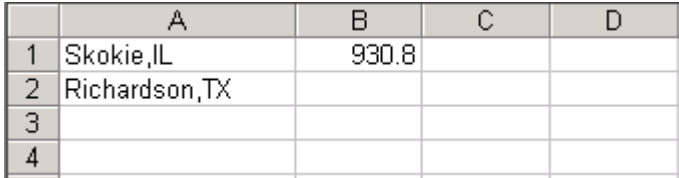
#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:



|   | A             | B     | C | D |
|---|---------------|-------|---|---|
| 1 | Skokie,IL     | 930.8 |   |   |
| 2 | Richardson,TX |       |   |   |
| 3 |               |       |   |   |
| 4 |               |       |   |   |

**Figure 10-39:**  
LCNC formula.

Where cell B1 contains the formula: =LCNC(A1,A2).

## LCNC2

Calculates Lowest-Cost Mileage between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**LCNC2(A1,A2,A3,A4)**

| Parameter | Description   |
|-----------|---|
| A1        | The cell containing the value of the first portion of the origin location.  |
| A2        | The cell containing the value of the second portion of the origin location. |

| Parameter | Description  |
|-----------|--|
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

- If successful: Lowest-Cost Mileage.
- 1: IntelliRoute general error, check location specification
- #NAME?: Microsoft Excel doesn't recognize text in a formula
- #VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B     | C | D |
|---|------------|-------|---|---|
| 1 | Skokie     | 930.8 |   |   |
| 2 | IL         |       |   |   |
| 3 | Richardson |       |   |   |
| 4 | TX         |       |   |   |
| 5 |            |       |   |   |

Where cell B1 contains the formula: =LCNC2(A1,A2,A3,A4)

Figure 10-40:  
LCNC2 formula.

### LCSMB

Calculates Lowest-Cost Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

Syntax:

**LCSMB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

- If successful: Lowest-Cost Mileage with SMB table.
- 1: IntelliRoute general error, check location specification
- #NAME?: Microsoft Excel doesn't recognize text in a formula
- #VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-41:**  
LCSMB formula.

|   | A             | B     | C     | D |
|---|---------------|-------|-------|---|
| 1 | Skokie,IL     | 930.8 |       |   |
| 2 | Richardson,TX | IL    | 310.1 |   |
| 3 |               | MO    | 291.8 |   |
| 4 |               | OK    | 263.4 |   |
| 5 |               | TX    | 65.4  |   |
| 6 |               |       |       |   |

Where cell B1 contains the formula: =LCSMB(A1,A2).

## LCSMB2

Calculates Lowest-Cost Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

Syntax:

**LCSMB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-42:**  
LCSMB2 formula.

Example:

|   | A          | B     | C     | D |
|---|------------|-------|-------|---|
| 1 | Skokie     | 930.8 |       |   |
| 2 | IL         | IL    | 310.1 |   |
| 3 | Richardson | MO    | 291.8 |   |
| 4 | TX         | OK    | 263.4 |   |
| 5 |            | TX    | 65.4  |   |
| 6 |            |       |       |   |

Where cell B1 contains the formula: =LCSMB2(A1,A2,A3,A4)

## LCSMBNC

Calculates Lowest-Cost Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2. The browse screen is disabled for location entries.

Syntax:

**LCSMBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-43:**  
LCSMBNC formula.

|   | A             | B     | C     | D |
|---|---------------|-------|-------|---|
| 1 | Skokie,IL     | 930.8 |       |   |
| 2 | Richardson,TX | IL    | 310.1 |   |
| 3 |               | MO    | 291.8 |   |
| 4 |               | OK    | 263.4 |   |
| 5 |               | TX    | 65.4  |   |
| 6 |               |       |       |   |

Where cell B1 contains the formula: =LCSMBNC(A1,A2).

## LCSMBNC2

Calculates Lowest-Cost Mileage with SMB, a breakdown of mileage traversed in each state, between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4. The browse screen is disabled for location entries.

Syntax:

**LCSMBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A          | B     | C     | D |
|---|------------|-------|-------|---|
| 1 | Skokie     | 930.8 |       |   |
| 2 | IL         | IL    | 310.1 |   |
| 3 | Richardson | MO    | 291.8 |   |
| 4 | TX         | OK    | 263.4 |   |
| 5 |            | TX    | 65.4  |   |
| 6 |            |       |       |   |

**Figure 10-44:**  
LCSMBNC2 formula.

Where cell B1 contains the formula: =LCSMBNC2(A1,A2,A3,A4)

## LCTT

Calculates the Lowest-Cost total toll costs between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total amount for the US toll will be output in the same cell as the formula and the total amount for the Canadian toll will be output in the adjacent cell.

Syntax:

**LCTT(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A            | B     | C      | D |
|---|--------------|-------|--------|---|
| 1 | Boston,MA    | 13.76 | 458.90 |   |
| 2 | St. Johns,NF |       |        |   |
| 3 |              |       |        |   |

**Figure 10-45:**  
LCTT formula.

Where cell B1 contains the formula: = LCTT(A1,A2).

## LCTT2

Calculates the Lowest-Cost total toll costs between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

Syntax:

**LCTT2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-46:**  
LCTT2 formula.

|   | A         | B     | C      | D |
|---|-----------|-------|--------|---|
| 1 | Boston    | 13.76 | 458.90 |   |
| 2 | MA        |       |        |   |
| 3 | St. Johns |       |        |   |
| 4 | NF        |       |        |   |
| 5 |           |       |        |   |

Where cell B1 contains the formula: = LCTT2(A1,A2,A3,A4)

## LCTTNC

Calculates the Lowest-Cost total toll costs between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**LCTTNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-47:**  
LCTTNC formula.

Example:

|   | A            | B     | C      | D |
|---|--------------|-------|--------|---|
| 1 | Boston,MA    | 13.76 | 458.90 |   |
| 2 | St. Johns,NF |       |        |   |
| 3 |              |       |        |   |

Where cell B1 contains the formula: = LCTTNC(A1,A2).

## LCTTNC2

Calculates the Lowest-Cost total toll costs between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The total amount for the US toll will be output in the same cell as the formula and the total amount for Canadian toll will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**LCTTNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-48:**  
LCTTNC2 formula.

Example:

|   | A         | B     | C      | D |
|---|-----------|-------|--------|---|
| 1 | Boston    | 13.76 | 458.90 |   |
| 2 | MA        |       |        |   |
| 3 | St. Johns |       |        |   |
| 4 | NF        |       |        |   |
| 5 |           |       |        |   |

Where cell B1 contains the formula: = LCTTNC2(A1,A2,A3,A4)

## LCTTCNV

Calculates the Lowest-Cost total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The total converted tolls in US dollars and Canadian dollars will be output in different cells.

The converted toll to US dollars outputs in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

Syntax:

**LCTTCNV(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-49:**  
LCTTCNV formula.

|   | A            | B      | C      | D |
|---|--------------|--------|--------|---|
| 1 | Boston,MA    | 430.94 | 474.04 |   |
| 2 | St. Johns,NF |        |        |   |
| 3 |              |        |        |   |

Where cell B1 contains the formula: = LCTTCNV(A1,A2).

## LCTTCNV2

Calculates the Lowest-Cost total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The converted toll to US dollars will be output in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

Syntax:

**LCTTCNV2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A         | B      | C      | D |
|---|-----------|--------|--------|---|
| 1 | Boston    | 430.94 | 474.04 |   |
| 2 | MA        |        |        |   |
| 3 | St. Johns |        |        |   |
| 4 | NF        |        |        |   |
| 5 |           |        |        |   |

Where cell B1 contains the formula: =LCTTCNV2(A1,A2,A3,A4)

## LCTTCNVNC

Calculates the Lowest-Cost total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

The converted toll to US dollars will be output in the same cell as the formula and the converted toll to Canadian dollars will be output in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**LCTTCNVNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A            | B      | C      | D |
|---|--------------|--------|--------|---|
| 1 | Boston,MA    | 430.94 | 474.04 |   |
| 2 | St. Johns,NF |        |        |   |
| 3 |              |        |        |   |

**Figure 10-51:**  
LCTTCNVNC formula.

Where cell B1 contains the formula: = LCTTCNVNC(A1,A2).

**LCTTCNVNC2**

Calculates the Lowest-Cost total toll costs converted to US dollars and Canadian dollars between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

The converted toll to US dollars outputs in the same cell as the formula and the converted toll to Canadian dollars outputs in the adjacent cell.

The browse screen is disabled for location entries.

Syntax:

**LCTTCNVNC2(A1,A2,A3,A4)**

| Parameter | Description   |
|-----------|---|
| A1        | The cell containing the value of the first portion of the origin location.  |
| A2        | The cell containing the value of the second portion of the origin location. |

| Parameter | Description  |
|-----------|--|
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A         | B      | C      | D |
|---|-----------|--------|--------|---|
| 1 | Boston    | 430.94 | 474.04 |   |
| 2 | MA        |        |        |   |
| 3 | St. Johns |        |        |   |
| 4 | NF        |        |        |   |
| 5 |           |        |        |   |

**Figure 10-52:**  
LCTTCNVNC2 formula.

Where cell B1 contains the formula: = LCTTCNVNC2(A1,A2,A3,A4)

## LCSTB

Calculates the Lowest-Cost state toll cost breakdown between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

Syntax:

**LCSTB(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula  
 #VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-53:**  
 LCSTB formula.

|   | A            | B  | C     | D      | E      | F      | G |
|---|--------------|----|-------|--------|--------|--------|---|
| 1 | Boston,MA    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | St. Johns,NF | ME | 10.26 | 0.00   | 10.26  | 11.29  |   |
| 3 |              | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 |              | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |              | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |              | NS | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 7 |              |    |       |        |        |        |   |

Where cell B1 contains the formula: = LCSTB(A1,A2).

## LCSTB2

Calculates the Lowest-Cost state toll cost breakdown between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

Syntax:

**LCSTB2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-54:**  
LCSTB2 formula.

|   | A         | B  | C     | D      | E      | F      | G |
|---|-----------|----|-------|--------|--------|--------|---|
| 1 | Boston    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | MA        | ME | 10.26 | 0.00   | 10.26  | 11.29  |   |
| 3 | St. Johns | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 | NF        | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |           | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |           | NS | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 7 |           |    |       |        |        |        |   |

Where cell B1 contains the formula: = LCSTB2(A1,A2,A3,A4)

## LCSTBNC

Calculates the Lowest-Cost state toll cost breakdown between an origin location, represented by the value in cell A1, and a destination location, represented by the value in cell A2.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars will be output.

The browse screen is disabled for location entries.

Syntax:

**LCSTBNC(A1,A2)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the origin location.      |
| A2        | The cell containing the value of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

**Figure 10-55:**  
LCSTBNC formula.

Example:

|   | A            | B  | C     | D      | E      | F      | G |
|---|--------------|----|-------|--------|--------|--------|---|
| 1 | Boston,MA    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | St. Johns,NF | ME | 10.26 | 0.00   | 10.26  | 11.29  |   |
| 3 |              | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 |              | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |              | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |              | NS | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 7 |              |    |       |        |        |        |   |

Where cell B1 contains the formula: = LCSTBNC(A1,A2).

## LCSTBNC2

Calculates the Lowest-Cost state toll cost breakdown between an origin location, represented by the values in cells A1 and A2, and a destination location, represented by the values in cells A3 and A4.

States/Provinces, US toll costs, Canadian toll costs, toll costs converted to US dollars, and toll costs converted to Canadian dollars are output.

The browse screen is disabled for location entries.

Syntax:

**LCSTBNC2(A1,A2,A3,A4)**

| Parameter | Description  |
|-----------|--|
| A1        | The cell containing the value of the first portion of the origin location.       |
| A2        | The cell containing the value of the second portion of the origin location.      |
| A3        | The cell containing the value of the first portion of the destination location.  |
| A4        | The cell containing the value of the second portion of the destination location. |

Returns:

If successful: Lowest-Cost Mileage with SMB table.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

**Figure 10-56:**  
LCSTBNC2 formula.

|   | A         | B  | C     | D      | E      | F      | G |
|---|-----------|----|-------|--------|--------|--------|---|
| 1 | Boston    | MA | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 2 | MA        | ME | 10.26 | 0.00   | 10.26  | 11.29  |   |
| 3 | St. Johns | NB | 0.00  | 1.40   | 1.27   | 1.40   |   |
| 4 | NF        | NF | 0.00  | 457.50 | 415.91 | 457.50 |   |
| 5 |           | NH | 3.50  | 0.00   | 3.50   | 3.85   |   |
| 6 |           | NS | 0.00  | 0.00   | 0.00   | 0.00   |   |
| 7 |           |    |       |        |        |        |   |

Where cell B1 contains the formula: = LCSTBNC2(A1,A2,A3,A4)

## Get Exchange Rate Formula

The Get Exchange Rate formula returns the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

### GetExchangeRate

Returns the current US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

Syntax:

**GetExchangeRate()**

Returns:

If successful: the exchange rate set in IntelliRoute.

-1: IntelliRoute general error

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Example:

**Figure 10-57:**  
GetExchangeRate  
formula.

|   | A    | B | C |
|---|------|---|---|
| 1 | 1.10 |   |   |
| 2 |      |   |   |

Where cell A1 contains the formula: = GetExchangeRate().

## Data Conversion Formulas

Data Conversion formulas are provided for converting an SPLC or ZIP Code to a corresponding location name, for converting ZIP Codes to a corresponding city name or SPLC code, and for converting a city name to a corresponding ZIP Code.

## CITYZIP

Converts a city name, represented by the value in cell A1, to its corresponding ZIP Code. The browse screen is disabled with this formula. If multiple locations are found for a ZIP Code, the first designated location is returned.

Syntax:

### **CITYZIP(A1)**

| <b>Parameter</b> | <b>Description</b>                              |
|------------------|---|
| A1               | The cell containing the value of the city name. |

Returns:

If successful: a corresponding ZIP Code.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Example:

|   | A         | B     | C | D |
|---|-----------|-------|---|---|
| 1 | Skokie,IL | 60076 |   |   |
| 2 |           |       |   |   |
| 3 |           |       |   |   |

**Figure 10-58:**  
CITYZIP formula.

Where cell B1 contains the formula: =CITYZIP(A1).

## CODETOCITY

Converts an SPLC or ZIP Code, represented by the value in cell A1, to its corresponding city name.

Syntax:

### **CODETOCITY(A1)**

| <b>Parameter</b> | <b>Description</b>                                     |
|------------------|--|
| A1               | The cell containing the value of the SPLC or ZIP Code. |

Returns:

If successful: a corresponding city name.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Examples:

**Figure 10-59:**  
CODETOCITY formula  
for SPLC.

|   | A         | B         | C |
|---|-----------|-----------|---|
| 1 | 381154000 | SKOKIE,IL |   |
| 2 |           |           |   |

Where cell B1 contains the formula: = CODETOCITY(A1).

or

**Figure 10-60:**  
CODETOCITY formula  
for ZIP.

|   | A     | B           | C |
|---|-------|-------------|---|
| 1 | 60201 | EVANSTON,IL |   |
| 2 |       |             |   |

Where cell B1 contains the formula: = CODETOCITY(A1).

## ZIPCHG

Converts a ZIP Code, represented by the value in cell A1, to its corresponding city name or SPLC code. The browse screen is disabled with this formula. If multiple locations are found for a ZIP Code, the first designated location is returned.

Syntax:

**ZIPCHG(A1,Flag)**

| Parameter   | Description  |
|-------------|--|
| <i>A1</i>   | The cell containing the value of the ZIP Code.   |
| <i>Flag</i> | If the Flag is set to “0”, the ZIP Code is converted to a city name. If the Flag is set to “1”, the ZIP Code is converted to an SPLC code. |

Returns:

If the Flag = “0” and successful: a corresponding city name.

If the Flag = “1” and successful: a corresponding SPLC code.

-1: IntelliRoute general error, check location specification

#NAME?: Microsoft Excel doesn't recognize text in a formula

#VALUE!: Microsoft Excel detected incorrect argument or operand used

Remarks:

For information on entering locations, see “Accepted Formats for Location Entry” in Chapter 2.

Examples:

**Figure 10-61:**  
ZIPCHG formula for city name.

|   | A     | B           | C |
|---|-------|-------------|---|
| 1 | 60201 | EVANSTON,IL |   |
| 2 |       |             |   |

Where cell B1 contains the formula: =ZIPCHG(A1,0)

or

**Figure 10-62:**  
ZIPCHG formula for SPLC.

|   | A     | B         | C |
|---|-------|-----------|---|
| 1 | 60201 | 381140000 |   |
| 2 |       |           |   |

Where cell B1 contains the formula: =ZIPCHG(A1,1)

## Special Macros

These macros are provided to facilitate the saving of a Microsoft Excel workbook containing IntelliRoute mileage information to disk, and transferring the workbook for use to another PC that has Microsoft Excel installed but not IntelliRoute.

### Freeze

Replaces all selected formulas with their current cell values. This macro facilitates the saving of a Microsoft Excel workbook containing IntelliRoute mileage information to disk, and transferring the workbook for use to another PC that has Microsoft Excel installed but not IntelliRoute.



To freeze the selected cell formulas:

1. Select the cells containing the formulas you want to freeze.
2. On the **Tools** menu, click **Macro:Macros**.
3. In the **Macro Name** box, enter **Freeze**.
4. Click **Run** or press ENTER.

### SetToManual

Sets the Microsoft Excel workbook calculation mode to manual. This macro facilitates the saving of a Microsoft Excel workbook containing IntelliRoute mileage information to disk, and transferring the workbook for use to another PC that has Microsoft Excel installed but not IntelliRoute.



To set the Microsoft Excel workbook calculation mode to manual:

1. On the **Tools** menu, click **Macro:Macros**.
2. In the **Macro Name** box, enter **SetToManual**.
3. Click **Run** or press ENTER.



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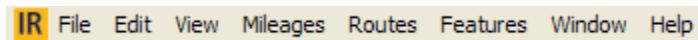
---

# Menu and Toolbar Commands

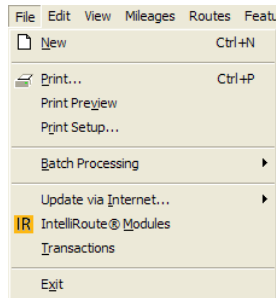
Like other Windows applications, the IntelliRoute menu bar groups related commands and options. When you click on a word in the menu bar, a drop-down list of commands appears. Move your cursor to the desired item in the menu, and then click on it to highlight and select it.

---

## Menu Commands



### File Menu



#### New

Creates a new active window with no mileage or route information. In the title bar, IntelliRoute labels each new window Route 1, Route 2, and so on.

#### Print

Displays the standard Print dialog box.

#### Print Preview

Displays the active document as it will look when you print it on the currently selected printer.

#### Print Setup

Displays the standard Print Setup dialog box, where you can view and change the active printer, the printing orientation, and the paper size and source.

#### Batch Processing

##### Setup

Displays the Batch Input File - Batch.in dialog box, where you can create an ASCII batch input file for future processing.

##### Process

Displays the Batch Process dialog box, where you can process a batch input file and create an ASCII batch output file that you can use in other programs such as spreadsheets, word processors, or databases.

## LAN Interface

**(IntelliRoute LAN version only)** Displays the LAN Interface dialog box where the LAN administrator can maintain the LAN interface.

Note: This menu item is only active for the LAN administrator's user ID.

## Update via Internet

### Download Updates

Displays a message box indicating that all files are presently up to date or a dialog box where you can download toll cost and other updates from the Internet.

### View Download History

Displays a dialog box where you can view the download history log containing the update file name, version, size, download date, and upload date.

## Transactions

Displays the Transactions dialog box where you can monitor your transaction usage and review license information.

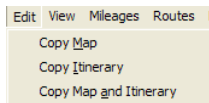
## Add Users

Displays the LAN dialog box, where you can add to the maximum number of licensed users.

## Exit

Quits IntelliRoute and returns to Windows.

## Edit Menu



### Copy Origin Address Map

Copies the active origin street-level map to the Windows clipboard for pasting into another Windows application.

### Copy Destination Address Map

Copies the active destination street-level map to the Windows clipboard for pasting into another Windows application.

### Copy Map/Copy Highway Map

Copies the active highway map to the Windows clipboard for pasting into another Windows application.

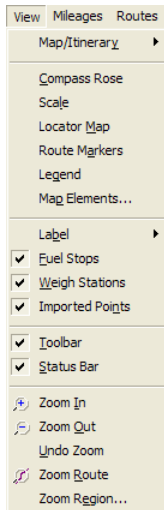
### Copy Itinerary

Copies the itinerary for the active file to the Windows clipboard for pasting into another Windows application.

## Copy All

Copies the map (if available) and the itinerary to the Windows clipboard for pasting into another Windows application.

## View Menu



### Map/itinerary

#### Map Only

After you generate a map and itinerary, this selection moves the split bar to the far left of the screen to hide the itinerary and show only the map.

#### Itinerary Only

After you generate a map and itinerary, this selection moves the split bar to the far right of the screen to hide the map and show only the itinerary.

#### Map/Itinerary Split

After you generate a map and itinerary, this selection restores the default display of the map on the right, the itinerary on the left, and the split bar down the middle.

#### Origin Street Map

After you generate a map and itinerary, this selection displays the origin street-level map in a separate window to the left of the itinerary.

#### Destination Street Map

After you generate a map and itinerary, this selection displays the destination street-level map in a separate window to the left of the itinerary.

### Compass Rose

Hides or shows the Compass. You can click on any of the shaded areas within the Compass to scroll the map in that direction. The Compass is particularly effective for moving the map diagonally.

### Scale

Hides or shows the scale bar. The scale shows distances in miles relative to the map in the active window. You may click and drag the scale bars to figure approximate distances between points on the map.

### Locator Map

Hides or shows the Locator Map. The Locator Map is a small map of North America, with a solid line forming a rectangle. The rectangle shows you your current map view in the context of the larger, surrounding area. You can move about on the map in the active window by dragging the rectangle in the Locator Map. Additionally, you can reposition the Locator Map window by clicking on its title bar and dragging, and also resize it by dragging its borders.

## Route Markers

Hides or shows the Route Markers window. The route markers are push-pin symbols that you can use to create a route on the map. The green marker designates your desired origin. The red marker symbolizes your intended destination. Use the blue marker to indicate the locations of any stop-offs you would like to make. Drag any of these markers and drop them on your map. Then, on the toolbar, click the **Calculate** button to generate a **Quickest** route.

## Legend

Hides or shows the legend. The legend tells you the meaning of the symbols on the map, such as Interstate, Toll Road, State Border, etc.

## Map Elements

Displays the Display Map Elements dialog box, which lists the items that are shown on IntelliRoute maps. By default, all items are selected. You can deselect items to customize the appearance of your maps. Elements include Coastlines, Rivers and lakes, State boundaries, Highways, Cities and towns, and Location names.

## Label

### Hide All Labels

Hides all location markers on the current map.

### Label Route

Displays the location labels for the route on the current map.

### Show Unabbreviated Name

Restores the full location names on the labels on the current map.

## Fuel Stops

You can select or deselect this option to show or hide fuel stops on the map.

## Weigh Stations

You can select or deselect this option to show or hide weigh stations on the map.

## Imported Points

You can select or deselect this option to show or hide locations you have imported for display on the map.

## Toolbar

You can select or deselect this option to show or hide the command buttons at the top of the screen.

## Status Bar

When selected, this option displays information in the bar at the bottom of the IntelliRoute window.

## Zoom In

Zooms in to the next scale level and increases the level of detail in the visible area of the map. IntelliRoute starts out at a scale most appropriate for the map currently displayed, or at the scale necessary to view your route if you choose to **Zoom Route**. There are nine zoom levels in IntelliRoute.

## Zoom Out

Zooms out to the next scale level and decreases the level of detail in the visible area of the map. IntelliRoute starts out at a scale most appropriate for the map currently displayed, or at the scale necessary to view your route if you choose to **Zoom Route**. There are nine zoom levels in IntelliRoute.

## Undo Zoom/Redo Zoom/Undo Scroll/Redo Scroll/Cannot Undo

The text of this command varies depending on the last command performed. If you have not yet calculated a route, scrolled the map, or used the **Zoom** command, the command text reads **Cannot Undo**. After the zoom function is performed, the command toggles to **Undo Zoom**; if you click the **Undo Zoom** command, the text of the command toggles to **Redo Zoom**. After you scroll the map using the scroll bars, the command toggles to **Undo Scroll**; if you click the **Undo Scroll** command, the text of the command toggles to **Redo Scroll**.

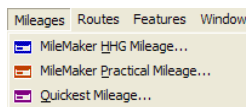
## Zoom Route

Zooms in or out to accommodate the entire generated route in the active window.

## Zoom Region

Displays the Zoom Region dialog box. On the left, the list box contains regions and states in alphabetical order (the states are listed following the regions). Scroll through the list box and click on your preferred state or region. The selected state or region is highlighted on the map. Click **OK** and the map in the active window zooms to your preferred region.

# Mileages Menu



## MileMaker HHG Mileage

Displays the MileMaker HHG/Practical Mileage Inquiry dialog box in which you can retrieve HHG mileages between any two points, with or without stop-offs, over truck-usable roads based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG).

All MileMaker HHG Mileage inquiries give you HHG Tariff Mileages, which are used as a standard for freight rating and auditing. IntelliRoute incorporates all of the complex HHG rules that affect mileage determination, and uses only those highways, bridges, and ferries designated as “truck-authorized” by the HHG mileage guide.

## MileMaker Practical Mileage

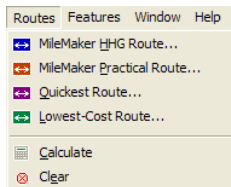
Displays the MileMaker HHG/Practical Mileage Inquiry dialog box in which you can calculate the most time-efficient mileage between the locations entered using the same road network database as MileMaker HHG inquiries. These mileages are not calculated according to HHG tariff rules. IntelliRoute also displays the county where each location resides.

## Quickest Mileage

Displays the Quickest Mileage Inquiry dialog box in which you can calculate the fastest (shortest time) truck-usable mileage between two or more locations. The mileage is determined using the new IntelliRoute GPS-accurate road network and your general mileage and routing preferences. IntelliRoute also displays the county where each location resides.

IntelliRoute with MileMaker also incorporates additional information as specified (Truck-Type or hazardous materials) when determining the mileage for a Quickest Mileage Inquiry.

## Routes Menu



### MileMaker HHG Route

Displays the MileMaker HHG Route Inquiry dialog box in which you can retrieve the MileMaker HHG truck-usable route between any two (or more) locations. It produces a report based on the most current version (Release 19) of the Household Goods Mileage Guide (HHG). Route calculation results can be displayed by Audit, State Mileage Breakdown only, or Full. This routing option is determined by total distance on HHG roadways.

### MileMaker Practical Route

Displays the MileMaker Practical Route Inquiry dialog box in which you can retrieve a MileMaker Practical Route, the most time-efficient route, as well as the practical distance (miles or kilometers) traveled in each state between two (or more) locations.

MileMaker Practical Route inquiries provide detailed information on the most time-efficient route between the locations entered using the same road network database used for MileMaker HHG inquiries. **MileMaker Practical Routes are not calculated with HHG tariff rules.** Route calculation results can be displayed by MileMaker Practical Route only, State Mileage Breakdown only, or MileMaker Practical Route with State Mileage Breakdown.

### Quickest Route

Displays the Quickest Route Inquiry dialog box in which you can retrieve detailed information on the fastest (shortest time) truck-usable route between two (or more) locations. The route is determined using the new IntelliRoute GPS-accurate road network and your general routing preferences. Route calculation results can be displayed by Quickest Route only, State Mileage Breakdown only, or Quickest Route with State Mileage Breakdown.

### Lowest-Cost Route

Displays the Lowest-Cost Route Inquiry dialog box in which you can retrieve detailed information on the lowest-cost, truck-usable route between any two (or more) locations. Cost is calculated using cost of time, fuel cost per mile/km, maintenance cost per mile/km, and toll road cost.

The route is determined using the new IntelliRoute GPS-accurate road network and your general routing preferences. Route calculation results can be displayed by Lowest-Cost Route only, State Mileage Breakdown only, or Lowest-Cost Route with State Mileage Breakdown.

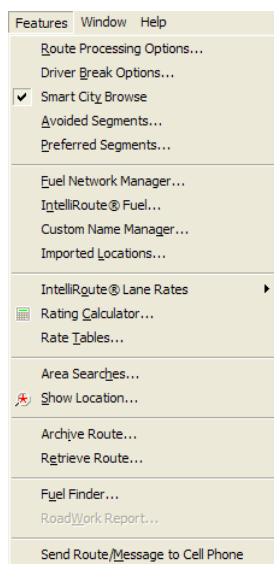
### Calculate

Calculates a Quickest Route Inquiry using the origin, via points, and destination entered on the map. Or, calculates the Quickest route using the settings from the most recently entered Quickest or Lowest-Cost route. IntelliRoute deducts transactions from the total each time you click **Calculate**.

### Clear

Erases the route currently displayed on the map and all route and mileage information.

## Features Menu



### Route Processing Options

Displays the Route Processing Options dialog box where you can specify options for route and mileage inquiries.

### Driver Break Options

Displays the Driver Break Options dialog box where you can specify driver breaks for hours of service, fuel, and food. When IntelliRoute calculates a route, it takes these breaks into account and adjusts the Estimated Time of Arrival accordingly.

### Smart City Browse

Allows you to select or deselect the Smart City Browse option.

### Avoided Segments

Displays the Avoided Segments dialog box and provides a list of the highway segments you have requested IntelliRoute to avoid. You can also reset avoided highway segments.

### Preferred Segments

Displays the Preferred Segments dialog box and provides a list of the highway segments you have requested IntelliRoute to use on a preferred basis. You can also reset preferred highway segments.

### Fuel Network Manager

Displays the Fuel Network Manager dialog box where you can add or delete locations to your customized fuel network.

### Custom Name Manager

Displays the Custom Name Manager dialog box where you can build and manage a group of saved location names. You can also edit or delete a custom named group of locations.

### IntelliRoute® Fuel

---

The IntelliRoute® Fuel feature is a separately purchasable option.

---

Displays the IntelliRoute® Fuel dialog box where you can get fuel-optimized trip planning via the IntelliRoute® Fuel online service. You must have a valid account with [www.FuelAdvice.com](http://www.FuelAdvice.com) before you can use the IntelliRoute® Fuel online service.

### Imported Locations

Displays the Imported Locations dialog box where you can identify a location that you might want to use as an origin, via point, or destination. You can also import locations from a formatted file.

### IntelliRoute® Lane Rates: Process Lane Rates

Displays the IntelliRoute® Lane Rates dialog box where you can get current market rate index information for a specific lane via the IntelliRoute® Lane Rates online service. You must have a valid account with [www.TruckLoadRate.com](http://www.TruckLoadRate.com) before you can use the IntelliRoute® Lane Rates online service.

### IntelliRoute® Lane Rates: Create Batch File

Displays the Create Lane Rates File dialog box, where you can create a file containing multiple IntelliRoute® Lane Rates inquiries for later processing. You must have a valid account with [www.TruckLoadRate.com](http://www.TruckLoadRate.com) before you can use the IntelliRoute® Lane Rates online service.

### Rating Calculator

Displays the Rating Calculator dialog box, which allows you to calculate rate quotes using a simple or advanced calculator.

### Rate Tables

Displays the Rate Tables dialog box. The Rate Tables feature allows you to identify several rating variables by mile, kilometer, or route. The Advanced Rating Calculator uses values you enter in the rate tables to develop a quick rate quote for a route. You can complete the tables that are relevant to your company.

### Area Searches

Displays the Area Searches dialog box where you can search for cities, imported locations, truck stops, and weigh stations within a radius of a location or along the route.

### Show Location

Quickly displays the location you select from within the IntelliRoute database.

### Archive Route

Displays the Route Archival dialog box. You can use this feature to save all information and default settings associated with a mileage or route inquiry.

### Retrieve Route

Displays the Route Retrieval dialog box. This feature enables you to search for saved routes. You can select a retrieved route and view, load, or delete it.

### Fuel Finder

Displays the Fuel Finder dialog box where you can view a list of fuel stops along the last route you calculated. The fuel stops displayed depend on the display settings in the Route Processing Options dialog box.

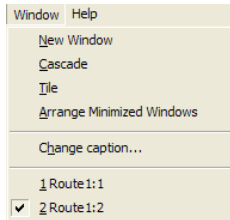
### RoadWork Report

Displays the RoadWork Overview dialog box where you can view a list of construction delays and closed roads included in the most recently calculated Quickest or Lowest-Cost Route Inquiry.

## Send Route/Message to Cell Phone

Displays the Send Route/Message to Cell Phone dialog box, where you can send a route or text message, as a short text message, to a cell phone you specify. Your route or text message will be sent as a series of 105 character length messages. Each message consists of a segment of your route or text message, and collectively the message(s) compose your entire route or text message.

## Window Menu



### New window

Opens a new view of the map in the active window.

### Cascade

Arranges windows by laying them one over another within the active window.

### Tile

Arranges windows by stacking them horizontally within the active window.

### Arranged minimized windows

Arranges the minimized windows at the bottom of the Main Application window.

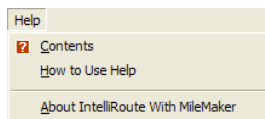
### Change caption

Displays the Change Caption dialog box in which you can change the caption of the active windows.

### 1 Route 1

Lists currently open windows. Your active window is designated with a check; click on another name to make another window your active window.

## Help Menu



### Contents

Displays the IntelliRoute Help system table of contents.

### How to Use Help

Displays instructions and information about the IntelliRoute Help system.

### About IntelliRoute with MileMaker

Displays IntelliRoute copyright and version information.

---

# Toolbar Commands



Like other Windows applications, the IntelliRoute toolbar consists of buttons that provide quick access to frequently used commands and options. IntelliRoute displays the name and function of a button when you point to it with the mouse. Click the button to execute the function.



## Print

Displays the standard Print dialog box, from which you can print a hard copy of the IntelliRoute® itinerary and/or map.



## HHG Mileage

Displays the MileMaker HHG/Practical Mileage Inquiry dialog box in which you can retrieve HHG mileages between any two points with or without stop-offs along the way. IntelliRoute® performs calculations between each pair of locations and generates the total mileage between the origin and destination.



## Practical Mileage

Displays the MileMaker HHG/Practical Mileage Inquiry dialog box, in which you can retrieve the most time- and fuel-efficient route. These mileages are not calculated according to HHG tariff rules. IntelliRoute® also displays the county where each location resides.



## Quickest Mileage

Displays the Quickest Mileage Inquiry dialog box in which you can retrieve the fastest route. These mileages are not calculated according to HHG tariff rules. IntelliRoute® also displays the county where each location resides.



## Practical Route

Displays the MileMaker Practical Route Inquiry dialog box in which you can retrieve a MileMaker Practical Route (distance in miles or kilometers), the most time- and fuel-efficient route, plus the practical distance (miles or kilometers) traveled in each state between two (or more) locations.



## Quickest Route

Displays the Quickest Route Inquiry dialog box in which you can retrieve detailed information on the fastest (shortest time) truck-usable route between two (or more) locations. The Quickest Route is determined by total time.



## Lowest-Cost Route

Displays the Lowest-Cost Route Inquiry dialog box in which you can retrieve detailed information on the Lowest-Cost truck-usable route between any two (or

more) locations. Cost is calculated using cost of time, fuel cost per mile/km, maintenance cost per mile/km, and toll road cost.



### Calculate

Processes the current inquiry. IntelliRoute® deducts transactions from the total each time you click **Calculate**.



### Clear

Erases the route currently displayed on the map and all route and mileage information.



### Send Rte/Msg

Displays the Send Route via SMS dialog box, where you can send your route as a short text message to a mobile phone you specify. Your route will be sent as a series of 120 character length messages. Each message consists of a segment of your route, and collectively the message(s) compose your entire route.



### Zoom In

Zooms in to the next scale level and increases the level of detail in the visible area of the map. IntelliRoute® starts out at a scale most appropriate for the map currently displayed, or at the scale necessary to view your route if you choose to **Zoom Route**. There are nine zoom levels in IntelliRoute®.



### Zoom Out

Zooms out to the next scale level and decreases the level of detail in the visible area of the map. IntelliRoute® starts out at a scale most appropriate for the map currently displayed, or at the scale necessary to view your route if you choose to **Zoom Route**. There are nine zoom levels in IntelliRoute®.



### Zoom Route

Zooms in or out to accommodate the entire generated route in the active window.



### Show Location

Displays the location you select from within the IntelliRoute® database.



### Batch Process

Displays the Batch Process dialog box, where you can process a batch input file and create an ASCII batch output file that you can use in other programs such as spreadsheets, word processors, or databases.



### Rating Calc

Displays the Rating Calculator dialog box, which allows you to calculate rate quotes using a simple or advanced calculator.



## RoadWork

recalculates the last Quickest or Lowest-Cost route taking into account construction delays and closed roads from the RoadWork database, when the Apply RoadWork To **All Quickest and Lowest-Cost Routes** option in the Mileage/Route Processing Options dialog box is not set.



## Topic Help

Activates context-sensitive Help and turns your cursor into a question mark. Move the question mark over an IntelliRoute menu item or toolbar button to display information from the Help system on that topic.

# ABBREVIATIONS



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## Appendix Contents

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---

# General Abbreviations

## General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| Academy        | ACAD                |
| Accounting     | ACCT                |
| Activity       | ACTY                |
| Administration | ADM                 |
| Agency         | AGCY                |
| Airport        | APT                 |
| Ammunition     | AMMO                |
| Annex          | ANX                 |
| Armament       | ARMT                |
| Army           | AR                  |
| Arsenal        | ASNL                |
| Artillery      | ARTY                |
| Automotive     | AUTO                |
| Auxiliary      | AUX                 |
| Aviation       | AV                  |
| Ballistics     | BAL                 |
| Barracks       | BKS                 |
| Base           | BS                  |
| Battalion      | BATL                |
| Bayou          | BYU                 |
| Beach          | BCH                 |
| Bend           | BND                 |
| Bluff          | BLF                 |
| Bluffs         | BLFS                |
| Borough        | BORO                |
| Bottom         | BTM                 |
| Bottoms        | BTMS                |
| Branch         | BRCH                |

### General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| Bridge         | BRDG                |
| Brook          | BRK                 |
| Building       | BLDG                |
| Camp           | CMP                 |
| Center         | CTR                 |
| Central        | CTRL                |
| Centre         | CTRE                |
| Chapel         | CHPL                |
| Chemical       | CHEM                |
| Christian      | CHR                 |
| Church         | CH                  |
| Circle         | CRC                 |
| City           | CY                  |
| Ciudad         | CD                  |
| Cliff          | CLF                 |
| Cliffs         | CLFS                |
| College        | CLG                 |
| Combined       | COMB                |
| Command        | CMD                 |
| Communications | COM                 |
| Community      | CMTY                |
| Company        | CPY                 |
| Construction   | CSTR                |
| Contract       | CONT                |
| Corner         | CNR                 |
| Corners        | CNRS                |
| County         | CTY                 |
| Court          | CRT                 |
| Creek          | CRK                 |
| Crossing       | XNG                 |
| Crossroad      | XRD                 |
| Crossroads     | XRDS                |

### General Abbreviations

| <b>Name</b>  | <b>Abbreviation</b> |
|--------------|---------------------|
| Dam          | DM                  |
| Defense      | DEF                 |
| Department   | DEPT                |
| Depot        | DPT                 |
| Detachment   | DTCH                |
| Development  | DEV                 |
| Directorate  | DIR                 |
| District     | DIST                |
| Division     | DIV                 |
| Dunes        | DNS                 |
| E.           | E                   |
| East         | E                   |
| Eastern      | EN                  |
| Education    | EDUC                |
| Electronics  | ELEC                |
| Element      | EL                  |
| Engineer     | EGR                 |
| Engineering  | ENG                 |
| Engineers    | EGRS                |
| Equipment    | EQPT                |
| Estacion     | ESTN                |
| Estate       | EST                 |
| Estates      | ESTS                |
| Experimental | EXP                 |
| Facility     | FACL                |
| Falls        | FLS                 |
| Farm         | FM                  |
| Farms        | FMS                 |
| Ferry        | FRY                 |
| Field        | FLD                 |
| Finance      | FIN                 |
| Flat         | FLT                 |

### General Abbreviations

| <b>Name</b>  | <b>Abbreviation</b> |
|--------------|---------------------|
| Flats        | FLTS                |
| Flight       | FLGT                |
| Ford         | FRD                 |
| Fork         | FK                  |
| Forks        | FKS                 |
| Fort         | FT                  |
| Freight      | FRT                 |
| Furnace      | FRN                 |
| Garden       | GDN                 |
| Gardens      | GDNS                |
| Gate         | GT                  |
| General      | GEN                 |
| Glen         | GLN                 |
| Glenn        | GLNN                |
| Government   | GOVT                |
| Grand        | GR                  |
| Great        | GRT                 |
| Ground       | GRD                 |
| Grounds      | GRDS                |
| Group        | GRP                 |
| Groves       | GRVS                |
| Harbor       | HBR                 |
| Headquarters | HQ                  |
| Heights      | HTS                 |
| Hill         | HL                  |
| Hills        | HLS                 |
| Home         | HM                  |
| Homes        | HMS                 |
| Hospital     | HOSP                |
| House        | HSE                 |
| Indian       | IND                 |
| Institute    | INST                |

### General Abbreviations

| <b>Name</b>   | <b>Abbreviation</b> |
|---------------|---------------------|
| International | INTL                |
| Island        | IS                  |
| Junction      | JCT                 |
| Laboratory    | LAB                 |
| Lake          | LK                  |
| Lakes         | LKS                 |
| Landing       | LDG                 |
| Left          | LF                  |
| Lick          | LCK                 |
| Little        | LTL                 |
| Location      | LOC                 |
| Logistics     | LOG                 |
| Lower         | LWR                 |
| Maintenance   | MANT                |
| Manor         | MNR                 |
| Marine        | MAR                 |
| Materials     | MTLS                |
| Meadow        | MDW                 |
| Meadows       | MDWS                |
| Medical       | MED                 |
| Metro         | MTRO                |
| Metropolitan  | MTRO                |
| Middle        | MDL                 |
| Mile          | MI                  |
| Military      | MIL                 |
| Mill          | ML                  |
| Mills         | MLS                 |
| Mines         | MNS                 |
| Missile       | MIS                 |
| Mound         | MND                 |
| Mounds        | MNDS                |
| Mount         | MT                  |

### General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| Mountain       | MTN                 |
| MT.            | MT                  |
| MTN.           | MTN                 |
| Municipal      | MUN                 |
| N.             | N                   |
| N.P.           | NP                  |
| Narrows        | NRWS                |
| National       | NATL                |
| Naval          | NAV                 |
| Neck           | NK                  |
| North          | N                   |
| Northeast      | NE                  |
| Northwest      | NW                  |
| Notre          | NR                  |
| Nuclear        | NUC                 |
| Ocean          | OC                  |
| Office         | OFC                 |
| Ordinance      | ORD                 |
| Organizational | ORG                 |
| Outlying       | OUT                 |
| Outport        | OPT                 |
| Park           | PK                  |
| Pass           | PS                  |
| Pathology      | PATH                |
| Personnel      | PER                 |
| Pictorial      | PICT                |
| Pines          | PNS                 |
| Place          | PL                  |
| Plains         | PLNS                |
| Plant          | PLT                 |
| Plantation     | PLTN                |
| Plaza          | PLZ                 |

### General Abbreviations

| <b>Name</b> | <b>Abbreviation</b> |
|-------------|---------------------|
| Point       | PT                  |
| Pointe      | PTE                 |
| Port        | PRT                 |
| Portage     | PRTG                |
| Preserve    | PSRV                |
| Presidio    | PRED                |
| Procurement | PROC                |
| Propulsion  | PROP                |
| Proving     | PRV                 |
| PT.         | PT                  |
| Publication | PUBL                |
| Quarry      | QRY                 |
| Range       | RGE                 |
| Rapids      | RPDS                |
| Recruiting  | RCTG                |
| Recruitment | RCMT                |
| Region      | REG                 |
| Regional    | REGL                |
| Research    | RES                 |
| Reservation | RSVN                |
| Reserve     | RSV                 |
| Ridge       | RDG                 |
| River       | RVR                 |
| Rivers      | RVRS                |
| Riviere     | RVRE                |
| Saint       | ST                  |
| Sainte      | STE                 |
| Santa       | SNTA                |
| School      | SCHL                |
| Science     | SCI                 |
| Seminary    | SEM                 |
| Services    | SERV                |

### General Abbreviations

| <b>Name</b>   | <b>Abbreviation</b> |
|---------------|---------------------|
| Settlement    | STL                 |
| Shipyards     | SHYD                |
| Shopping      | SHPG                |
| South         | S                   |
| Southern      | SN                  |
| Southwest     | SW                  |
| Special       | SPL                 |
| Spring        | SPR                 |
| Springs       | SPRS                |
| Squadron      | SQDN                |
| Square        | SQ                  |
| ST.           | ST                  |
| Stand         | STND                |
| Station       | STA                 |
| STE.          | STE                 |
| Stream        | STRM                |
| Submarine     | SUB                 |
| Supply        | SUPL                |
| Support       | SUP                 |
| System        | SYST                |
| Tactical      | TAC                 |
| Technological | TECL                |
| Technology    | TECH                |
| Terminal      | TRM                 |
| Terrace       | TRRC                |
| Territory     | TERR                |
| Theological   | THEL                |
| Theology      | THEO                |
| Topography    | TOPO                |
| Township      | TWP                 |
| Trace         | TRC                 |
| Truck         | TRK                 |

### General Abbreviations

| <b>Name</b>              | <b>Abbreviation</b> |
|--------------------------|---------------------|
| Training                 | TRNG                |
| Transportation           | TRNS                |
| U.S.                     | US                  |
| United States of America | US                  |
| University               | UNIV                |
| Upper                    | UPR                 |
| USA                      | US                  |
| Valle                    | VAL                 |
| Valley                   | VLY                 |
| View                     | VW                  |
| Villa                    | VLA                 |
| Village                  | VLG                 |
| Ville                    | VIL                 |
| Warehouse                | WHSE                |
| Warfare                  | WARF                |
| Water                    | WTR                 |
| Weapons                  | WPNS                |
| Well                     | WL                  |
| Wells                    | WLS                 |
| West                     | W                   |
| Western                  | WN                  |
| White                    | WHT                 |
| Works                    | WKS                 |
| Yard                     | YD                  |
| [ ]                      | [ ]                 |

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# State and Province Abbreviations

## United States

### United States State Abbreviations

| <b>Name</b>          | <b>Abbreviation</b> |
|----------------------|---------------------|
| Alabama              | AL                  |
| Alaska               | AK                  |
| Arizona              | AZ                  |
| Arkansas             | AR                  |
| California           | CA                  |
| Colorado             | CO                  |
| Connecticut          | CT                  |
| Delaware             | DE                  |
| District of Columbia | DC                  |
| Florida              | FL                  |
| Georgia              | GA                  |
| Hawaii               | HI                  |
| Idaho                | ID                  |
| Illinois             | IL                  |
| Indiana              | IN                  |
| Iowa                 | IA                  |
| Kansas               | KS                  |
| Kentucky             | KY                  |
| Louisiana            | LA                  |
| Maine                | ME                  |
| Maryland             | MD                  |
| Massachusetts        | MA                  |
| Michigan             | MI                  |
| Minnesota            | MN                  |
| Mississippi          | MS                  |
| Missouri             | MO                  |

### United States State Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| Montana        | MT                  |
| Nebraska       | NE                  |
| Nevada         | NV                  |
| New Hampshire  | NH                  |
| New Jersey     | NJ                  |
| New Mexico     | NM                  |
| New York       | NY                  |
| North Carolina | NC                  |
| North Dakota   | ND                  |
| Ohio           | OH                  |
| Oklahoma       | OK                  |
| Oregon         | OR                  |
| Pennsylvania   | PA                  |
| Puerto Rico    | PR                  |
| Rhode Island   | RI                  |
| South Carolina | SC                  |
| South Dakota   | SD                  |
| Tennessee      | TN                  |
| Texas          | TX                  |
| Utah           | UT                  |
| Vermont        | VT                  |
| Virginia       | VA                  |
| Washington     | WA                  |
| West Virginia  | WV                  |
| Wisconsin      | WI                  |
| Wyoming        | WY                  |

## Canadian Provinces

### Canadian Province Abbreviations

| <b>Name</b>               | <b>Abbreviation</b> |
|---------------------------|---------------------|
| Alberta                   | AB                  |
| British Columbia          | BC                  |
| Manitoba                  | MB                  |
| New Brunswick             | NB                  |
| Newfoundland and Labrador | NF/NL               |
| Nova Scotia               | NS                  |
| Northwest Territories     | NT                  |
| Nunavut Territory         | NU                  |
| Ontario                   | ON                  |
| Prince Edward Island      | PE                  |
| Quebec                    | QC                  |
| Saskatchewan              | SK                  |
| Yukon Territory           | YT                  |

## Mexican States

### Mexican States Abbreviations

| <b>Name</b>         | <b>Abbreviation</b> |
|---------------------|---------------------|
| Aguascalientes      | AG                  |
| Baja California     | BJ                  |
| Baja California Sur | BS                  |
| Campeche            | CP                  |
| Chiapas             | CH                  |
| Chihuahua           | CI                  |
| Coahuila de Zargosa | CU                  |
| Colima              | CL                  |
| Distrito Federal    | DF                  |
| Durango             | DG                  |
| Estado Mexico       | EM                  |
| Guanajuato          | GJ                  |
| Guerrero            | GR                  |
| Hidalgo             | HG                  |
| Jalisco             | JA                  |
| Michoacan           | MH                  |
| Morelos             | MR                  |
| Nayarit             | NA                  |
| Nuevo Leon          | NL                  |
| Oaxaca              | OA                  |
| Puebla              | PU                  |
| Quaretaro           | QA                  |
| Quintana Roo        | QR                  |
| San Luis Potosi     | SL                  |
| Sinaloa             | SI                  |
| Sonora              | SO                  |
| Tabasco             | TA                  |
| Tamaulipas          | TM                  |
| Tlaxcala            | TL                  |

### Mexican States Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| Veracruz Llave | VL                  |
| Yucatan        | YC                  |
| Zacatecas      | ZT                  |

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# Military Abbreviations

## Military Abbreviations

| <b>Name</b>                            | <b>Abbreviation</b> |
|--|---------------------|
| Air Force                              | AF                  |
| Air Force Base                         | AFB                 |
| Air Force Facility                     | AFF                 |
| Air Force Station                      | AFS                 |
| Air National Guard                     | ANG                 |
| Air National Guard Base                | ANGB                |
| Air Reserve Base                       | ARB                 |
| Air Reserve Station                    | ARS                 |
| Air Station                            | AS                  |
| Area Maintenance Support Activity      | AMSA                |
| Armed Forces                           | ARMF                |
| Army Air Field                         | AAF                 |
| Army Ammunition Activity               | AAA                 |
| Army Ammunition Plant                  | AAP                 |
| Army Aviation Support Facility         | AASF                |
| Army Depot                             | AD                  |
| Army Medical Center                    | AMC                 |
| Army National Guard                    | ARNG                |
| Army National Guard Training Center    | ANGTC               |
| Army National Guard Training Site      | ANGTS               |
| Coast Guard                            | CG                  |
| Coast Guard Air Station                | CGAS                |
| Coast Guard Aircraft and Supply Center | CGASC               |
| Coast Guard Base                       | CGB                 |
| Coast Guard District                   | CGD                 |
| Coast Guard Group                      | CGG                 |
| Coast Guard Integrated Support Command | CGISC               |
| Coast Guard Recruit Training Center    | CGRTC               |

## Military Abbreviations

| Name   | Abbreviation |
|--|--------------|
| Coast Guard Station                          | CGS          |
| Coast Guard Support Center                   | CGSC         |
| Coast Guard Training Center                  | CGTC         |
| Combat Communications Squadron               | CCS          |
| Combined Personal Property Shipping Office   | CPPSO        |
| Combined Support Maintenance Shop            | CSMS         |
| Defense Distribution Depot                   | DDD          |
| Defense Distribution Region West             | DDRW         |
| Defense Energy Office                        | DEO          |
| Defense Fuel Support Point                   | DFSP         |
| Defense Mapping Agency                       | DMA          |
| Defense Subsistence Office                   | DSO          |
| Directorate of Logistics                     | DOL          |
| Fighter Wing                                 | FW           |
| Fleet and Industrial Supply Center           | FISC         |
| Intra-Fleet Supply Support Operations Team   | ISSOT        |
| Joint Personal Property Shipping Office      | JPPSO        |
| Major Port Command (or, Medium Port Command) | MPC          |
| Marine Aircraft Group                        | MAG          |
| Marine Corps                                 | MC           |
| Marine Corps Air Facility                    | MCAF         |
| Marine Corps Air Station                     | MCAS         |
| Marine Corps Base                            | MCB          |
| Marine Corps District                        | MCD          |
| Marine Corps Logistics Base                  | MCLB         |
| Marine Corps Recruiting Depot                | MCRD         |
| Marine Corps Reserve Center                  | MCRC         |
| Marine Corps Reserve Training Center         | MCRTC        |
| Marine Ocean Terminal                        | MOT          |
| Military Traffic Management Command          | MTMC         |
| Mission Support Squadron                     | MSS          |
| Mobilization and Equipment Training Site     | MATES        |

### Military Abbreviations

| <b>Name</b>   | <b>Abbreviation</b> |
|---|---------------------|
| National Aeronautics Space Administration           | NASA                |
| National Naval Medical Center                       | NNMC                |
| Naval Air Engineering Center                        | NAEC                |
| Naval Air Engineering Station                       | NAES                |
| Naval Air Facility                                  | NAF                 |
| Naval Air Reserve                                   | NAR                 |
| Naval Air Station                                   | NAS                 |
| Naval Air Warfare Center                            | NAWC                |
| Naval Amphibious Base                               | NAB                 |
| Naval and Marine Corps Reserve Center               | NMCRC               |
| Naval Auxiliary Air Station                         | NAAS                |
| Naval Command Control and Ocean Surveillance Center | NCCOSC              |
| Naval Construction Battalion Center                 | NCBC                |
| Naval Education Training Center                     | NETC                |
| Naval Inventory Control Point                       | NICP                |
| Naval Ordnance Center                               | NOC                 |
| Naval Radio Station                                 | NRS                 |
| Naval Recruiting District                           | NRD                 |
| Naval Reserve Center                                | NRC                 |
| Naval Station                                       | NS                  |
| Naval Submarine Base                                | NSB                 |
| Naval Supply Center                                 | NSC                 |
| Naval Supply Corps School                           | NSCS                |
| Naval Supply Depot                                  | NSD                 |
| Naval Surface Weapons Center                        | NSWC                |
| Naval Training Center                               | NTC                 |
| Naval Training Station                              | NTS                 |
| Naval Undersea Warfare Center                       | NUWC                |
| Naval Underwater Systems Center                     | NUSC                |
| Naval Weapons Station                               | NWS                 |
| Regional Support Command                            | RESCOM              |

### Military Abbreviations

| <b>Name</b>                                       | <b>Abbreviation</b> |
|---|---------------------|
| Research & Development                            | R&D                 |
| Ship Conversion and Repair                        | SCR                 |
| Space Flight Center                               | SFC                 |
| Supervisor of Shipbuilding, Conversion and Repair | SSCR                |
| Tank Automotive Command                           | TACOM               |
| Training Center                                   | TC                  |
| Unit Training and Equipment Site                  | UTES                |
| United States Air Force                           | USAF                |
| United States Army Corps of Engineers             | USACE               |
| United States Army Reserve Center                 | USARC               |
| United States Navy                                | USN                 |
| United States Property and Fiscal Office          | USPFO               |



# BATCH FILE FORMATS



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## Description of All Request Types

Use the batch record formats in this section to interpret your output files or to create batch input files without using IntelliRoute.

| <b>Code</b> | <b>Inquiry Type</b>  |
|-------------|--|
| MI:         | MileMaker HHG Inquiry  |
| MD:         | Single Origin Multiple Destination Inquiry                     |
| HA:         | MileMaker HHGAudit Route Inquiry                               |
| HB:         | MileMaker HHG Full Route with State Mileage Breakdown          |
| HS:         | MileMaker HHG State Mileage Breakdown Only Inquiry             |
| PR:         | MileMaker Practical Route Only Inquiry                         |
| PS:         | MileMaker Practical State Mileage Breakdown Only Inquiry       |
| PB:         | MileMaker Practical Route with State Mileage Breakdown Inquiry |
| PM:         | MileMaker Practical Miles Only Inquiry                         |
| PD          | MileMaker Practical Origin to Multiple Destination Inquiry     |
| QR          | Quickest Route Only Inquiry                                    |
| QS          | Quickest Route State Mileage Breakdown Only Inquiry            |
| QB          | Quickest Route with State Mileage Breakdown Inquiry            |
| QM          | Quickest Mileage Inquiry                                       |
| QD          | Quickest Origin to Multiple Destination Inquiry                |
| LR          | Lowest-Cost Route Only Inquiry                                 |
| LS          | Lowest-Cost Route State Mileage Breakdown Only Inquiry         |
| LB          | Lowest-Cost Route with State Mileage Breakdown Inquiry         |

## Request File Record Types

The request file contains eight types of 24-byte records: the Header record, the Optimization record, the Origin record, the Via record, the Destination record, the Rate record (Type 1), the Rate record (Type 2), and the HazMat record.

Record sequence for a request

| <b>Record Name</b>   | <b>Characters in Cols 1-2</b> | <b>Explanation</b>   |
|----------------------|-------------------------------|--|
| Header record        | HR                            | This record contains the type of request. In addition, it can contain user specified information that will be passed back to the output file.  |
| Optimization record  | OP                            | This record tells IntelliRoute to optimize the request. This record, if present, follows the Header Record.  |
| Origin record        | OR                            | This record contains the starting point of the trip.   |
| Via record           | VI                            | This record contains the intermediate stop-off point (optional).   |
| Destination record   | DT                            | This record contains the final stopping point of the trip.   |
| Rate record (Type 1) | R1                            | This record contains the rate information for rate per mile, flat fee, and rate unit. If this record is present, it follows the Optimization record (OP). <b>Note:</b> if either Rate record (Type 1) or Rate record (Type 2) is required, both Rate record types must be present. |
| Rate record (Type 2) | R2                            | This record contains the information about the surcharge. <b>Note:</b> if either Rate record (Type 1) or Rate record (Type 2) is required, both Rate record types must be present.   |
| HazMat record        | HZ                            | This record contains the hazardous material flags. If this record is present, it follows the Rate record (Type 2).   |

## Header Record

The Header Record is used to tell IntelliRoute the type of request being sent. In addition, the optional user specified information can also be used to separate requests and specify information supplied by the user. For example, if you wish to keep a trip number, driver number, or bill of lading number attached to the request, simply put this information into columns 7-24 of the Header Record. **All non-occupied positions in all fields should contain spaces.** If the entire user specified information is not used, the remainder of the field must contain spaces.

### Record Size: 24 bytes

| Cols.  | Number of Characters | Sample Content | Explanation   |
|--------|----------------------|----------------|---|
| 1 - 2  | 2                    | HR             | This field contains "HR" to indicate that this is a Header Record.  |
| 3 - 4  | 2                    | MI             | Type of request. One of the following list: MI, MD, HA, HS, HB, PR, PS, PM, PB, PD, QR, QS, QB, QM, QD, LR, LS, or LB.  |
| 5      | 1                    | M              | This field contains an indicator to distinguish between distance in miles or kilometers. If the indicator is "M" or the field is blank, the distance is returned in miles. If the indicator is "K", the distance is in kilometers. Note that kilometer requests are valid for MileMaker Practical Route, Quickest Route, and Lowest-Cost Route options. |
| 6      | 1                    | Space          |   |
| 7 - 24 | 18                   | Info.          | User supplied information.  |

## Optimization Record

This record tells IntelliRoute to optimize the request. This record, if present, follows the Header Record.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | OP                    | This field contains “OP” to indicate that this is an Optimization Record.   |
| 3 - 4        | 2                           | 05                    | This field indicates what the destination will be. In this example, the 5 <sup>th</sup> record will be the destination. If there are spaces in this field, the program picks the destination. |
| 5 - 24       | 20                          | Spaces                |   |

## Origin Record

The Origin Record indicates the starting point of the trip.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 2        | 2                           | OR                    | The "OR" indicates an Origin record.   |
| 3 - 20       | 18                          | BARRINGTON            | City name, SPLC, ZIP Code, junction, or latitude/longitude. If this is an SPLC, the ZIP Code and Latitude/Longitude fields contain spaces.               |
| 21 - 22      | 2                           | LA                    | County abbreviation. Field contains spaces if a county is not needed. The county code is not needed if an SPLC, ZIP Code, or latitude/longitude is used. |
| 23 - 24      | 2                           | IL                    | State abbreviation. The state code is not needed if an SPLC, ZIP Code, or latitude/longitude is used.  |

## Via Record

The Via Record is optional. It is used to indicate a stop-off point in the route. Up to 26 records may be contained in a request record. In this example, the via point is Chicago, IL.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | VI                    | The "VI" indicates that this is a Via record.   |
| 3 - 20       | 18                          | CHICAGO               | City name, SPLC, ZIP Code, junction, or latitude/longitude.   |
| 21 - 22      | 2                           | LA                    | County abbreviation. The county name is not needed if an SPLC, ZIP Code, or latitude/longitude is used. |
| 23 - 24      | 2                           | IL                    | State abbreviation. The state code is not needed for an SPLC, ZIP Code, or latitude/longitude.          |

### Destination Record

The Destination Record indicates the destination or final stopping point. In this example, the destination is Boston, MA. Note that the last city's request record must be a Destination Record.

#### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 2        | 2                           | DT                    | The "DT" indicates that this is a Destination Record.                  |
| 3 - 20       | 18                          | BOSTON                | City name, SPLC, ZIP Code, junction, or latitude/longitude.            |
| 21 - 22      | 2                           |                       | County name abbreviated. It contains spaces if a county is not needed. |
| 23 - 24      | 2                           | MA                    | State name abbreviated.  |

### Rate Record (Type 1)

The Rate record (Type 1) indicates the rates that should be applied to the calculated route. This record is optional. Only one record of this type may be present in the route. If this record is present then a Type 2 Rate record must also be present. In the following example the rate per mile is set to \$19.99 and the flat fee is set to \$25.55.

#### Record Size: 24 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | R1             | This field contains "R1" indicating that this is a Rate record (Type 1).   |
| 3 - 10  | 8                    | 19.99          | This is the rate per mile. It should contain spaces if rate per mile is not needed. The decimal point is counted as part of the field. The maximum allowed value is 99999.99. Negative numbers are not allowed. The number is left aligned. The minimum value is 0.00. |
| 11 - 18 | 8                    | 25.55          | This is the flat fee. It should contain spaces if the flat fee is not needed. The decimal point is counted as part of the field. The maximum allowed value is 99999.99. Negative numbers are not allowed. The number is left aligned. The minimum value is 0.00.       |
| 19 - 24 | 6                    | Spaces         |  |

### Rate Record (Type 2)

The Rate record (Type 2) indicates the surcharge rate that should be applied to the calculated route. This record is optional. Only one record of this type may be present in the route. If the Type 1 Rate record is present then this record must also be present. In the following example the surcharge is set to \$200.58.

#### Record Size: 24 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | R2             | This field contains "R2" indicating that this is a Rate record (Type 2).   |
| 3 - 11  | 8                    | 200.58         | This is the surcharge. It should contain spaces if rate per mile is not needed. The decimal point is counted as part of the field. The maximum allowed value is 99999.99. Negative numbers are not allowed. The number is left aligned. The minimum value is 0.00. |
| 12 - 24 | 14                   | Spaces         |  |

## Hazardous Material Record

The Hazardous Material record indicates the hazardous material flags that should be used while calculating the route. This record is optional. The values of the flags must be either “1” or “0”. Any other value for a flag may generate unpredictable results. Each flag occupies a position in the Hazardous Material field of the record as shown below:

| Position | Flag description      |
|----------|-----------------------|
| 1        | HazMat 1: Explosives  |
| 2        | HazMat 2: Gas         |
| 3        | HazMat 3: Flammables  |
| 4        | HazMat 4: Combustible |
| 5        | HazMat 5: Organic     |
| 6        | HazMat 6: Poison      |
| 7        | HazMat 7: Radioactive |
| 8        | HazMat 8: Corrosive   |
| 9        | HazMat 9: Other       |
| 10       | HazMat 10: Inhalants  |

In addition to these hazardous materials flags, the record also supports HazMat 0: All HazMats.

### Record Size: 24 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | HZ             | This field contains “HZ” indicating that this is a Hazardous Materials record.   |
| 3 - 4   | 2                    | 00             | Indicates the route type. A value of “00” indicates the route is the Quickest/Lowest-Cost route type and will use the Hazardous Material field to indicate which flags are active. A value of “01” indicates the route is the MileMaker HHG/Practical route type and will use HazMat 0: All HazMats, ignoring any value in the Hazardous Materials field.  |
| 5 - 14  | 10                   | 1010110101     | Hazardous Materials field. Each character in the field corresponds to a Hazardous Material flag. The value for each type must be either ‘1’ (used) or ‘0’ (not used). Any other value for a type may produce unpredictable results. If the route type is MileMaker HHG/Practical, then the type flags should all be set to “0” but this field will be ignored regardless of the value of any of the flags. |
| 15 - 24 | 10                   | Spaces         |  |

## Custom Name Manager

You can include locations grouped by the Custom Name Manager in your Request file. You must, however, specify the record type of the location as an Origin, Via, or Destination record. (Refer to Description of All Request Types) For locations that are specified as Origin (OR) records, IntelliRoute defines the first location as the origin and subsequent locations as Via (VI) records. For locations specified as Destination (DT) records, IntelliRoute defines the last location as the destination and preceding locations as Via (VI). The total number of names in a Custom Name Manager group cannot exceed 50. The total number of names in a request cannot exceed 500.

Remember that a point-specific Error record contained in the Output file refers to the line number where the error occurred. This includes locations contained in a Custom Name Manager group.

## The Output File Structure

The Output file contains nine types of 100-byte records: Header record, Mileage Inquiry record, Via Inquiry record, Detailed Route record, State Mileage Breakdown record, Error record, Last record, Rate record, and Optimization record.

Record Sequence for an Output File:

| <b>Record Name</b>      | <b>Characters in Cols 1-2</b> | <b>Explanation</b>  |
|-------------------------|-------------------------------|---|
| Header                  | HR                            | This record contains the type of request. It can also contain user information that is transferred back to the host.  |
| Optimization            | OP                            | This record indicates that optimization was applied while calculating the route.  |
| Mileage Inquiry         | MI                            | This record contains the origin and destination cities. It also contains the total toll, total non-toll, total mileage, and toll costs between the origin and destination cities. |
| Via Inquiry             | VI                            | This record contains the intermediate stop-off point and the mileage from the previous point to this stop-off point.  |
| Detailed Route          | DR                            | This record contains the detailed information on any given segment of a trip.   |
| State Mileage Breakdown | SM                            | This record contains the state codes, total toll, non-toll, and total mileage per state along a route.  |
| Error                   | ER                            | This record may contain from 1-13 error codes if a request cannot be completed.   |
| Rate                    | RC                            | This record contains the calculated rate if the input file contains correct R1 and R2 records.  |
| Detailed Mileage        | DM                            | This record provides information for Practical and Quickest mileage reports.  |
| Truck Stop Record       | TS                            | This record provides truck stop information.  |
| Construction Record     | CN                            | This record provides construction information.  |
| Breaks Record           | BK                            | This record provides driver break information.  |
| Last                    | LR                            | This record indicates the end of the output records for a given request. It may be followed by HZ indicating the Hazardous Material network was used.                             |

## Header Record

The Header Record returns the Output Record type, the request type, the mileage indicator, and the optional user specified information.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | HR                    | The Output Record type “HR” indicates that this is a Header Record.   |
| 3 - 4        | 2                           | MI                    | Type of request. One of the following list: MI, MD, HA, HS, HB, PR, PS, PB, PM, PD, QR, QS, QB, QM, QD, LR, LS, or LB.  |
| 5            | 1                           | M                     | This field contains an indicator to distinguish between distance in miles or kilometers. If the indicator is “M” or the field is blank, the distance is returned in miles. If the indicator is “K”, the distance is returned in kilometers. Kilometer request are only available for MileMaker Practical Route options. |
| 6            | 1                           | Space                 |   |
| 7 - 27       | 20                          | Info.                 | User supplied information.  |
| 28 - 100     | 74                          | Spaces                |   |

## Optimization Record

This record follows the Header Record if optimization was applied to an inquiry.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | OP                    | The Output Record type "OP" indicates that this is a Optimization Record. |
| 3 - 100      | 98                          | Spaces                |   |

## Mileage Inquiry Record

Single Origin Multiple Destination Inquiries (MD) will contain multiple records.

### Record Size: 100 bytes

| Cols.    | Number of Characters | Sample Content | Explanation   |
|----------|----------------------|----------------|---|
| 1 - 2    | 2                    | MI             | The Output Record type "MI" indicates that this is a Mileage Inquiry Record.  |
| 3 - 20   | 18                   | BARRINGTON     | Origin city.  |
| 21 - 22  | 2                    | LA             | Origin county. This field will contain spaces if a county code is not needed.   |
| 23 - 24  | 2                    | IL             | Origin state.   |
| 25 - 42  | 18                   | CHICAGO        | Destination city.   |
| 43 - 44  | 2                    |                | Destination county. This field will contain spaces if a county code is not needed.  |
| 45 - 46  | 2                    | IL             | Destination state.  |
| 47-56    | 10                   | 0000000018     | Total mileage between origin and destination points.  |
| 57-66    | 10                   | 0000000005     | Total toll miles or kilometers between origin and destination points. This field will contain zeros if the request type is MI, MD, or HA. |
| 67-76    | 10                   | 0000000013     | Total non-toll miles or kilometers between origin and destination points. This field will contain zeros for request types MI, MD, or HA.  |
| 77-86    | 10                   | 0000000.00     | Toll costs for the calculated route. This field will contain zeros wherever toll costs are not applied                                    |
| 87 - 100 | 14                   | Spaces         |   |

## Via Inquiry Record

The Via Inquiry Record contains the name of an intermediate stop-off point, as well as the mileage from the previous point (either the origin or the previous stop-off point) to this stop-off point. In this example, the Via city is New York, NY. This type of record will only be returned for an MileMaker HHG Mileage Inquiry (MI).

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 2        | 2                           | VI                    | The Output Record type "VI" indicates that this is a Via Inquiry Record.             |
| 3 - 20       | 18                          | NEW YORK              | Via city name.   |
| 21 - 22      | 2                           | Spaces                | Via city county name. This field will contain spaces if a county code is not needed. |
| 23 - 24      | 2                           | NY                    | Via state name (abbreviated).  |
| 25 - 34      | 10                          | 0000000898            | Mileage from previous via city or origin city.                                       |
| 35 - 100     | 66                          | Spaces                |  |

## Detailed Route Record

The Detailed Route Record contains the detailed route information for a single segment of a route. This type of record will be returned for the following request inquiries: MileMaker HHG Audit Route (HA), MileMaker HHG Full Route with State Mileage Breakdown (HB), MileMaker Practical Route Only (PR), and MileMaker Practical Route with State Mileage Breakdown (PB). The following is an example of a segment of an Output record.

### Record Size: 100 bytes

| Cols.    | Number of Characters | Sample Content | Explanation  |
|----------|----------------------|----------------|--|
| 1 - 2    | 2                    | DR             | The Output Record type “DR” indicates that this is a Detailed Route Record.  |
| 3 - 19   | 17                   | I 90           | This contains the highway segment’s name.  |
| 20 - 21  | 2                    | SE             | Direction of travel on the highway segment.  |
| 22 - 31  | 10                   | 0000000290     | Miles or kilometers traveled on the highway segment.   |
| 32 -60   | 29                   | CHICAGO,IL     | End location on the highway segment.   |
| 61 - 70  | 10                   | 08:00          | Total accumulated time to the end of the highway segment from the origin city. This field contains spaces for all MileMaker HHG inquiries. MileMaker HHG inquiries are strictly based on mileages. |
| 71 - 80  | 10                   | 0000000450     | Total accumulated miles or kilometers to the end of the highway segment from the origin city.  |
| 81 - 88  | 8                    | TB             | Highway notes such as MileMaker HHG INDEX mileage, toll roads (TL), toll booths (TB), ferries (FY), via (VIA), etc.  |
| 89 - 100 | 12                   | Spaces         |  |

## State Mileage Breakdown Record

This State Mileage Breakdown Record contains state codes in alphabetical order and the total mileage for each state along the route. This type of record will only be sent for the following request inquiries: MileMaker HHG State Mileage Breakdown Only (HS), MileMaker HHG Full Route with State Mileage Breakdown (HB), MileMaker Practical State Mileage Breakdown Only (PS), and MileMaker Practical Route with State Mileage Breakdown (PB). In this example, the origin is Jackson, MS, and the destination is Charleston, SC.

### Record Size: 100 bytes

| Cols.    | Number of Characters | Sample Content | Explanation  |
|----------|----------------------|----------------|--|
| 1 - 2    | 2                    | SM             | The Output Record type "SM" indicates that this is a State Mileage Breakdown Record. |
| 3 - 4    | 2                    | AL             | State code for first state alphabetically in the route.                              |
| 5 - 14   | 10                   | 000217         | Total miles or kilometers for the first state.                                       |
| 15 - 24  | 10                   | 00000.0        | Total toll miles or kilometers for the first state.                                  |
| 25 - 34  | 10                   | 00217.0        | Total non-toll miles or kilometers for the first state.                              |
| 35 - 44  | 10                   | 0.00           | Toll costs for that state.   |
| 45 - 46  | 2                    | GA             | State code for the second state alphabetically in the route.                         |
| 47 - 56  | 10                   | 00275          | Total miles or kilometers for the second state.                                      |
| 57 - 66  | 10                   | 00000.0        | Total toll miles or kilometers for the second state.                                 |
| 67 - 76  | 10                   | 00275.0        | Total non-toll miles or kilometers for the second state.                             |
| 77 - 86  | 10                   | 0.00           | Toll costs for that state.   |
| 87 - 100 | 14                   | Spaces         |  |

If the route travels through more than two states, the Output Records will contain as many State Mileage Breakdown Records as necessary to show all mileage in all states.

## Error Record

The Error Record is sent when an error occurs for the current inquiry. Each Error Record may contain up to 19 errors. **If a request contains fewer than 19 errors, the remaining error code fields will contain spaces.**

### Record Size: 100 bytes

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 2   | 2                    | ER             | The Output Record type "ER" indicates that this is an Error Record.  |
| 3 - 4   | 2                    | 02             | A number corresponding to a set of possible error codes. See the section on Error Codes for more information. In this example, the error code 02 indicates that the location could not be found. If no error exists, this field will contain spaces. |
| 5 - 6   | 2                    | 17             | This field indicates the line number where the error occurred. If this is a general error message however, the field will contain 00 (zeros). If no error exists, this field will contain spaces.  |
| 7       | 1                    | Space          |  |
| 8 - 9   | 2                    | 08             | Error code 08.   |
| 10 - 11 | 2                    | 00             | General error code 00.   |
| 12      | 1                    | Space          |  |
| 13 - 14 | 2                    | 04             | Error code 04.   |
| 15 - 16 | 2                    | 14             | The error occurred on line 14.   |
| 17      | 1                    | Space          |  |
| 18 - 19 | 2                    | 09             | Error code 09.   |
| 20 - 21 | 2                    | 00             | General error code 00.   |
| 22      | 1                    | Space          |  |
| 23 - 24 | 2                    | 03             | Error code 03.   |
| 25 - 26 | 2                    | 19             | The error occurred on line 19.   |
| 27      | 1                    | Space          |  |
| 28 - 29 | 2                    | 02             | Error code 02.   |
| 30 - 31 | 2                    | 26             | The error occurred on line 26.   |
| 32      | 1                    | Space          |  |
| 33 - 34 | 2                    | 11             | Error code 11.   |
| 35 - 36 | 2                    | 00             | General error code 00.   |
| 37      | 1                    | Space          |  |

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>                |
|--------------|-----------------------------|-----------------------|-----------------------------------|
| 38 - 39      | 2                           | 01                    | Error code 01.                    |
| 40 - 41      | 2                           | 28                    | The error occurred on line 28.    |
| 42           | 1                           | Space                 |                                   |
| 43 - 44      | 2                           | Spaces                | Error code or space.              |
| 45 - 46      | 2                           | Spaces                | Line number where error occurred. |
| 47           | 1                           | Space                 |                                   |
| 48 - 49      | 2                           | Spaces                | Error code or space.              |
| 50 - 51      | 2                           | Spaces                | Line number where error occurred. |
| 52           | 1                           | Space                 |                                   |
| 53 - 54      | 2                           | Spaces                | Error code or space.              |
| 55 - 56      | 2                           | Spaces                | Line number where error occurred. |
| 57           | 1                           | Space                 |                                   |
| 58 - 59      | 2                           | Spaces                | Error code or space.              |
| 60 - 61      | 2                           | Spaces                | Line number where error occurred. |
| 62           | 1                           | Space                 |                                   |
| 63 - 64      | 2                           | Spaces                | Error code or space.              |
| 65 - 66      | 2                           | Spaces                | Line number where error occurred. |
| 67           | 1                           | Space                 |                                   |
| 68 - 69      | 2                           | Spaces                | Error code or space.              |
| 70 - 71      | 2                           | Spaces                | Line number where error occurred. |
| 72           | 1                           | Space                 |                                   |
| 73 - 74      | 2                           | Spaces                | Error code or space.              |
| 75 - 76      | 2                           | Spaces                | Line number where error occurred. |
| 77           | 1                           | Space                 |                                   |
| 78 - 79      | 2                           | Spaces                | Error code or space.              |
| 80 - 81      | 2                           | Spaces                | Line number where error occurred. |
| 82           | 1                           | Space                 |                                   |
| 83 - 84      | 2                           | Spaces                | Error code or space.              |
| 85 - 86      | 2                           | Spaces                | Line number where error occurred. |
| 87           | 1                           | Space                 |                                   |
| 88 - 89      | 2                           | Spaces                | Error code or space.              |
| 90 - 91      | 2                           | Spaces                | Line number where error occurred. |
| 92           | 1                           | Space                 |                                   |
| 93 - 94      | 2                           | Spaces                | Error code or space.              |

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>                |
|--------------|-----------------------------|-----------------------|-----------------------------------|
| 95 - 96      | 2                           | Spaces                | Line number where error occurred. |
| 97 - 102     | 4                           | Spaces                |                                   |

## Rate Record

The Rate Record contains the calculated rate if the input file contains correct R1 and R2 Rate records.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 2        | 2                           | RC                    | The Output Record type "RC" indicates that this is a Rate Record.  |
| 3 - 10       | 8                           | 19.99                 | This is the rate per mile. It should contain spaces if rate per mile is not needed. The decimal point is counted as part of the field. The maximum allowed value is 99999.99. Negative numbers are not allowed. The number is left aligned. The minimum value is 0.00. |
| 11 - 100     | 90                          | Spaces                |  |

## Detailed Mileage Record

The Detailed Mileage Record contains information about Practical and Quickest mileage inquiry results.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | DM                    | The Output Record type "DM" indicates that this is a Detailed Mileage Record. |
| 3 - 20       | 18                          | New York              | City name.  |
| 21-22        | 2                           | Spaces                | County name, or spaces if the county name is not needed.                      |
| 23 - 24      | 2                           | NY                    | State.  |
| 25 - 34      | 10                          | 0000000898            | Mileage from the previous or origin city.                                     |
| 35 - 44      | 10                          | 20:10                 | The total accumulated time up to this point (hours:minutes).                  |
| 45 - 100     | 56                          | Spaces                |   |

## Truck Stop Record

The Truck Stop Record contains truck stop information.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | TS                    | The Output Record type "TS" indicates that this is a Truck Stop Record. |
| 3 - 17       | 15                          | I90                   | Highway information, or spaces if highway information is not present.   |
| 18 - 27      | 10                          | Exit 5                | Exit number, or spaces if the exit number is not present.               |
| 28 - 58      | 40                          | ABC Truck Stop        | Name of the truck stop.   |
| 59 - 60      | 2                           | IL                    | State.  |
| 61 - 100     | 40                          | Spaces                |   |

## Construction Record

The Construction Record contains RoadWork information.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b>   | <b>Explanation</b>  |
|--------------|-----------------------------|---|---|
| 1 - 2        | 2                           | CN  | The Output Record type “CN” indicates that this is a Construction Record. |
| 3 - 100      | 97                          | Road Construction between I80/294, IL and I80/S43, IL (12/1/98-4/30/99) | RoadWork information.   |

## Breaks Record

The Breaks Record contains information about driver breaks.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 2        | 2                           | BK                    | The Output Record type "BK" indicates that this is a driver Breaks Record. |
| 3 - 16       | 14                          | Food Break            | Type of break.   |
| 17 - 21      | 5                           | 1                     | Number of the break.   |
| 22           | 1                           | Space                 |  |
| 23-32        | 10                          | 1:00                  | Duration of the break (hours:minutes).                                     |
| 33-100       | 68                          | Spaces                |  |

## Last Record

The Last Record is the final record for a given request in the Output file. It is used to indicate the end of information for the request inquiry.

### Record Size: 100 bytes

| <b>Cols.</b>    | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|-----------------|-----------------------------|-----------------------|--|
| 1 - 2/1 - 4     | 2/4                         | LR                    | The Output Record type "LR" indicates that this is the Last Record.  |
|                 |                             | LRHZ                  | If the Hazardous Material network was used, the Output Record type expands to four characters to include HZ. |
| 3 - 100/5 - 100 | 96/98                       | Spaces                |  |

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## Output File Error Codes

The error codes supplied in the Output file are classified as two distinct types; the first type identifies errors with regard to a specific point and its location (line number) within an inquiry; the second type identifies general error messages pertaining to the entire inquiry. An incorrect spelling of a city name and the line number on which it occurred is an example of an error identified in the first category of error types, whereas an unavailable option request is an example of an error identified in the second category of error types.

The error code field is four characters in length; the first two characters are the error code; the last two characters designate the line number (location) where the error occurred.

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| <b>Error Codes</b> |                           |                |   |
|--------------------|---------------------------|----------------|---|
| <b>Error Code</b>  | <b>Error Message</b>      | <b>Example</b> | <b>Explanation of Example</b>   |
| 01                 | Invalid Request Type      | 0100           | The first two characters indicate an error code 01, "Invalid Request Type." The last two characters indicate a general error code 00.                 |
| 02                 | Location Not Found        | 0218           | The first two characters indicate an error code 02, "Location Not Found." The last two characters indicate that the error occurred on line 18.        |
| 03                 | State Not Found           | 0323           | The first two characters indicate an error code 03, "State Not Found." The last two characters indicate that the error occurred on line 23.           |
| 04                 | County Qualifier Required | 0417           | The first two characters indicate an error code 04, "County Qualifier Required." The last two characters indicate that the error occurred on line 17. |
| 05                 | Route Error               | 0500           | The first two characters indicate an error code 05, "Route Error." The last two characters indicate a general error code 00.                          |
| 06                 | Secondary Point Error     | 0600           | The first two characters indicate an error code 06, "Secondary Point Error." The last two characters indicate a general error code 00.                |

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| <b>Error Codes</b> |  |                |  |
|--------------------|--|----------------|--|
| <b>Error Code</b>  | <b>Error Message</b>   | <b>Example</b> | <b>Explanation of Example</b>  |
| 07                 | Calc Point Error   | 0700           | The first two characters indicate an error code 07, "Calc Point Error." The last two characters indicate a general error code 00.  |
| 08                 | Kilometers Not Available on HHG Inquiries                        | 0800           | The first two characters indicate an error code 08, "Kilometers Not Available on HHG Inquiries." The last two characters indicate a general error code 00.                                   |
| 10                 | Same Location on Consecutive Lines Is Invalid                    | 1014           | The first two characters indicate an error code 10, "Same Location on Consecutive Lines Is Invalid." The last two characters indicate that the error occurred on line 14.                    |
| 11                 | Invalid Character  | 1119           | The first two characters indicate an error code 11, "Invalid Character." The last two characters indicate that the error occurred on line 19.  |
| 12                 | Invalid Entry-Data Must Be a City/County/State, Junction or SPLC | 1211           | The first two characters indicate an error code 12, "Invalid Entry-Data Must Be a City/County/State, Junction or SPLC." The last two characters indicate that the error occurred on line 11. |
| 13                 | SPLC Not Found   | 1317           | The first two characters indicate an error code 13, "SPLC Not Found." The last two characters indicate that the error occurred on line 17.   |
| 14                 | Unable to Calc Correctly   | 1426           | The first two characters indicate an error code 14, "Unable to Calc Correctly." The last two characters indicate that the error occurred on line 26.   |
| 15                 | Bad Long/Lat   | 1500           | The first two characters indicate an error code 15, "Bad Long/Lat." The last two characters indicate a general error code 00.  |
| 16                 | Unexpected End of Batch File                                     | 1600           | The first two characters indicate an error code 16, "Unexpected End of Batch File." The last two characters indicate a general error code 00.  |

| <b>Error Codes</b> |  |                |  |
|--------------------|--|----------------|--|
| <b>Error Code</b>  | <b>Error Message</b>                                   | <b>Example</b> | <b>Explanation of Example</b>  |
| 17                 | Memory Limit Exceeded: Separate Route into Two Routes: | 1700           | The first two characters indicate an error code 17 “No Space in Memory For Data.” The last two characters indicate a general error code 00.                              |
| 18                 | One Origin and One Destination Are Required            | 1800           | The first two characters indicate an error code 18, “One Origin and One Destination Are Required.” The last two characters indicate a general error code 00.             |
| 19                 | Insufficient Memory for Route                          | 1900           | The first two characters indicate an error code 19, “Insufficient Memory for Route.” The last two characters indicate a general error code 00.                           |
| 20                 | Unable to Complete Route Error                         | 2000           | The first two characters indicate an error code 20 “Unable to Complete Route Error.” The last two characters indicate a general error code 00.                           |
| 21                 | Unable to Complete Route - Use HHG Mileage Option      | 2100           | The first two characters indicate an error code 21, “Unable to Complete Route - Use HHG Mileage Option.” The last two characters indicate a general error code 00.       |
| 22                 | Invalid Corporate Limit                                | 2212           | The first two characters indicate an error code 22, “Invalid Corporate Limit.” The last two characters indicate that the error occurred on line 12.                      |
| 23                 | Junction Not Valid for HHG                             | 2307           | The first two characters indicate an error code 23, “Junction Not Valid for HHG.” The last two characters indicate that the error occurred on line 7.                    |
| 24                 | Unable to Process SPLC - Contact Rand McNally          | 2403           | The first two characters indicate an error code 24, “Unable to Process SPLC - Contact Rand McNally.” The last two characters indicate that the error occurred on line 3. |
| 25                 | Option Not Available                                   | 2500           | The first two characters indicate an error code 25, “Option Not Available.” The last two characters indicate a general error code 00.                                    |

| <b>Error Codes</b> |  |                |   |
|--------------------|--|----------------|---|
| <b>Error Code</b>  | <b>Error Message</b>                         | <b>Example</b> | <b>Explanation of Example</b>   |
| 28                 | No More Than 500 Locations Can Be Entered    | 2800           | The first two characters indicate an error code 28, "No More Than 500 Locations Can Be Entered." The last two characters indicate a general error code 00.    |
| 29                 | Incorrect Record Type                        | 2900           | The first two characters indicate an error code 29, "Incorrect Record Type." The last two characters indicate a general error code 00.                        |
| 30                 | Renamed Location Not Found                   | 3012           | The first two characters indicate an error code 30, "Renamed Location Not Found." The last two characters indicate that the error occurred on line 12.        |
| 70                 | No More Than 50 Locations Can Be Optimized   | 7000           | The first two characters indicate an error code 70, "No More Than 50 Locations Can Be Optimized." The last two characters indicate a general error code 00.   |
| 71                 | Invalid Optimization Destination             | 7100           | The first two characters indicate an error code 71, "Invalid Optimization Destination." The last two characters indicate a general error code 00.             |
| 72                 | Optimizer Error                              | 7200           | The first two characters indicate an error code 72, "Optimizer Error." The last two characters indicate a general error code 00.                              |
| 73                 | Optimization Requires no Duplicate Locations | 7300           | The first two characters indicate an error code 73, "Optimization Requires no Duplicate Locations." The last two characters indicate a general error code 00. |
| 74                 | ZIP Code Unassigned by U.S. Post Office      | 7400           | The first two characters indicate an error code 74, "ZIP Code Unassigned by U.S. Post Office." The last two characters indicate a general error code 00.      |
| 79                 | Multiple Locations for ZIP Code              | 7903           | The first two characters indicate an error code 79, "Multiple Locations for ZIP Code." The last two characters indicate that the error occurred on line 3.    |

| <b>Error Codes</b> |  |                |   |
|--------------------|--|----------------|---|
| <b>Error Code</b>  | <b>Error Message</b>   | <b>Example</b> | <b>Explanation of Example</b>   |
| 80                 | Total Mileage Limit Exceeded: Separate into 2 Routes                                   | 8012           | The first two characters indicate an error code 80, "Total Mileage Limit Exceeded: Separate into 2 Routes." The last two characters indicate that the error occurred on line 12.                                  |
| 81                 | Total Kilometer Limit Exceeded: Separate into 2 Routes                                 | 8113           | The first two characters indicate an error code 81, "Total Kilometer Limit Exceeded: Separate into 2 Routes." The last two characters indicate that the error occurred on line 13.                                |
| 82                 | Latitudes and Longitudes Valid for MileMaker Practical, Quickest, and Lowest-Cost Only | 8204           | The first two characters indicate an error code 82, "Latitudes and Longitudes Valid for MileMaker Practical, Quickest, and Lowest-Cost Only." The last two characters indicate that the error occurred on line 4. |
| 83                 | Invalid Latitude and Longitude   | 8305           | The first two characters indicate an error code 83, "Invalid Latitude and Longitude." The last two characters indicate that the error occurred on line 5.   |
| 84                 | Imported Point Valid for MileMaker Practical, Quickest, and Lowest-Cost Only           | 8404           | The first two characters indicate an error code 84, "Imported Point Valid for MileMaker Practical, Quickest, and Lowest-Cost Only." The last two characters indicate that the error occurred on line 4.           |
| 85                 | Please lower cost settings for Lowest-Cost route                                       | 8504           | The first two characters indicate an error code 85, a Lowest-Cost route could not be completed because the cost setting were too high. The last two characters indicate that the error occurred on line 4.        |

# LAN INTERFACE



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## Overview of the LAN Interface

The Local Area Network (LAN) version of IntelliRoute with MileMaker and IntelliRoute with MileMaker lets multiple workstations on a LAN access the IntelliRoute program resident on the file server. In addition to program access, the LAN interface processes route requests submitted by non-IntelliRoute applications if the submitting application formats the request correctly. The submitting program can be a custom user application or any user with a text editor who can properly format a route request file in the Request directory.

### Request and Answer Directories

The LAN interface uses the Request directory as its input queue and the Answer directory as its output queue. You set up these directories when you install the LAN version of IntelliRoute Client users must have access to these directories so they can submit route requests and retrieve the results. When the LAN interface is running, it automatically processes any route requests placed in the Request directory and outputs results to the Answer directory.

### Request Formats

You can set the LAN version to process external route requests using either the MileMaker PC (**MMPC**) format or the **Windows** format.

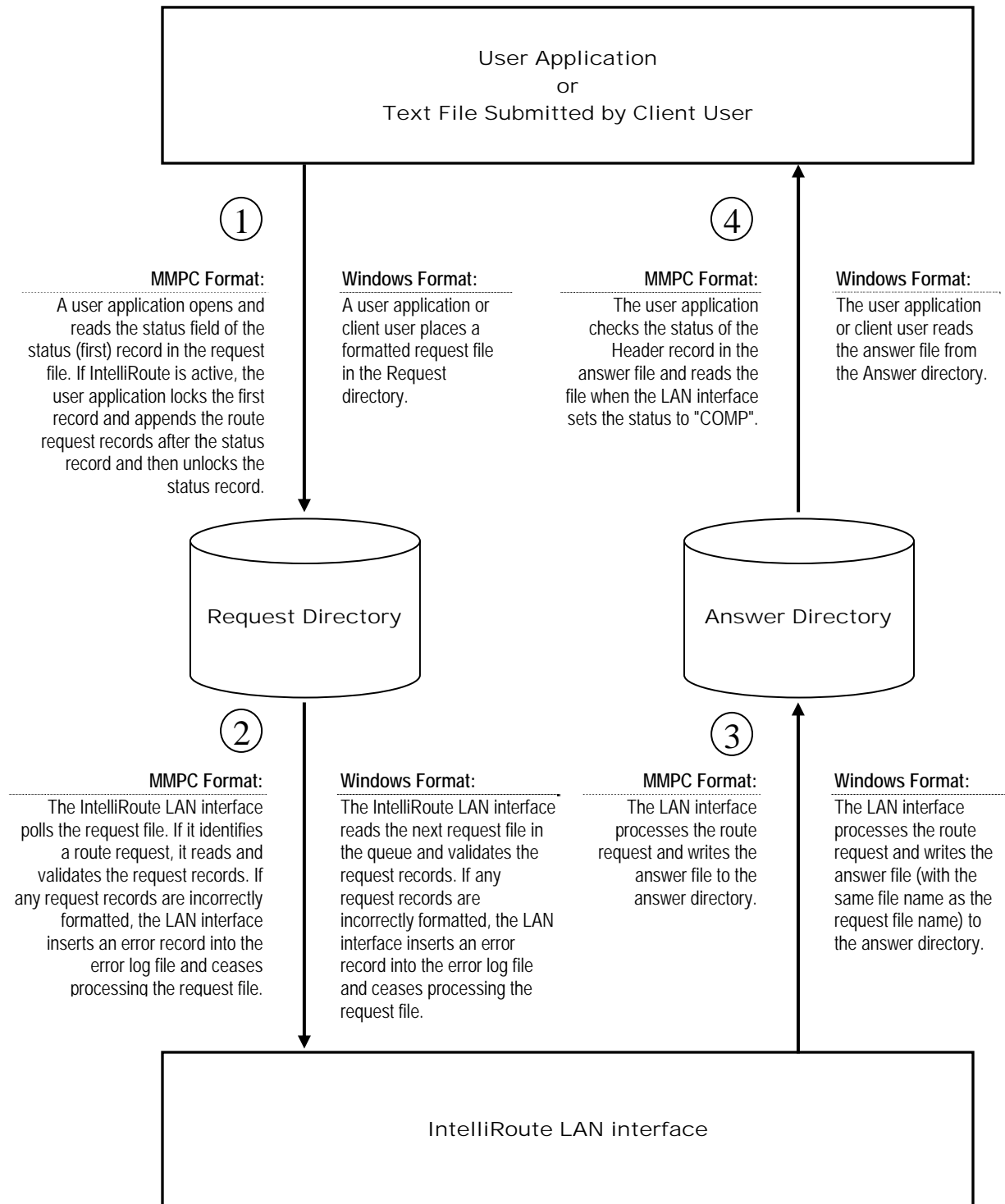
The **MMPC** format is backward compatible with previous (DOS) versions of the LAN interface. It uses a *single* request file with the name **INTERACT** that contains a 24 character status record followed by 24 character route request records. The LAN interface locks and reads the status record, reads the request records into its memory, then unlocks and releases the status record and processes the route request records. When it's finished processing the route request, IntelliRoute writes an output file with the results of the calculated route to the Answer directory, deletes the route request records.

The **Windows** format uses *separate* request files, each with a different route request. The LAN interface reads these files and processes them. After calculating a route from a request file, the LAN interface outputs the calculated route to an answer file in the Answer directory. The LAN interface names the answer file with the same name as the request file. After it creates the answer file, the LAN interface deletes the corresponding request file and processes the next request file (if any).

With either format, if the LAN interface encounters an error while processing a route request, it inserts an error record into the error log file located in the \IRDATA directory under the IntelliRoute application directory.

## Processing Flowchart

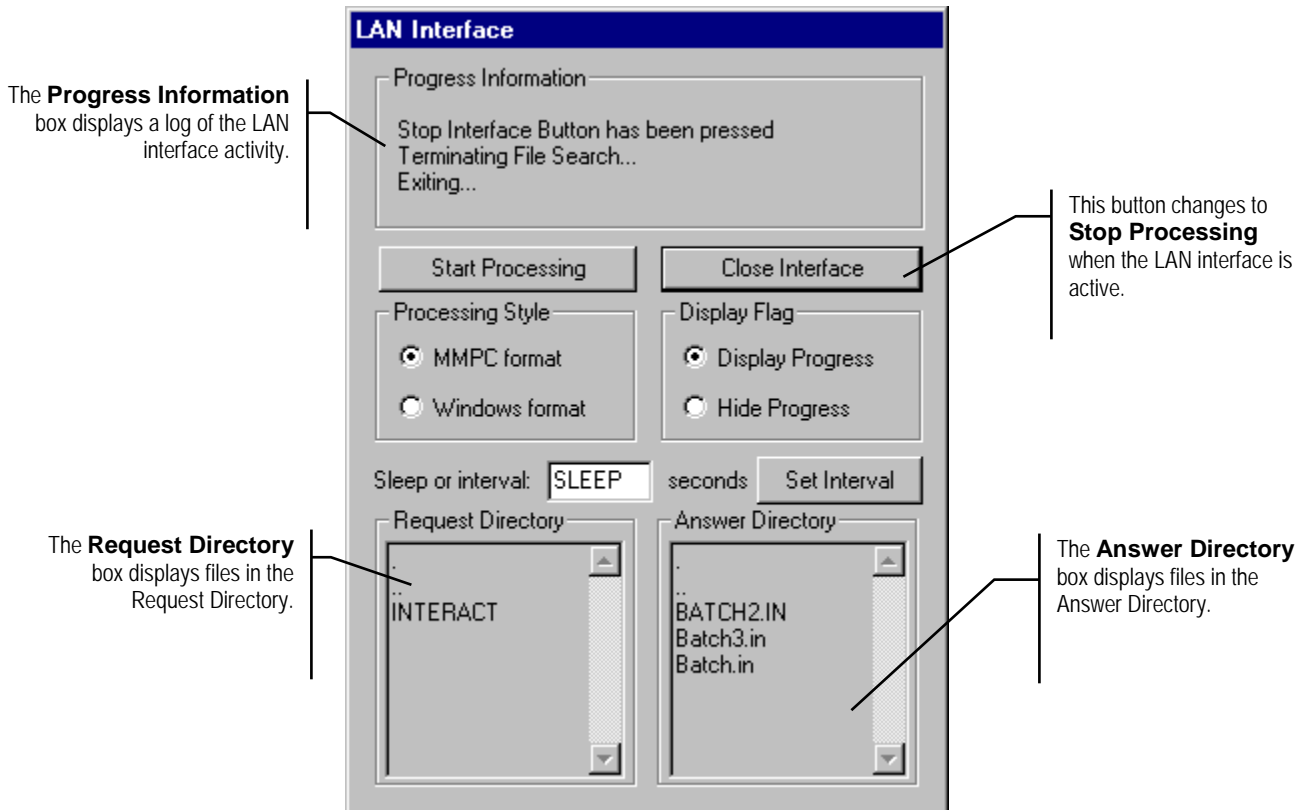
The flowchart below demonstrates how the LAN interface works with request and answer files depending on the request format type:



---

## Operating the LAN interface

IntelliRoute with MileMaker provides a dialog box that helps a LAN administrator operate the LAN interface. Only the LAN administrator can display the LAN interface dialog box shown below:



- ➔ To display the LAN interface dialog box:
  - On the **File** menu, then click **LAN interface**.



To operate the LAN interface dialog box:

---

| <b>To:</b>  | <b>Do This:</b>  |
|---|--|
| Activate the LAN interface so it starts polling the Request directory:                                      | Click <b>Start Processing</b> .  |
| Stop processing and discontinue polling the Request directory:  | Click <b>Stop Processing</b> .   |
| Use the MMPC format to process route requests:  | In the Processing Style box, click <b>MMPC format</b> .  |
| Use the Windows format to process route requests:   | In the Processing Style box, click <b>Windows format</b> .   |
| Display the progress icon while the LAN interface processes a request:                                      | In the Display Flag box, click <b>Display Progress</b> .   |
| Hide the progress icon while the LAN interface processes a request:   | In the Display Flag box, click <b>Hide Progress</b> .  |
| Set the interval at which the LAN interface polls the request directory to see if any requests are pending: | <p>In the <b>Sleep or interval</b> box:</p> <ul style="list-style-type: none"><li>Type <b>SLEEP</b> (upper or lower case; no trailing spaces) to activate the LAN interface only when it detects a request file, then click <b>Set Interval</b>. (This frees operating system processing time for other applications.)</li></ul> <p><i>Or</i></p> <ul style="list-style-type: none"><li>Type a number equal to the interval (in number of seconds) you want the LAN Interface to poll the request directory, then click <b>Set Interval</b>.</li></ul> |
| Close the LAN interface dialog box:   | Click <b>Close Interface</b> .   |

---

---

## Record formats

The LAN interface reads text based request files and writes text based answer files. Each file makes use of different formatted record types. Except for the status record and the header record, the record types are the same as those discussed in Appendix B on Batch File Formats.

---

Note: It is assumed that all record formats end with a Carriage Return (CR), Line Feed (LF).

---

## The Request File

The request file format for both the MMPC and Windows formats contains eight types of 24-byte records: the Header record, the Optimization record, the Origin record, the Via record, the Destination record, the Rate record (Type 1), the Rate record (Type 2), and the HazMat record. The MMPC format includes one additional record type: the status record.

Either individual users or user applications can write to request files. For MMPC format, individual users can append request records after the Status record if the file is not locked. User applications can query the Status record in MMPC format to check the LAN interface status, then append records to the request file. For Windows format, either users or user applications can create discrete request files and place them in the request directory.

Record sequence for a request

| <b>Record Name</b>      | <b>Characters in Cols 1-2</b> | <b>Explanation</b>   |
|-------------------------|-------------------------------|--|
| Status/ Synchronization | (not applicable)              | Appears only in MMPC formatted answer files. Does not apply to Windows formatted answer files.   |
| Header record           | HR                            | This record contains the type of request.  |
| Toll Cost record        | TC                            | This record triggers the creation of toll cost records in the answer directory for Quickest and Lowest-Cost requests.  |
| Optimization record     | OP                            | This record tells IntelliRoute to optimize the request. This record, if present, follows the Header Record.  |
| Origin record           | OR                            | This record contains the starting point of the trip.   |
| Via record              | VI                            | This record contains the intermediate stop-off point (optional).   |
| Destination record      | DT                            | This record contains the final stopping point of the trip.   |
| Rate record (Type 1)    | R1                            | This record contains the rate information for rate per mile, flat fee, and rate unit. If this record is present, it follows the Optimization record (OP). <b>Note:</b> if either Rate record (Type 1) or Rate record (Type 2) is required, both Rate record types must be present. |
| Rate record (Type 2)    | R2                            | This record contains the information about the surcharge. <b>Note:</b> if either Rate record (Type 1) or Rate record (Type 2) is required, both Rate record types must be present.   |
| HazMat record           | HZ                            | This record contains the hazardous material flags. If this record is present, it follows the Rate record (Type 2).   |

Note: Except for the Status record and the Header record, the record type formats for the request file are the same as those for the Batch feature in IntelliRoute. Please see Appendix B for more information on those record type formats. Only the Status and Header record type formats are detailed below.

## Status Record

For MMPC formatted files, the first record in the request file is reserved for the status record. The status record is used to synchronize access to the request file between the LAN interface and user applications by allowing only one entity to control the file at a time. A user or user application can lock and read the status record to determine if the LAN interface is active. At that point it appends a request record, then unlocks the record allowing other users or user applications the ability to append request records.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>   |
|--------------|-----------------------------|-----------------------|--|
| 1 - 4        | 4                           | ACTV                  | Indicates the status of the interface. Values are:<br><br><b>DOWN:</b> Indicates the LAN interface is not active. Users and user applications should not send any requests because they cannot be processed without the interface.<br><br><b>ACTV:</b> Indicates the LAN interface is active and any request may be submitted to the request file. The LAN interface immediately processes the requests and sends the results back to the answer file. |
| 5 - 14       | 10                          | 04/20/1999            | Indicates the date the interface status changed.   |
| 15 - 24      | 10                          | 20:10                 | The time the interface status changed (hours:minutes).   |

## Header Record

The Header record is used to tell the LAN interface the type of request being sent.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | HR                    | This field contains "HR" to indicate that this is a Header Record.  |
| 3 - 4        | 2                           | MI                    | Type of request. One of the following list: MI, MD, HA, HS, HB, PR, PS, PM, PB, PD, QR, QS, QB, QM, QD, LR, LS, or LB.  |
| 5            | 1                           | M                     | This field contains an indicator to distinguish between distance in miles or kilometers. If the indicator is "M" or the field is blank, the distance is returned in miles. If the indicator is "K", the distance is in kilometers. Note that kilometer requests are valid for MileMaker Practical Route, Quickest Route, and Lowest-Cost Route options. |
| 6            | 1                           | Space                 | Space   |
| 7 - 13       | 7                           | ANS_DIR               | Contains the subdirectory for all answer records related to this request. This directory is allocated by the LAN administrator.   |
| 14 - 21      | 8                           | ANS_FILE              | Contains the file name for the answer file in order to distinguish between or among multiple requests sent to the same answer directory.  |
| 22 - 24      | 3                           | EXT                   | The answer file name extension.   |

## Toll Cost Record

The Toll Cost record is used to tell the LAN interface the type of request being sent.

### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | TC                    | This field contains "TC" to indicate that this is a Toll Cost Record. |
| 3 - 24       | 22                          | Space                 | Space   |

## The Answer File

Each user or user application retrieves the results of a calculated route request from the answer directory. With MMPC format, the LAN interface creates an answer file with the name specified in the Header record. With Windows format, the LAN interface creates an answer file with the same file name as the request file.

The answer file format for both the MMPC and Windows formats contains nine types of 100-byte records: Header record, Mileage Inquiry record, Via Inquiry record, Detailed Route record, State Mileage Breakdown record, Error record, Last record, Rate record, and Optimization record. The MMPC format includes one additional record type: the status record.

Record Sequence for an Answer file:

| <b>Record Name</b>      | <b>Characters in Cols 1-2</b> | <b>Explanation</b>  |
|-------------------------|-------------------------------|---|
| Status/ Synchronization | (not applicable)              | Appears only in MMPC formatted answer files. Does not apply to Windows formatted answer files.  |
| Header                  | HR                            | This record contains the type of request. It can also contain user information that is transferred back to the host.  |
| Optimization            | OP                            | This record indicates that optimization was applied while calculating the route.  |
| Mileage Inquiry         | MI                            | This record contains the origin and destination cities. It also contains the total toll, total non-toll, total mileage, and toll costs between the origin and destination cities. |
| Via Inquiry             | VI                            | This record contains the intermediate stop-off point and the mileage from the previous point to this stop-off point.  |
| Detailed Route          | DR                            | This record contains the detailed information on any given segment of a trip.   |
| State Mileage Breakdown | SM                            | This record contains the state codes, total toll, non-toll, and total mileage per state along a route.  |
| Error                   | ER                            | This record may contain from 1-13 error codes if a request cannot be completed.   |
| Rate                    | RC                            | This record contains the calculated rate if the input file contains correct R1 and R2 records.  |
| Detailed Mileage        | DM                            | This record provides information for Practical and Quickest mileage reports.  |
| Truck Stop Record       | TS                            | This record provides truck stop information.  |

| <b>Record Name</b>     | <b>Characters in Cols 1-2</b> | <b>Explanation</b>  |
|------------------------|-------------------------------|---|
| Construction Record    | CN                            | This record provides construction information.  |
| Breaks Record          | BK                            | This record provides driver break information.  |
| Toll Cost Record       | TC                            | This record provides toll costs for each state or province.   |
| Total Toll Cost Record | TT                            | This record provides total toll costs.  |
| Last                   | LR                            | This record indicates the end of the output records for a given request. It may be followed by HZ indicating the Hazardous Material network was used. |

Note: Except for the Status record and the Header record, the record type formats for the answer file are the same as those for the Output file in the IntelliRoute Batch feature. Please see Appendix B for more information on those record type formats. Only the Status and Header record type formats are detailed below.

#### Status Record

For MMPC formatted files, the first record in the answer file is reserved for the status record. The status record is used to synchronize access to the answer file between the LAN interface and user applications by allowing only one entity to control the file at a time. A user or user application can check the status record to determine if the LAN interface completed the route request.

#### Record Size: 24 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 4        | 4                           | COMP                  | Indicates the status of the route request. Values are:<br><br><b>COMP</b> : Indicates the LAN interface is finished writing to the answer file.<br><br><b>(spaces)</b> : Indicates the LAN interface has not finished writing to the answer file. |
| 5 - 14       | 10                          | 04/20/1999            | Indicates the date the interface status changed.  |
| 15 - 24      | 10                          | 20:10                 | The time the interface status changed (hours:minutes).  |

## Header Record

The Header Record returns the Answer Record type, the request type, the mileage indicator, and other information.

### Record Size: 100 bytes

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 1 - 2        | 2                           | HR                    | The Output Record type "HR" indicates that this is a Header Record.   |
| 3 - 4        | 2                           | MI                    | Type of request. One of the following list: MI, MD, HA, HS, HB, PR, PS, PB, PM, PD, QR, QS, QB, QM, QD, LR, LS, or LB.  |
| 5            | 1                           | M                     | This field contains an indicator to distinguish between distance in miles or kilometers. If the indicator is "M" or the field is blank, the distance is returned in miles. If the indicator is "K", the distance is returned in kilometers. Kilometer request are only available for MileMaker Practical Route options. |
| 6            | 1                           | Space                 | Space   |
| 7 - 13       | 7                           | ANS_DIR               | Contains the subdirectory for all answer records related to this request. This directory is allocated by the LAN administrator.   |
| 14 - 21      | 8                           | ANS_FILE              | Contains the file name for the answer file in order to distinguish between or among multiple requests sent to the same answer directory.  |
| 22 - 24      | 3                           | EXT                   | The answer file name extension.   |
| 25 - 100     | 76                          | Spaces                | Spaces  |

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