

 RAND McNALLY

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

**intelli**route<sup>®</sup>

**User Guide**

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

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# intelliroute<sup>®</sup>

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## User Guide

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# INTRODUCING INTELLIROUTE

## Chapter

# 1

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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/Dock2Dock mileages and routes based on the fastest truck-usable route.
- Dock2Dock feature allowing you to obtain street-level routing and mapping for the Quickest/Dock2Dock Route and Mileage Inquiries.
- 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.

- 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 Messages display in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes.
- Toll cost breakdown results for Quickest/Dock2Dock 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® 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.
- 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® 7, or 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)

---

## 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 Route Processing Options using keyboard commands, hold down the ALT key and press A, and then press R (ALT+A,R).

---

## Getting Help

### Online Help

#### The Help System

Online Help is available to provide a quick review of every menu 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.

#### Status Bar

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.

#### 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. Note: The User Guide is provided in PDF format; you must have a PDF reader installed to open and view the document.

## 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/>.

---

## 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.

---

## System Requirements

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

### “Bitidness” Matters

All installations of IntelliRoute with MileMaker require 64-bit operating systems. In addition, all applications, e.g., MicroSoft Excel®, that are used in conjunction with IntelliRoute with MileMaker require 64-bit versions to be installed.

### Windows Standalone

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

- Windows® 7 64-bit OS or later.
- Windows® Server 2008 64-bit or later.
- 15 GB of free disk space.
- 64-bit operating system

### Windows Standalone (IntelliRoute lite map version)

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

- Windows® 7 64-bit OS or later.
- Windows® Server 2008 64-bit or later.
- 1GB of free disk space.
- 64-bit operating system

**Note:** If available drive space is limited on your computer to 1GB or less, you can elect to install the IntelliRoute lite map version which has all the functionality of the IntelliRoute application minus the detailed map display zooms (zoom level 6 through 10). Contact Rand McNally Technical Support at **(800) 234-4069** Monday through Friday between 8 a.m. and 5 p.m. CST to receive details.

## Local Area Network (LAN)

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

- Windows® 7 64-bit OS or later.
- Windows® Server 2008 64-bit or later.
- 15 GB of free disk space.
- 64-bit operating systems for both server and client.

## Local Area Network (LAN with IntelliRoute lite map version)

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

- Windows® 7 64-bit OS or later.
- Windows® Server 2008 64-bit or later.
- 1GB of free disk space.
- 64-bit operating systems for both server and client.

**Note:**

.....  
If available drive space is a limited on your computer to 1GB or less, you can elect to install the IntelliRoute lite map version which has all the functionality of the IntelliRoute application minus the detailed map display zooms (zoom level 6 through 10). Contact Rand McNally Technical Support at **(800) 234-4069** Monday through Friday between 8 a.m. and 5 p.m. CST to receive details.  
.....

## IntelliRoute Express Server

To run IntelliRoute Express Server, you will need:

- Windows Server® 2003
- 350 MB of available hard drive space.
- 64-bit operating system

## IntelliRoute Clients

To run IntelliRoute with MileMaker clients, you will need:

### **Windows Text:**

- Windows® 7 or Windows® 2003 Server.
- 80 MB of available hard drive space.
- 64-bit operating system

### **Windows Mapping:**

- Windows® 7 or Windows® 2003 Server.
- 80MB of available hard drive space.
- 64-bit operating system

### **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.
- 64-bit operating system

### **AS/400 (iSeries):**

- i5/OS V5R3
- 40 MB of available hard drive space.
- 64-bit operating system

---

## Installation Instructions

The full map installation of this application is provided to you on a USB drive and will require 15 GB of hard disc space. During installation a start-up code is provided and you will be prompted to contact Licensing and Tech Support @ 800-234-4069 for a uniquely generated installation code. After the code has been input, installation will require approximately 50 minutes.\*

**Note:** If you have IntelliRoute or MileMaker currently installed on your machine, you will need to uninstall it before installing the Enhanced IntelliRoute® with MileMaker® system.

**Note:** An alternate lite map version, requiring 1 GB, is available via internet download, contact your salesman or tech support for the download link.

Licensing and Technical Support is available Monday through Friday, 8:30am-5pm CST 800-234-4069, [ctsupport@randmcnally.com](mailto:ctsupport@randmcnally.com)

## Using the Setup Program



To install IntelliRoute:

1. Insert the IntelliRoute flash drive into the USB port on your computer.
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 flash 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. Click **IntelliRoute with MileMaker** from the list of available programs.
- or
- Double-click on the IntelliRoute desktop icon.



3. IntelliRoute will check the amount of free disk space available on your computer (see note below). If the amount of available disk space is below 1GB, a pop-up window displays the following message:

*Your <insert appropriate drive letter> drive has <space available when less than 1GB> of free space! Do you want to delete temporary IntelliRoute files? See user's guide for details.*

*<yes> <no>*

4. Select **Yes**.

**Note:** Each time the application is started, IntelliRoute checks the amount of free disk space on your computer. If it is below 1GB, IntelliRoute will display a pop up message. See Step 4 above.

If you select "yes", IntelliRoute will delete all large scale map tiles (zooms 8-10, the most detailed zooms) generated and cached by the application over the course of a normal inquiry session.

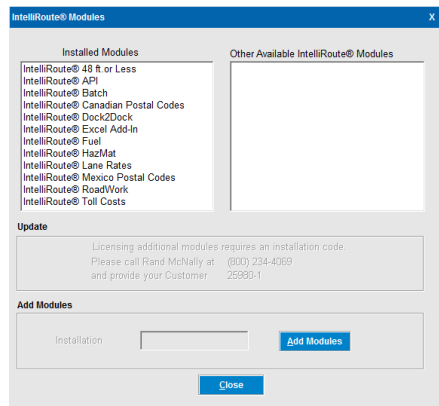
IntelliRoute caches the large scale map tiles so that when you revisit an area, the map will draw at optimal performance, otherwise, it could take up to 2 seconds to draw the map in dense urban areas. The more you zoom in or pan around at zooms 8-10, the more map tiles will be generated and cached. Over time, this action could fill up your available disk space.

If the amount of available disk space on your computer is above 1GB, IntelliRoute will NOT display a pop-up window.

**Note:** If available drive space is a limited on your computer to 1GB or less, you can elect to install the IntelliRoute lite map version which has all the functionality of the IntelliRoute application minus the detailed map display zooms (zoom level 6 through 10). Contact Rand McNally Technical Support at **(800) 234-4069** Monday through Friday between 8 a.m. and 5 p.m. CST to receive details.

## Viewing Installed and Available Modules

- ➡ To check modules that are currently installed and to add new modules:
1. Select the File menu and click IntelliRoute® Modules from the drop-down list.
  2. Review the list of modules in the Other Available IntelliRoute® Modules box, and decide which module(s) you would like to add.



3. Call a Rand McNally & Company customer representative at the number provided in the Update area of the IntelliRoute® Modules dialog box.
4. Provide the Rand McNally & Company customer representative with your Customer ID also located in the Update area of the IntelliRoute® Modules dialog box.
5. The Rand McNally & Company customer representative will ask you a series of questions and then supply you with an installation code.
6. In the Installation Code box, enter the installation code you received from the Rand McNally & Company customer representative.
7. Click Add Modules. If the installation code is accepted, a message will appear indicating that the module activation was successful.
8. Close that message dialog box. The IntelliRoute® Modules dialog box will now refresh and display your new configuration.
9. Click Close to close the IntelliRoute® Modules dialog box.
10. If the encrypted code is not accepted, an Invalid installation code message will appear. Click OK and try entering your code again.
11. For further assistance, call a Rand McNally & Company customer representative at the number provided in the Update area of the IntelliRoute® Modules dialog box.

# ENTERING INQUIRIES

## Chapter 2

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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 four 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/Dock2Dock Mileage**, which calculates the fastest (shortest time) truck-usable mileage between two or more locations using the new IntelliRoute GPS-accurate road network.
- **Lowest-Cost Mileage** which calculates the lowest-cost truck-usable mileage between 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/Dock2Dock 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.

### Note:

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

Figure 2-1: Mileage and Route Inquiry Panel

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

The screenshot shows a web interface for a route inquiry. At the top, it says "Route 1" with a settings icon and a close icon. Below that, it says "HHG Route" with a green arrow icon. There are three location entries, each with a location pin icon, the location name, and a distance value with a dropdown arrow and a close icon:

- CHICAGO, IL 380000000
- DAYTONA BCH, FL 491930000
- GARLAND, TX 667214000

Below these is a search bar labeled "Enter Location..." with a dropdown arrow and a close icon. Underneath is a "Truck Configuration" section with a dropdown menu set to "53 ft. length or 102 in. width" and a checkbox for "Optimization". Below that is a checkbox for "HazMat" followed by "HazMat Categories". There is a dropdown menu set to "HHG Route" and a green "Calculate" button. At the bottom, there are four columns: "Miles:", "Toll Cost US:", "Toll Cost CA:", and "Time:". Below these columns is an "Expand Details" button with a right-pointing arrow.

### **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

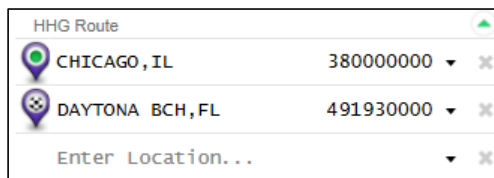
This section describes information common to entering mileage and route inquiries.

### 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



| HHG Route         |           |
|-------------------|-----------|
| CHICAGO, IL       | 380000000 |
| DAYTONA BCH, FL   | 491930000 |
| Enter Location... | 0         |

To specify a location, enter a city name, followed by a state or province name or code. 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. When entering latitude and longitude coordinates place a space between them. Do not use a comma. You can also right click on the map and use the Copy Coordinates menu to paste them into the location field.

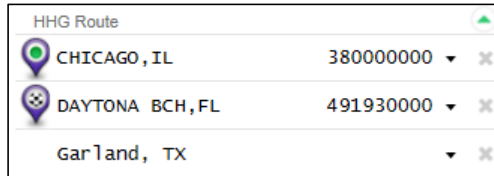
When you finish entering a city and state or province and press <ENTER>, that city should automatically appear in the list box below the **Locations** box. If it does not, check to make certain that you have spelled the name and the code correctly.

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.

**Figure 2-3:** Entering locations

After you add a location to your location list, simply type your next location in the **Enter Locations...** field and press <ENTER>.



Continue to enter locations until all of the locations along your route appear in the location list. For all route inquiries, 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 19).
- Reorder the location list (see page 22).
- Delete a location from your list (see page 23).
- Optimize your location list (see page 23).
- Save the location list (or a single location) with a unique name so you can reload the list quickly at any time (see page 24).

**Note:** After processing a mileage inquiry, you can click **Close** (the small "x" in the upper right hand corner of the dialog box) to clear the inquiry.

## Accepted Formats for the Enter Location... 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 also applies to Quickest/Dock2Dock and Lowest-Cost inquiries.

**Note:**

When multiple locations are tied to a ZIP Code, the first ZIP Code in the browse list is the default ZIP Code for MileMaker HHG, MileMaker Practical, Quickest/Dock2Dock, 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/Dock2Dock and Lowest-Cost inquiries, you can enter the latitude/longitude pair using up to five decimal positions using a space to separate them. Do not use a comma.  
Example for Quickest/Dock2Dock and Lowest-Cost inquiries: **39.22354 94.69427**

## Entering a Street Address Location

When the Dock2Dock module is installed, Dock2Dock (Quickest/Dock2Dock) 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 Dock2Dock feature is a separately purchasable option and replaces the Quickest/Dock2Dock Route inquiry option when installed.

---



To enter a street address:

1. Enter one of the following followed by a comma in the **Enter Location...** 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 an 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. After the street address, type a city name followed by a comma and a state:  
Example: **9855 Woods Drive,Skokie,IL**

---

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

---

3. Press <ENTER>. The location displays and a new location entry box will appear.

---

**Note:** If providing an incomplete street address (street name only), a dialog may appear after you press <ENTER>, listing the best matches for the information you provided. Select the desired entry from this list, and click **OK**.

---

For further information, see Entering a Quickest/Dock2Dock 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 on the location to select.

## Modifying the Location List

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

- Insert locations into the list (see below).
- Reorder the location list (see page 22).
- Delete locations from the list (see page 23).
- Optimize the locations in the list (see page 23).
- Edit existing location field.

## 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 “Reordering the Location List” on page 22.

## Reordering the Location List Using Drag and Drop



To reorder the locations in the list:

1. Click on the location that you want to move.
2. Hold down the left mouse button, and drag the location to the correct place in the list.

**Note:**

.....  
You cannot reorder address locations by using the drag and drop feature. To reorder an address location, you must use the copy and paste method or delete the address location and reenter.  
.....

## Replacing an entry in the Location List with another Location

- To replace an entry in the list with another location:
  1. Click on the down arrow to the right of the location you want to change. The browse listing for that location displays.
  2. Click on another location from the listing.

## Deleting Locations

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

## Optimizing 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, unless you have selected one of the Hub Mileage Inquiries 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.

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. The following message box displays: Do you want to select a specific destination?"
  2. Click No to have IntelliRoute® reorder your locations.
  3. Click Calculate.
- To optimize a location list with a 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. The following message box displays: Do you want to select a specific destination?"
  2. Click Yes to have IntelliRoute® reorder your locations with a destination you select.
  3. In the location list, click on the location that you want to designate as the destination. The destination location name will be highlighted.
  4. Click Calculate.

## 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 **Enter Locations...** field, the entire list of locations saved with the custom name will appear in the list. 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.

## 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.

**Tip:**

You can also access the Custom Name Manager by clicking the gear icon located on the upper left corner of the mileage and route inquiry panel.

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:**

For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

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 reorder the list of locations, see “Reordering the Location List” on page 22.

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

## Retrieving a Custom-Named Location List

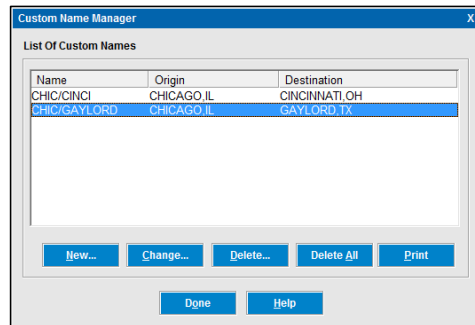
- To retrieve a custom-named location list in an inquiry dialog box:
  1. In the **Enter Location...** field, type the name of a custom-named location.
  2. Press <ENTER> to add the locations to the current list.

## 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.

**Tip:** You can also access the Custom Name Manager by clicking the gear icon located on the upper left corner of the mileage and route inquiry panel.

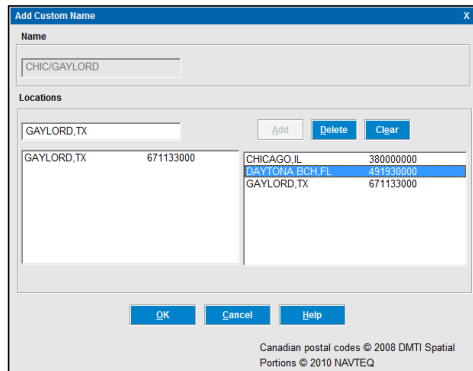
Figure 2-4: Selecting a custom location name.



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**.

- 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 2-5:** Changing a custom-name location list.



- 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**.
- When your changes are complete, click **OK**.
- When a message box prompts you to verify that you want to replace the custom-named list, click **Yes**.
- When a message box prompts you to acknowledge that the custom-named list was replaced, click **OK**.
- To exit the Custom Name Manager dialog box, click **Done**.

## Deleting a Custom-Named Location List

☰ To delete custom-named locations:

- From the **Features** menu, select **Custom Name Manager**. The Custom Name Manager dialog box displays a list of custom-named locations.

**Tip:** You can also access the Custom Name Manager by clicking the gear icon located on the upper left corner of the mileage and route inquiry panel.

- 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**.
- To delete all locations from the list, click **Delete All**. All locations are immediately removed from the list.
- 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.

**Tip:** You can also access the Custom Name Manager by clicking the gear icon located on the upper left corner of the mileage and route inquiry panel.

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**.

---

## 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.

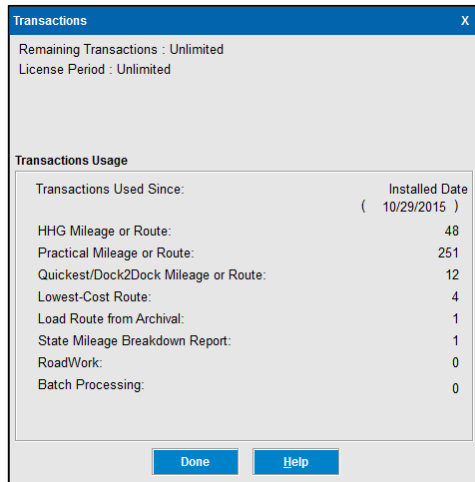
### Viewing Transaction Usage Information

➡ 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 2-6:** 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

## Chapter 3

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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 **HazMat**. 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, Quickest/Dock2Dock, or Lowest Cost miles.

#### MileMaker Hub HHG Mileage Inquiries

MileMaker Hub HHG Mileage inquiries determine the shortest distance between a single origin and multiple destinations 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 Hub Practical Mileage Inquiries

MileMaker Hub Practical Mileage inquiries calculate the most time-efficient mileage between a single origin and multiple destinations using the same road network database as MileMaker HHG inquiries. **MileMaker Practical Miles are not calculated with HHG tariff rules.**

### **Hub Quickest/Dock2Dock Mileage Inquiries**

Quickest/Dock2Dock Mileage inquiries calculate the fastest (shortest time) truck-usable a single origin and multiple destinations. 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/Dock2Dock Mileage Inquiry.

### **Hub Lowest Cost Mileage Inquiries**

Hub Lowest Cost inquiries calculate the lowest-cost truck-usable mileage between a single origin and multiple destinations using the new IntelliRoute GPS-accurate road network.

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

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## Entering Mileage Inquiries

### Entering a MileMaker Hub HHG Mileage Inquiry

The MileMaker Hub HHG Mileage inquiry provides mileages between a single origin and multiple destinations. 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 Hub Mileage Inquiry:

1. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Hub HHG Mileage** from the drop-down menu.
2. In the **ENTER LOCATION...** field, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:** For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a destination, type a location in the **ENTER LOCATION...** field and press <ENTER>. The destination location appears in the list. Continue entering destinations in this manner.

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

**Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.

- To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

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

- To display the mileage information, click **Calculate** or press **<ENTER>**. The total HHG mileage will be displayed at the bottom of the inquiry as shown below.

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

|        |               |               |       |
|--------|---------------|---------------|-------|
| Miles: | Toll Cost US: | Toll Cost CA: | Time: |
| 2005   | 40.74         | 0.00          | 35:41 |

- To display the mileage information for each route, click **Expand Details**. The mileage will be displayed to the right of the inquiry as shown below.

**Figure 3-3:** Sample expanded details from a MileMaker Hub HHG Mileage Inquiry.

| Location        | Miles | Miles   | Toll Cost Within US | Toll Cost Within CA | Time  | County  |
|-----------------|-------|---------|---------------------|---------------------|-------|---------|
| CHICAGO, IL     |       |         |                     |                     |       | COOK    |
| DAYTONA BCH, FL | 1088  | 1088.38 | 25.20               | 0.00                | 20.21 | VOLUSIA |
| GARLAND, TX     | 916   | 916.45  | 15.54               | 0.00                | 15.20 | DALLAS  |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, *Viewing Route Output on the Map Display*.

## Entering a MileMaker Hub Practical Mileage Inquiry

The MileMaker Hub Practical Mileage Inquiry provides practical route mileages between a single origin and multiple destinations using the same road network database as MileMaker HHG inquiries. The returned mileage reflects the most time-efficient route. MileMaker Hub Practical Mileage inquiries can be calculated in miles or kilometers.

➡ To enter a MileMaker Hub Practical Mileage Inquiry:

1. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Hub Practical Mileage** from the drop-down menu.
2. In the **ENTER LOCATION...** field, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:** For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a destination, type a location in the **ENTER LOCATION...** field and press ENTER. The destination location appears in the list. Continue entering destinations in this manner.

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

**Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.

- To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

**Figure 3-4:** Example of information entered for a MileMaker Hub Practical Mileage Inquiry.

- To display the mileage information, click **Calculate** or press **<ENTER>**. The total Practical mileage will be displayed at the bottom of the inquiry as shown below.

**Figure 3-5:** Sample output from a MileMaker Hub Practical Mileage Inquiry.

| Miles: | Toll Cost US: | Toll Cost CA: | Time: |
|--------|---------------|---------------|-------|
| 2080   | 48.01         | 0.00          | 34:26 |

- To display the mileage information for each route, click **Expand Details**. The mileage will be displayed to the right of the inquiry as shown below.

**Figure 3-6:** Sample expanded details from a MileMaker Hub Practical Mileage Inquiry.

| Location        | Miles | Miles   | Toll Cost Within US | Toll Cost Within CA | Time  | County  |
|-----------------|-------|---------|---------------------|---------------------|-------|---------|
| CHICAGO, IL     |       |         |                     |                     |       | COOK    |
| DAYTONA BCH, FL | 1161  | 1160.94 | 32.47               | 0.00                | 19:11 | VOLUSIA |
| GARLAND, TX     | 919   | 918.72  | 15.54               | 0.00                | 15:15 | DALLAS  |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, Viewing Route Output on the Map Display.

## Entering a Hub Quickest/Dock2Dock Mileage Inquiry

The Hub Quickest/Dock2Dock Mileage Inquiry provides fastest (shortest time) truck-usable mileage between a single origin and multiple destinations. The mileage is determined using the new IntelliRoute GPS-accurate road network and options you specify. Hub Quickest/Dock2Dock Mileage inquiries can be calculated in miles or kilometers.



To enter a Hub Quickest/Dock2Dock Mileage Inquiry:

1. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Hub Quickest/Dock2Dock Mileage** from the drop-down menu.
2. In the **ENTER LOCATION...** field, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:**

For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a destination, type a location in the **ENTER LOCATION...** field and press ENTER. The destination location appears in the list. Continue entering destinations in this manner.

**Tip:**

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

**Tip:**

If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. To specify the categories of hazardous materials that apply to this inquiry, click **HazMat Categories**. For more information, refer to Chapter 5.

- To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

**Figure 3-7:** Example of a Hub Quickest/Dock2Dock Mileage.

- 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.
- To display the mileage information, click **Calculate** or press **<ENTER>**. The total Quickest/Dock2Dock mileage will be displayed at the bottom of the inquiry as shown below.

**Figure 3-8:** Sample output from a Hub Quickest/Dock2Dock Mileage Inquiry.

| Miles:        | Toll Cost US: | Toll Cost CA: | Time:        |
|---------------|---------------|---------------|--------------|
| <b>2077.6</b> | <b>48.01</b>  | <b>0.00</b>   | <b>34:25</b> |

[Expand Details](#)

- To display the mileage information for each route, click **Expand Details**. The mileage will be displayed to the right of the inquiry as shown below.

**Figure 3-9:** Sample expanded details from a MileMaker Hub Quickest/Dock2Dock Mileage Inquiry.

| Route 1        |       |        |                     |                     |       |              |
|----------------|-------|--------|---------------------|---------------------|-------|--------------|
| Route Overview |       |        |                     |                     |       | Hide Details |
| Location       | Miles | Miles  | Toll Cost Within US | Toll Cost Within CA | Time  | County       |
| CHICAGO,IL     |       |        |                     |                     |       | COOK         |
| DAYTONA BCH,FL |       | 1159.5 | 32.47               | 0.00                | 19:11 | VOLUSIA      |
| GARLAND,TX     |       | 918.1  | 15.54               | 0.00                | 15:14 | DALLAS       |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, Viewing Route Output on the Map Display.

## Entering a Hub Lowest-Cost Mileage Inquiry

The Hub Lowest-Cost Mileage Inquiry provides 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.

➡ To enter a Hub Lowest-Cost Mileage Inquiry:

1. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Hub Lowest-Cost Mileage** from the drop-down menu.
2. In the **ENTER LOCATION...** field, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:** For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a destination, type a location in the **ENTER LOCATION...** field and press ENTER. The destination location appears in the list. Continue entering destinations in this manner.

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

**Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. To specify the categories of hazardous materials that apply to this inquiry, click **HazMat Categories**. For more information, refer to Chapter 5.

- To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

**Figure 3-10:** Example of a Lowest-Cost Mileage Inquiry.

The screenshot shows a web interface for 'Route 1'. It features a 'Hub Lowest-Cost Mileage' section with three location entries: CHICAGO, IL (380000000), DAYTONA BCH, FL (491930000), and GARLAND, TX (667214000). Below this is a 'Truck Configuration' section with a dropdown for '53 ft. length or 102 in. width', an 'Optimization' checkbox, and a 'HazMat' section with a 'HazMat Categories' dropdown. A 'Calculate' button is present. At the bottom, there is a table with columns for Miles, Toll Cost US, Toll Cost CA, and Time, and a 'Hide Details' link.

- 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.
- To display the mileage information, click **Calculate** or press **<ENTER>**. The total Lowest-Cost mileage will be displayed at the bottom of the inquiry as shown below.

**Figure 3-11:** Sample output from a Lowest-Cost Mileage Inquiry.

| Miles:                         | Toll Cost US: | Toll Cost CA: | Time:        |
|--------------------------------|---------------|---------------|--------------|
| <b>2041.9</b>                  | <b>15.54</b>  | <b>0.00</b>   | <b>34:29</b> |
| <a href="#">Expand Details</a> |               |               |              |

Figure 3-12: Sample expanded details from a MileMaker Hub Lowest-Cost Mileage Inquiry.

- To display the mileage information for each route, click **Expand Details**. The mileage will be displayed to the right of the inquiry as shown below.

| Route 1        |       |        |                     |                     |       |              |
|----------------|-------|--------|---------------------|---------------------|-------|--------------|
| Route Overview |       |        |                     |                     |       | Hide Details |
| Location       | Miles | Miles  | Toll Cost Within US | Toll Cost Within CA | Time  | County       |
| CHICAGO,IL     |       |        |                     |                     |       | COOK         |
| DAYTONA BCH,FL |       | 1123.8 | 0.00                | 0.00                | 19:15 | VOLUSIA      |
| GARLAND,TX     |       | 918.1  | 15.54               | 0.00                | 15:14 | DALLAS       |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, *Viewing Route Output on the Map Display*.

# ENTERING ROUTE INQUIRIES

## Chapter 4

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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. The route inquiry will also provide a *State Mileage Breakdown*, which shows the distance traveled in each state along the specified route.

Quickest/Dock2Dock 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 **HazMat**. 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/Dock2Dock, 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).

### 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.**

### Quickest/Dock2Dock Route Inquiries

Quickest/Dock2Dock 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.

### 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.

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## 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 route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **HHG Route** from the drop-down menu.
2. In the **ENTER LOCATION...** box, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:**

For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a points along the route, type a location in the **ENTER LOCATION...** box and press <ENTER>. The location appears in the list. Continue entering locations in this manner.

- Tip:** If you need to reorder the locations that you have included in the inquiry, see “Reordering the Location List” in Chapter 2.
- Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.
- Tip:** If three or more locations are specified, you can optimize the route by selecting the **Optimization** checkbox. For more information, see “Optimizing the Location List” in Chapter 2.
- Tip:** You can set the exchange rate for routing in Canada. For more information about setting the exchange rate, see Chapter 5.
- Tip:** State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see “Reordering the Location List” in Chapter 2.
- Tip:** 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.
- Tip:** To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

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

The screenshot shows a mobile application interface for a route inquiry. At the top, it is titled "Route 1" with a settings gear icon and a close 'x' icon. Below the title, the route is identified as "HHG Route" with a green upward arrow. The route consists of three locations: CHICAGO, IL (380000000), DAYTONA BCH, FL (491930000), and GARLAND, TX (667214000). Each location has a location pin icon and a close 'x' icon. Below the locations is a text input field "Enter Location..." with a dropdown arrow and a close 'x' icon. The "Truck Configuration" section includes a dropdown menu for "53 ft. length or 102 in. width", an "Optimization" checkbox, a "HazMat" checkbox, and a "HazMat Categories" dropdown menu set to "HHG Route". A green "Calculate" button is positioned to the right of the HazMat dropdown. At the bottom, there are four empty fields for "Miles:", "Toll Cost US:", "Toll Cost CA:", and "Time:". An "Expand Details" button with a right-pointing arrow is located at the very bottom.

**Figure 4-2:** Sample output from a MileMaker HHG Route.

4. To display the mileage information, click **Calculate** or press **<ENTER>**. The total HHG mileage will be displayed at the bottom of the inquiry as shown below.

|                                  |               |               |              |
|----------------------------------|---------------|---------------|--------------|
| Miles:                           | Toll Cost US: | Toll Cost CA: | Time:        |
| <b>2142</b>                      | <b>25.20</b>  | <b>0.00</b>   | <b>40:13</b> |
| <a href="#">Expand Details ▶</a> |               |               |              |

5. To display the route overview, itinerary, and state mileage breakdown, click **Expand Details**. The route overview, itinerary, and state mileage breakdown will be displayed to the right of the inquiry.
  - The *Route Overview* section of the output displays the total toll cost in the U.S and Canada along with the total mileage (shown in whole and decimal format), time, and county of each location on the route.
  - The *Route Itinerary* section of the output displays detailed information on the HHG route including highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys.
  - The *State Breakdown* section of the output displays the distance traveled in each state along the 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.

**Figure 4-3:** Sample expanded details from a MileMaker HHG Route.

HHG Route Overview

HHG Route Itinerary

State Mileage Breakdown

**Route 1**

**Route Overview** Hide Details

| Location       | Miles       | Miles          | Toll Cost Within US | Toll Cost Within CA | Time         | County  |
|----------------|-------------|----------------|---------------------|---------------------|--------------|---------|
| CHICAGO,IL     |             |                |                     |                     |              | COOK    |
| DAYTONA BCH,FL | 1088        | 1088.38        | 25.20               | 0.00                | 20:21        | VOLUSIA |
| GARLAND,TX     | 1054        | 1053.80        | 0.00                | 0.00                | 19:51        | DALLAS  |
| <b>Total</b>   | <b>2142</b> | <b>2142.18</b> | <b>25.20</b>        | <b>0.00</b>         | <b>40:13</b> |         |

**Route Itinerary**

53 ft. MileMaker HHG Full Route w/ SME: Chicago,IL to Garland,TX

| Road   | Direction | Miles | To                   | Time | Distance | Notes |
|--------|-----------|-------|----------------------|------|----------|-------|
| I 90   | E         | 15    | IL/IN STATE LINE     | 0:29 | 15       | TB    |
| I 90   | E         | 0     | NW OF WHITING,IN     | 0:29 | 15       | TB    |
| US 20  | E         | 7     | E OF HAMMOND,IN      | 0:43 | 22       |       |
| IN 152 | S         | 3     | NW OF HIGHLAND,LA,IN | 0:49 | 25       |       |
| US 41  | S         | 87    | S OF CARBONDALE,IN   | 2:37 | 112      |       |
| IN 63  | SW        | 63    | N OF TERRE HAUTE,IN  | 3:54 | 175      |       |
| US 41  | S         | 114   | IN/KY STATE LINE     | 6:10 | 289      |       |

**State Breakdown**

| State        | Toll Miles | Non-Toll Miles | Total Miles | Toll Cost Within US | Toll Cost Within CA | Converted Cost in U.S. \$ | Converted Cost in CA \$ |
|--------------|------------|----------------|-------------|---------------------|---------------------|---------------------------|-------------------------|
| ALABAMA      | 0          | 196            | 196         | 0.00                |                     |                           |                         |
| FLORIDA      | 0          | 458            | 458         | 0.00                |                     |                           |                         |
| GEORGIA      | 0          | 397            | 397         | 0.00                |                     |                           |                         |
| ILLINOIS     | 7          | 8              | 15          | 25.20               |                     |                           |                         |
| INDIANA      | 0          | 274            | 274         | 0.00                |                     |                           |                         |
| KENTUCKY     | 0          | 96             | 96          | 0.00                |                     |                           |                         |
| <b>Total</b> | <b>8</b>   | <b>2135</b>    | <b>2142</b> | <b>25.20</b>        | <b>0.00</b>         |                           |                         |

**Note:** A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, Viewing Route Output on the Map Display.

## 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. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Practical Route** from the drop-down menu.
2. In the **ENTER LOCATION...** box, type the origin, and press ENTER. The origin location appears in the list.

**Note:**

For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a points along the route, type a location in the **ENTER LOCATION...** box and press <ENTER>. The location appears in the list. Continue entering locations in this manner.

- Tip:** If you need to reorder the locations that you have included in the inquiry, see “Reordering the Location List” in Chapter 2.
- Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.
- Tip:** If three or more locations are specified, you can optimize the route by selecting the **Optimization** checkbox. For more information, see “Optimizing the Location List” in Chapter 2.
- Tip:** You can set the exchange rate for routing in Canada. For more information about setting the exchange rate, see in Chapter 5.
- Tip:** State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see “Reordering the Location List” in Chapter 2.
- Tip:** 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.
- Tip:** To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.

**Figure 4-4:** Example of information entered in a Practical Route Inquiry.

The screenshot shows a 'Route 1' inquiry window. It contains a list of three locations: CHICAGO, IL (380000000), DAYTONA BCH, FL (491930000), and GARLAND, TX (667214000). Below the list is a 'Truck Configuration' section with a dropdown for '53 ft. length or 102 in. width', checkboxes for 'Optimization' and 'HazMat', and a 'HazMat Categories' dropdown. A 'Calculate' button is present. At the bottom, there are fields for 'Miles:', 'Toll Cost US:', 'Toll Cost CA:', and 'Time:', along with an 'Expand Details' link.

Figure 4-5: Sample output from a MileMaker Practical Route.

4. To display the mileage information, click **Calculate** or press **<ENTER>**. The total Practical mileage will be displayed at the bottom of the inquiry as shown below.

|                                  |               |               |              |
|----------------------------------|---------------|---------------|--------------|
| Miles:                           | Toll Cost US: | Toll Cost CA: | Time:        |
| <b>2248</b>                      | <b>32.47</b>  | <b>0.00</b>   | <b>36:42</b> |
| <a href="#">Expand Details ▶</a> |               |               |              |

5. To display the route overview, itinerary, and state mileage breakdown, click **Expand Details**. The route overview, itinerary, and state mileage breakdown will be displayed to the right of the inquiry.
  - The *Route Overview* section of the output displays the total toll cost in the U.S and Canada along with the total mileage (shown in whole and decimal format), time, and county of each location on the route.
  - The *Route Itinerary* section of the output displays detailed information on the HHG route including highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys.
  - The *State Breakdown* section of the output displays the distance traveled in each state along the 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.

**Figure 4-6:** Sample expanded details from a Practical Route.

Practical Route Overview

Practical Route Itinerary

State Mileage Breakdown

**Route 1**

**Route Overview** [Hide Data](#)

| Location       | Miles       | Miles          | Toll Cost Within US | Toll Cost Within CA | Time         | County |
|----------------|-------------|----------------|---------------------|---------------------|--------------|--------|
| CHICAGO,IL     |             |                |                     |                     |              | COOK   |
| DAYTONA BCH,FL | 1160        | 1160.44        | 32.47               | 0.00                | 19:11        |        |
| GARLAND,TX     | 1087        | 1087.11        | 0.00                | 0.00                | 17:30        | DALLAS |
| <b>Total</b>   | <b>2248</b> | <b>2247.55</b> | <b>32.47</b>        | <b>0.00</b>         | <b>36:42</b> |        |

**Route Itinerary**

53 ft. MileMaker Practical Route w/ SMB: Chicago,IL to Garland,TX with 0 % toll road bias

| Road  | Direction | Miles | To                    | Time | Distance | Notes | MCRA |
|-------|-----------|-------|-----------------------|------|----------|-------|------|
| I 90  | E         | 15    | IL/IN STATE LINE      | 0:29 | 15       | TB    | p.36 |
| I 90  | E         | 16    | E OF GARY,IN          | 0:50 | 31       | TB    | p.36 |
| I 65  | S         | 139   | NW OF INDIANAPOLIS,IN | 3:18 | 171      |       | p.36 |
| I 465 | S         | 20    | SE OF INDIANAPOLIS,IN | 3:41 | 190      |       | p.36 |
| I 65  | S         | 106   | INKY STATE LINE       | 5:33 | 297      |       | p.42 |
| I 65  | S         | 138   | KY/TN STATE LINE      | 7:46 | 434      |       | p.94 |
| I 65  | S         | 38    | E OF NASHVILLE,TN     | 8:22 | 473      |       | p.94 |

**State Breakdown**

| State        | Toll Miles | Non-Toll Miles | Total Miles | Toll Cost Within US | Toll Cost Within CA | Converted Cost in U.S. \$ | Converted Cost in CA \$ |
|--------------|------------|----------------|-------------|---------------------|---------------------|---------------------------|-------------------------|
| ALABAMA      | 0          | 73             | 73          | 0.00                |                     |                           |                         |
| FLORIDA      | 0          | 647            | 647         | 0.00                |                     |                           |                         |
| GEORGIA      | 0          | 359            | 359         | 0.00                |                     |                           |                         |
| ILLINOIS     | 7          | 8              | 15          | 25.20               |                     |                           |                         |
| INDIANA      | 16         | 266            | 282         | 7.27                |                     |                           |                         |
| KENTUCKY     | 0          | 138            | 138         | 0.00                |                     |                           |                         |
| <b>Total</b> | <b>24</b>  | <b>2224</b>    | <b>2248</b> | <b>32.47</b>        | <b>0.00</b>         |                           |                         |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, [Viewing Route Output on the Map Display](#).

## Entering a Quickest/Dock2Dock Route Inquiry

The Quickest/Dock2Dock Route Inquiry provides detailed information on the fastest (shortest time) truck-usable route between the locations entered. The Quickest/Dock2Dock Route is determined by total time using the new IntelliRoute GPS-accurate road network and your general routing preferences. Quickest/Dock2Dock Route inquiries can be calculated in miles or kilometers.



To run a Quickest/Dock2Dock Route Inquiry:

1. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Quickest/Dock2Dock Route** from the drop-down menu.
2. In the **ENTER LOCATION...** box, type the origin, and press <ENTER>. The origin location appears in the list.

**Note:**

When the Dock2Dock module is installed, you can enter a street address as an origin and/or destination location. All other points in between (via points) must be the standard IntelliRoute® point locations, sometimes referred to as general location entries. For more information about entering addresses, see “Entering a Street Address Location” in Chapter 2.

**Note:**

For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a points along the route, type a location in the **ENTER LOCATION...** box and press <ENTER>. The location appears in the list. Continue entering locations in this manner.

- Tip:** If you need to reorder the locations that you have included in the inquiry, see “Reordering the Location List” in Chapter 2.
- Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.
- Tip:** If three or more locations are specified, you can optimize the route by selecting the **Optimization** checkbox. For more information, see “Optimizing the Location List” in Chapter 2.
- Tip:** You can set the exchange rate for routing in Canada. For more information about setting the exchange rate, see Chapter 5.
- Tip:** State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see “Reordering the Location List” in Chapter 2.
- Tip:** 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.
- Truck-Type Violation messages are displayed in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes when settings for trailer lengths of 53’, truck widths of 102”, and double or triple trailer options are in violation. The messages identify the violation and include route segment specifics such as direction, distance, and time.
- Tip:** To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.
- Tip:** You can set the Route/Mileage Processing options so that all Quickest/Dock2Dock Route inquiries automatically calculate using the RoadWork update settings. For information on setting or clearing the RoadWork update options, see Chapter 5.

**Figure 4-7:** Example of information entered in a Quickest/Dock2Dock Route Inquiry.

- To display the mileage information, click **Calculate** or press **<ENTER>**. The total Quickest/Dock2Dock mileage will be displayed at the bottom of the inquiry as shown below.

**Figure 4-8:** Sample output from a Quickest/Dock2Dock Route.

| Miles:        | Toll Cost US: | Toll Cost CA: | Time:        |
|---------------|---------------|---------------|--------------|
| <b>2246.5</b> | <b>32.47</b>  | <b>0.00</b>   | <b>36:41</b> |

[Expand Details](#)

- To display the route overview, itinerary, and state mileage breakdown, click **Expand Details**. The route overview, itinerary, and state mileage breakdown will be displayed to the right of the inquiry.
  - The *Route Overview* section of the output displays the total toll cost in the U.S and Canada along with the total mileage (shown in whole and decimal format), time, and county of each location on the route.
  - The *Route Itinerary* section of the output displays detailed information on the Quickest/Dock2Dock route including highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys.
  - The *State Breakdown* section of the output displays the distance traveled in each state along the 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.

**Figure 4-9:** Sample expanded details from a Quickest/Dock2Dock Route.

Quickest/Dock2Dock Route Overview

Quickest/Dock2Dock Route Itinerary

State Mileage Breakdown

| Route 1        |       |               |                     |                     |              |              |
|----------------|-------|---------------|---------------------|---------------------|--------------|--------------|
| Route Overview |       |               |                     |                     |              | Hide Details |
| Location       | Miles | Miles         | Toll Cost Within US | Toll Cost Within CA | Time         | County       |
| CHICAGO,IL     |       |               |                     |                     |              | COOK         |
| DAYTONA BCH,FL |       | 1159.5        | 32.47               | 0.00                | 19:11        | VOLUSIA      |
| GARLAND,TX     |       | 1087.0        | 0.00                | 0.00                | 17:30        | DALLAS       |
| <b>Total</b>   |       | <b>2246.5</b> | <b>32.47</b>        | <b>0.00</b>         | <b>36:41</b> |              |

| Route Itinerary  |           |       |                       |      |          |       |       |
|--|-----------|-------|-----------------------|------|----------|-------|-------|
| 83 ft. Dock2Dock Route w/SMB: Chicago,IL to Garland,TX with 0 % toll road bias |           |       |                       |      |          |       |       |
| Road   | Direction | Miles | To                    | Time | Distance | Notes | MCRA  |
| I 90   | E         | 14.8  | IL/IN STATE LINE      | 0:29 | 14.8     | TB    | p.36- |
| I 90   | E         | 16.3  | E OF GARY,IN          | 0:50 | 31.1     | TB    | p.36- |
| I 65   | S         | 139.5 | NW OF INDIANAPOLIS,IN | 3:18 | 170.6    |       | p.36- |
| I 465  | S         | 19.9  | SE OF INDIANAPOLIS,IN | 3:41 | 190.4    |       | p.36- |
| I 65   | S         | 106.5 | IN/KY STATE LINE      | 5:33 | 296.9    |       | p.42- |
| I 65   | S         | 137.6 | KY/TN STATE LINE      | 7:46 | 434.4    |       | p.94- |
| I 65   | S         | 38.2  | E OF NASHVILLE,TN     | 8:22 | 472.6    |       | p.94- |

| State Breakdown |             |                |               |                     |                     |                           |                         |
|-----------------|-------------|----------------|---------------|---------------------|---------------------|---------------------------|-------------------------|
| State           | Toll Miles  | Non-Toll Miles | Total Miles   | Toll Cost Within US | Toll Cost Within CA | Converted Cost in U.S. \$ | Converted Cost in CA \$ |
| ALABAMA         | 0.0         | 73.4           | 73.4          | 0.00                |                     |                           |                         |
| FLORIDA         | 0.0         | 647.3          | 647.3         | 0.00                |                     |                           |                         |
| GEORGIA         | 0.0         | 359.1          | 359.1         | 0.00                |                     |                           |                         |
| ILLINOIS        | 7.3         | 7.5            | 14.8          | 25.20               |                     |                           |                         |
| INDIANA         | 16.3        | 265.8          | 282.0         | 7.27                |                     |                           |                         |
| KENTUCKY        | 0.0         | 137.6          | 137.6         | 0.00                |                     |                           |                         |
| <b>Total</b>    | <b>23.6</b> | <b>2222.9</b>  | <b>2246.5</b> | <b>32.47</b>        | <b>0.00</b>         |                           |                         |

**Note:** A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, Viewing Route Output on the Map Display.

## 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. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select **Quickest/Dock2Dock Route** from the drop-down menu.
2. In the **ENTER LOCATION...** box, type the origin, and press ENTER. The origin location appears in the list.

**Note:** When the Dock2Dock module is installed, you can enter a street address as an origin and/or destination location. All other points in between (via points) must be the standard IntelliRoute® point locations, sometimes referred to as general location entries. For more information about entering addresses, see "Entering a Street Address Location" in Chapter 2.

**Note:** For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

3. To add a points along the route, type a location in the **ENTER LOCATION...** box and press <ENTER>. The location appears in the list. Continue entering locations in this manner.

- Tip:** If you need to reorder the locations that you have included in the inquiry, see “Reordering the Location List” in Chapter 2.
- Tip:** If hazardous materials restrictions apply to the inquiry, select the **HazMat** checkbox. For more information, refer to Chapter 5.
- Tip:** If three or more locations are specified, you can optimize the route by selecting the **Optimization** checkbox. For more information, see “Optimizing the Location List” in Chapter 2.
- Tip:** You can set the exchange rate for routing in Canada. For more information about setting the exchange rate, see Chapter 5.
- Tip:** State Mileage Breakdown can be displayed in alphabetical or route order. For more information, see “Reordering the Location List” in Chapter 2.
- Tip:** 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.
- Truck-Type Violation messages are displayed in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes when settings for trailer lengths of 53’, truck widths of 102”, and double or triple trailer options are in violation. The messages identify the violation and include route segment specifics such as direction, distance, and time.
- Tip:** To apply additional customization features to your inquiry, select Route Processing Options from the Features menu. See Chapter 5 for information on customization features.
- Tip:** You can set the Route/Mileage Processing options so that all Lowest-Cost Route inquiries automatically calculate using the RoadWork update settings. For information on setting or clearing the RoadWork update options, see Chapter 5.

**Figure 4-10:** Example of information entered in a Lowest-Cost Route Inquiry.

4. To display the mileage information, click **Calculate** or press **<ENTER>**. The total Lowest-Cost mileage will be displayed at the bottom of the inquiry as shown below.

**Figure 4-11:** Sample output from a Lowest-Cost Route.

| Miles:        | Toll Cost US: | Toll Cost CA: | Time:        |
|---------------|---------------|---------------|--------------|
| <b>2209.7</b> | <b>0.00</b>   | <b>0.00</b>   | <b>36:46</b> |

[Expand Details](#) ▶

5. To display the route overview, itinerary, and state mileage breakdown, click **Expand Details**. The route overview, itinerary, and state mileage breakdown will be displayed to the right of the inquiry.
  - The *Route Overview* section of the output displays the total toll cost in the U.S and Canada along with the total mileage (shown in whole and decimal format), time, and county of each location on the route.
  - The *Route Itinerary* section of the output displays detailed information on the Lowest-Cost route including highway names, road directions, total miles traveled on the road, locations, accumulated times, accumulated distances, notes, and Motor Carriers' Road Atlas (MCRA) keys.
  - The *State Breakdown* section of the output displays the distance traveled in each state along the 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.

**Figure 4-12:** Sample expanded details from a Lowest-Cost Route.

- **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.

**Route 1**

**Route Overview**

| Location       | Miles | Miles         | Toll Cost Within US | Toll Cost Within CA | Time         | County  |
|----------------|-------|---------------|---------------------|---------------------|--------------|---------|
| CHICAGO,IL     |       |               |                     |                     |              | COOK    |
| DAYTONA BCH,FL |       | 1123.8        | 0.00                | 0.00                | 19:15        | VOLUSIA |
| GARLAND,TX     |       | 1085.9        | 0.00                | 0.00                | 17:30        | DALLAS  |
| <b>Total</b>   |       | <b>2209.7</b> | <b>0.00</b>         | <b>0.00</b>         | <b>36:46</b> |         |

**Route Itinerary**

63 ft. Lowest-Cost Route w/SMB: Chicago,IL to Garland,TX with 0 % toll road bias

| Road   | Direction | Miles | To                  | Time | Distance | Notes |
|--------|-----------|-------|---------------------|------|----------|-------|
| I 94   | E         | 23.0  | W OF LANSING,IL     | 0:35 | 23.0     |       |
| IL 394 | S         | 5.0   | E OF FRD HTS,IL     | 0:41 | 28.0     |       |
| US 30  | E         | 3.3   | IL/IN STATE LINE    | 0:48 | 31.3     |       |
| US 30  | E         | 2.8   | SCHERVILLE,IN       | 0:53 | 34.1     |       |
| US 41  | S         | 81.3  | S OF CARBONDALE,IN  | 2:30 | 115.3    |       |
| IN 63  | SW        | 62.9  | N OF TERRE HAUTE,IN | 3:46 | 178.2    |       |
| US 41  | S         | 114.2 | IN/KY STATE LINE    | 6:03 | 292.4    |       |

**State Mileage Breakdown**

| State        | Toll Miles | Non-Toll Miles | Total Miles   | Toll Cost Within US | Toll Cost Within CA | Converted Cost in U.S. \$ | Converted Cost in CA \$ |
|--------------|------------|----------------|---------------|---------------------|---------------------|---------------------------|-------------------------|
| ALABAMA      | 0.0        | 73.4           | 73.4          | 0.00                |                     |                           |                         |
| FLORIDA      | 0.0        | 645.0          | 645.0         | 0.00                |                     |                           |                         |
| GEORGIA      | 0.0        | 359.1          | 359.1         | 0.00                |                     |                           |                         |
| ILLINOIS     | 0.0        | 31.3           | 31.3          | 0.00                |                     |                           |                         |
| INDIANA      | 0.0        | 261.1          | 261.1         | 0.00                |                     |                           |                         |
| KENTUCKY     | 0.0        | 96.0           | 96.0          | 0.00                |                     |                           |                         |
| <b>Total</b> | <b>0.0</b> | <b>2209.7</b>  | <b>2209.7</b> | <b>0.00</b>         | <b>0.00</b>         |                           |                         |

**Note:**

A map display of the calculated route appears to the right of the expanded details panel. For more information about the map display, refer to the topic entitled, [Viewing Route Output on the Map Display](#).

# CUSTOMIZING INQUIRIES

## Chapter 5

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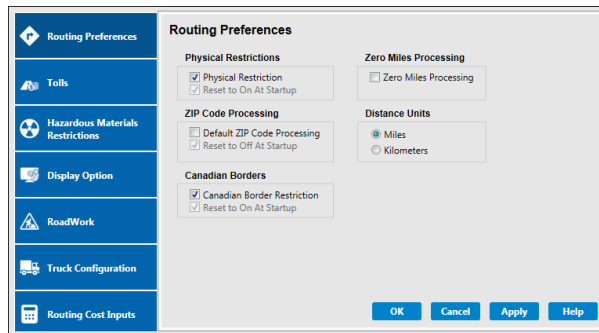
---

## Displaying Route/Mileage Processing Options

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

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

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



---

## Setting Routing 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)

### 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/Dock2Dock, 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.

| Physical Restrictions               |                        |
|-------------------------------------|------------------------|
| <input checked="" type="checkbox"/> | Physical Restriction   |
| <input checked="" type="checkbox"/> | Reset to On At Startup |

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

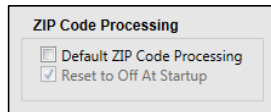
The ZIP Code Processing option lets you choose whether you want to automatically use the default ZIP Code location set by the IntelliRoute database, or choose a specific location from a list.

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/Dock2Dock, 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.

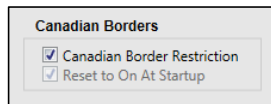
When the Canadian Border Restriction option is **ON** (the default), IntelliRoute calculates a route completely within the U.S., even if traversing a country border would make the route quicker or shorter. You can turn the Canadian Border Restriction OFF, thus allowing a route to cross over the Canadian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

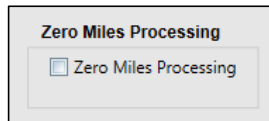
For any MileMaker HHG Mileage inquiry, you can use the Zero Miles Processing option to specify whether IntelliRoute returns a zero mileage or an error message. IntelliRoute interprets MileMaker HHG mileages as the accepted shortest distance between two points on truck usable routes, rounded to the nearest 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 via the LAN interface, in batch mode, or in an Excel formula.

➡ 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

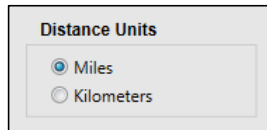
Except for MileMaker HHG, you can calculate a route in kilometers or miles by changing the Distance Units option. Once you set this option, IntelliRoute uses the chosen unit of measure for all mileage and routing calculations.

**Note:** You can only calculate MileMaker HHG routes in miles.

➡ To specify the Distance Units:

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.

---

## Tolls

You can change the amount of toll road usage in your MileMaker Practical, Quickest/Dock2Dock, 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. Click on the Features menu and select Route Processing Options.
2. Click on the Tolls 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.

Tolls Road Bias

Bias: 0

0 = Toll Roads Used  
100 = Toll Roads Not Used

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. Click on the Features menu and select Route Processing Options.
2. Click on the Tolls 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 \$ 1

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.

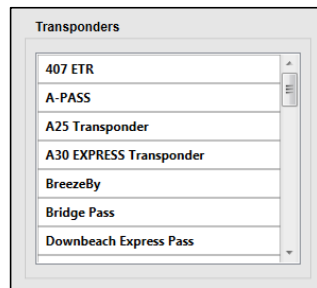
4. Click **OK** to save any changes and exit the dialog box.

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

## Setting the Transponder List

You can select a transponder vendor to display transponder toll costs.

- To specify an exchange rate:
  1. Click on the Features menu and select Route Processing Options.
  2. Click on the Tolls tab.
  3. In the Transponder List, highlight your selection (or click on a highlighted transponder name to deselect) from the list of locations. Use the scrollbar if necessary to search the list.



4. Click OK.

---

## 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/Dock2Dock 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/Dock2Dock and Lowest-Cost Inquiries

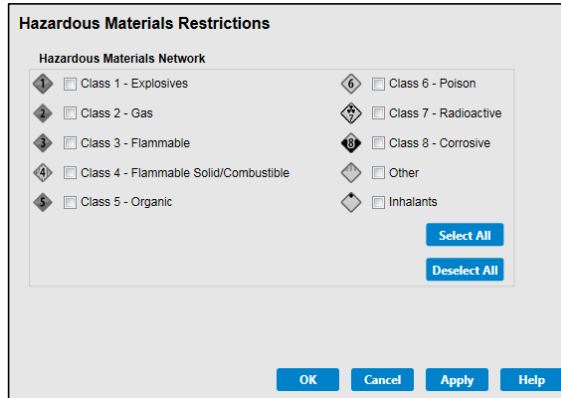
Quickest/Dock2Dock and Lowest-Cost inquiries let you apply specific types of hazardous materials to an inquiry calculation so that IntelliRoute only excludes roads that cannot handle those types of hazardous materials.



To turn on calculations for hazardous materials in Quickest/Dock2Dock and Lowest-Cost inquiries:

1. On the mileage or route dialog box for a Quickest/Dock2Dock 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 5-2:** 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 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/Dock2Dock and Lowest-Cost routes on both the route itinerary and map. You can display rest area icons on the Quickest/Dock2Dock 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/Dock2Dock 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:

State Mileage Breakdown

Alphabetical Order

Route Order

- **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.

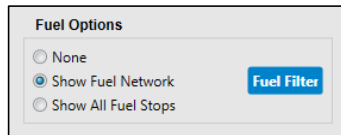
### Selecting the Type of Fuel Stops to Display

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.

## Displaying Weigh Stations

You can display weigh stations for the Quickest/Dock2Dock 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:

**Weigh Stations**

None

Show All

- **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.

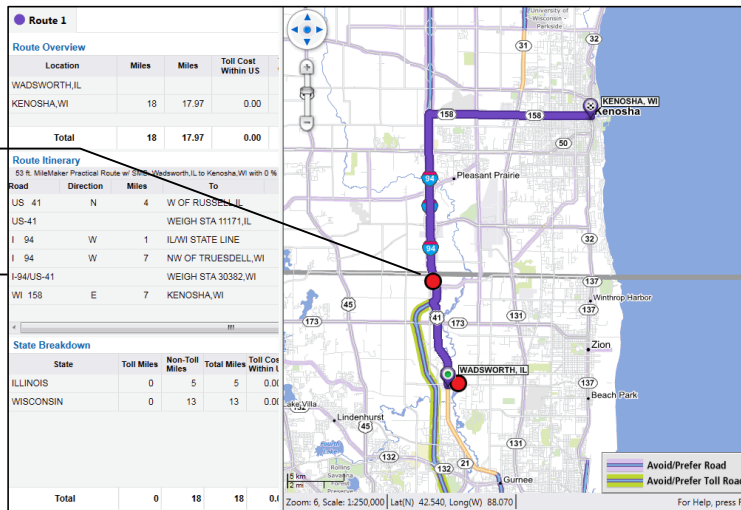
### Note:

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/Dock2Dock and Lowest-Cost route maps of a calculated route.



To display rest areas:

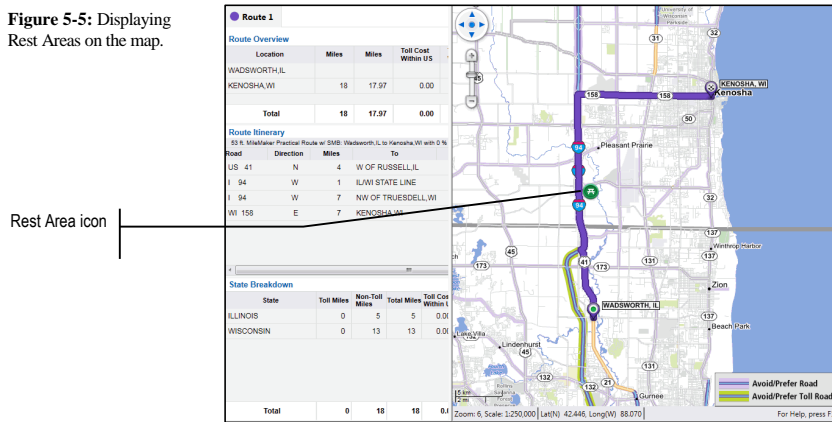
1. Display the Route/Mileage Processing Options dialog box as described above in the section “Displaying Route/Mileage Processing Options.”
2. Click the **Display Options** tab.
3. In the Rest Areas area, click one of the following:

The image shows a dialog box titled "Rest Areas" with five radio button options. The "None" option is selected, indicated by a filled circle next to it. The other options are "Show All", "Show with Rest Rooms", "Show with Overnight Parking", and "Show with Rest Rooms and O/N Parking", each with an empty circle next to it.

- **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.



## 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:

**Newfoundland Abbreviation**

NL

NF

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

---

## 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

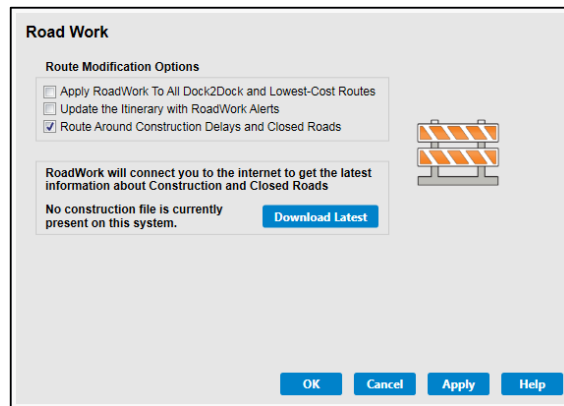
You can download the latest RoadWork updates directly from within IntelliRoute.



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 5-6:** Road Network Update tab of the Route/Mileage Processing Options dialog box.



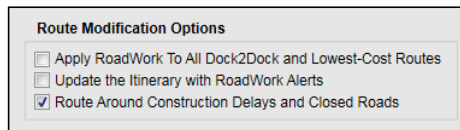
3. Click **Download Latest**.  
IntelliRoute connects with the Internet and downloads the latest RoadWork update file.
4. When IntelliRoute finishes downloading RoadWork updates, click **OK** to save any changes.

## 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/Dock2Dock 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:



| Route Modification Options          |  |
|-------------------------------------|--|
| <input type="checkbox"/>            | Apply RoadWork To All Dock2Dock and Lowest-Cost Routes |
| <input type="checkbox"/>            | Update the Itinerary with RoadWork Alerts              |
| <input checked="" type="checkbox"/> | Route Around Construction Delays and Closed Roads      |

- To automatically take into account closed roads and construction delays when calculating Quickest/Dock2Dock and Lowest-Cost routes, select the **Apply RoadWork To All Quickest/Dock2Dock 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.
  - 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.
4. Click **OK** to save any changes.

### Tip:

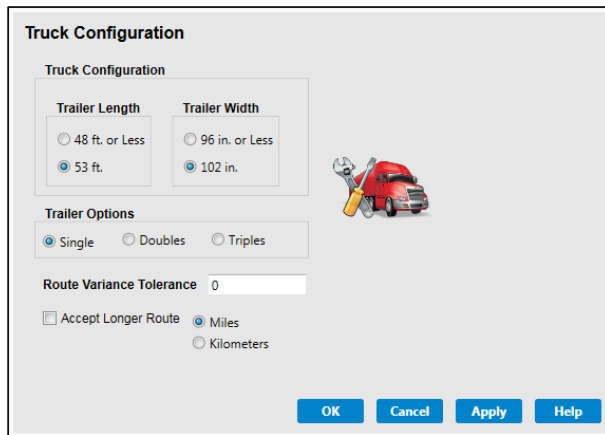
After you calculate a route using RoadWork, you can display a report listing all the construction delays and closed roads in the route by clicking the **Features** menu and selecting **RoadWork** report.

---

## Setting Routing Based on Truck Configuration

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

**Figure 5-7:** Standard truck configuration settings used for Quickest/Dock2Dock and Lowest-Cost inquiries.



**Truck Configuration**

Truck Configuration

**Trailer Length**

48 ft. or Less

53 ft.

**Trailer Width**

96 in. or Less

102 in.

**Trailer Options**

Single  Doubles  Triples

Route Variance Tolerance 0

Accept Longer Route  Miles  Kilometers

OK Cancel Apply Help

However, for different truck configurations, you can execute Quickest/Dock2Dock 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/Dock2Dock or Lowest-Cost inquiry you calculate will use the options you specify in the Truck Configuration tab.



To set Routing Based on Truck Configuration:

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 Configuration** 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 configuration 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 configuration 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/Dock2Dock or Lowest-Cost inquiry is calculated for using truck configuration parameters, messages might appear that indicate whether the route could be calculated using all the truck configuration criteria you specified for the route.

Truck-Type Violation messages are displayed in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes when settings for trailer lengths of 53’, truck widths of 102”, and double or triple trailer options are in violation. The messages identify the violation and include route segment specifics such as direction, distance, and time.

Subsequent Quickest/Dock2Dock or Lowest-Cost inquiries that you calculate will use the options you specified in the **Truck Configuration** 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 Configuration** tab.

For more information on calculating inquiries using truck configuration parameters, see the procedures for entering Quickest/Dock2Dock and Lowest-Cost inquiries in Chapters 3 and 4.

---

## Routing Cost Inputs

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:

**Toll Road Avoid Segments**

Override

Do not Override

- 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**.
4. Set Road Segment avoidance as follows:

**Avoided Segments**

Override

Do not Override

- 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**.
5. 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:

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. Enter values as appropriate for Cost of Time, Maintenance, Fuel Efficiency, and Fuel cost.

**Figure 5-8:** Routing Cost input options.

|  |   |
|--|---|
| <b>Cost Of Time</b><br>Cost/Hour: \$ <input type="text" value="64.40"/>  | <b>Maintenance</b><br>Cost: \$ <input type="text" value="0.17"/><br><input checked="" type="radio"/> Miles<br><input type="radio"/> Kilometers          |
| <b>Fuel Efficiency</b><br>Average Fuel Efficiency: <input type="text" value="6.20"/><br><input checked="" type="radio"/> Miles/Gallon<br><input type="radio"/> Kilometer/Liter | <b>Fuel Cost</b><br>Average Fuel Cost: \$ <input type="text" value="2.95"/><br><input checked="" type="radio"/> Gallons<br><input type="radio"/> Liters |

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

---

## 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 5-9:** Driver Break Options dialog box.

The screenshot shows the 'Driver Break Option' dialog box. It is divided into three main sections, each with a checkbox and associated input fields:

- Hours Of Service Breaks** (checkbox checked):
  - First Scheduled: 0 hrs, 0 mins
  - Breaks Frequency: 0 hrs, 0 mins
  - Breaks Duration: 0 hrs, 0 mins
- Fuel Breaks** (checkbox unchecked):
  - Breaks Frequency: 100 miles
  - Breaks Duration: 0 hrs, 0 mins
- Food Breaks** (checkbox unchecked):
  - Breaks Frequency: 0 hrs, 0 mins
  - Breaks Duration: 0 hrs, 0 mins

At the bottom of the dialog are three buttons: **OK**, **Cancel**, and **Help**.

### 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.

# PRINTING AND COPYING INQUIRY OUTPUT

## Chapter 6

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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 radio buttons on the left panel of the preview window as follows:

| To  | Click Radio Button  |
|---|---------------------|
| Print the details of a specific route                   | Last Route (Route#) |
| Print the details of all the routes you have calculated | All Routes          |
| Print the current map                                   | Current Map         |

3. You can use the checkboxes on the left panel of the preview window as follows:

| To   | Click Check Box |
|--|-----------------|
| Print the Overview page                    | Overview Page   |
| Print the route Itinerary                  | All Routes      |
| Print route map                            | Current Map     |
| Print the street map (Dock2Dock inquiries) | Street Map      |

4. You can use the buttons on the left panel of the preview window as follows:

| To  | Click Button |
|---|--------------|
| Zoom into the document, if available            | Zoom In      |
| Return to the previous zoom level, if available | Zoom Out     |

5. To set the print options, click Print Setup. The Print Setup dialog box appears. The options available in this dialog box vary depending on the type of information you are printing. Specify the print options as available.
6. To return to the preview window, click **OK**.
7. To send the information to the printer, click **Print**.
8. To exit the preview window, click **Close**.

---

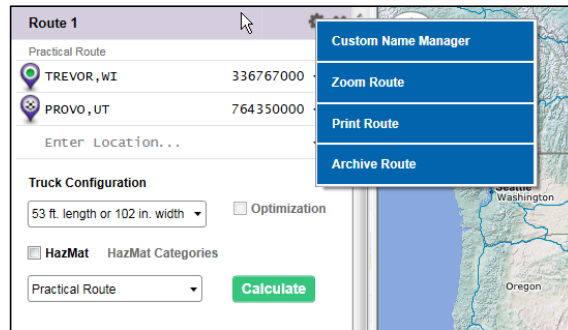
## Printing and Copying Inquiry Output

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.

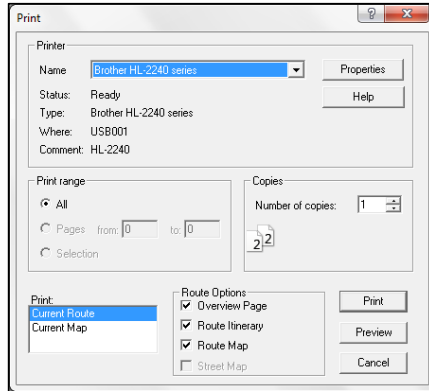
### Printing Mileage/Route Inquiry Results

- To print and copy the output of a mileage or route 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.
  2. Click on the gear icon located on the route inquiry panel. The Route Menu displays.

Figure 6-1: MileMaker route inquiry panel with gear icon selected.



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



**Note:** You can also access the Print dialog box by selecting **Print** from the **File** menu.

4. Specify the pages you want to print and the number of copies.
5. In the **Print** list, select from the following as available:
  - **Current Route** to print the itinerary associated with this route.
  - **Current Map** to print just the map that displays your route.
6. Under **Route Options**, select from the following as available:
  - To print route summary information, click **Route Overview Page**.
  - To print detailed route information, click **Route Itinerary**.
  - To print the route map, click **Route Map**.
7. To print the output, click **Print**.

# WORKING WITH THE MAP

# Chapter 7

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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 and Pan to view specific areas on the map.
- Find/Show and label locations on the map.
- Create a route inquiry directly on the map.
- Avoid or prefer specific road segments for a route inquiry.
- Import locations.
- Use Area Searches.

---

## Viewing Route Output on the Map Display

When you perform a calculation using one of the mileage and routing inquiries offered by IntelliRoute, the graphic route detail from your inquiry will display on the map located to the right of the mileage and route inquiry panel.

To help you better understand and utilize the results of your inquiry, route detail is presented to you in the following ways:

The route is displayed in a bold single color

- A bold single color indicates the route resulting from your inquiry. When you perform multiple mileage or route inquiries, each route will be represented by a different color.

Routes from multiple inquiries display on a single map

- When you perform multiple mileage or route inquiries, the resulting routes will all display on the same map. This enables you to compare routes for the same point pairings using different route calculations, e.g., Practical vs. HHG.

Routeable roads are displayed with a purple highlight

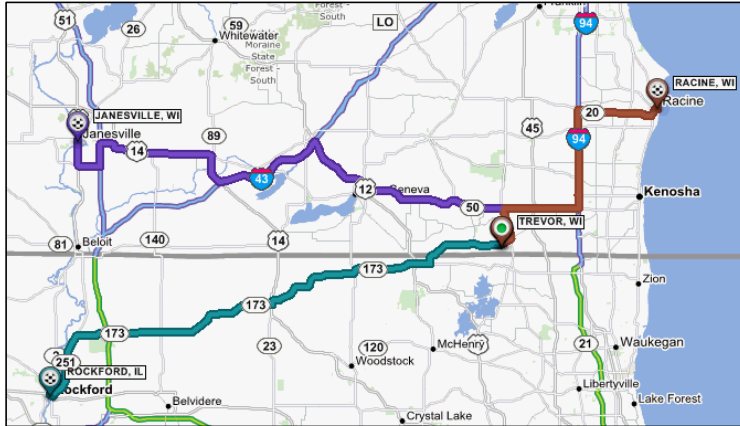
- This color code indicates the truck-usable roads in the highway network. Segments can be selected and designated for preference or avoidance in your route calculations. Note that this color coding along with a map legend will display when you select zoom levels 5 through 10.

Routeable toll roads are displayed as green or with a green highlight

- This color code indicates the truck-usable toll roads in the highway network. Segments can be selected and designated for preference or avoidance in your route calculations. Note that this color coding along with a map legend will display when you select zoom levels 5 through 10.

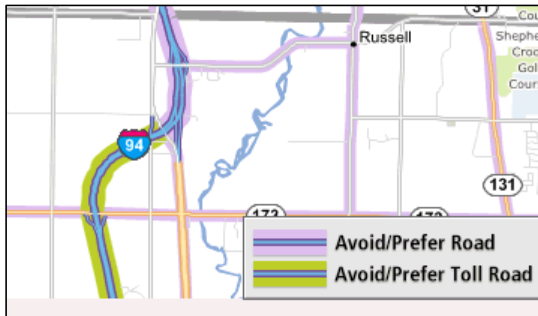
The map below illustrates IntelliRoute's graphic route detail for three separate mileage and route inquiries:

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



The map below illustrates IntelliRoute's color codes to indicate truck-usable roads and tollroads in the highway network. Remember that the color coding and map legend will display when you select zoom levels 5 through 10.

**Figure 7-2:** Changing the view of the itinerary.



## 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 7-3: Changing the view of the itinerary.

**Route 1**

**Route Overview**

| Location     | Miles      | Miles         | Toll Cost Within US | Toll Co Within |
|--------------|------------|---------------|---------------------|----------------|
| CHICAGO,IL   |            |               |                     |                |
| GARLAND,TX   | 918        | 918.22        | 15.54               | C              |
| <b>Total</b> | <b>918</b> | <b>918.22</b> | <b>15.54</b>        | <b>C</b>       |

**Route Itinerary**

53 % Wellfleet Practical Route w/ SMB: Chicago,IL to Garland,TX with 0 % toll road b/c

| Road  | Direction | Miles | To                |
|-------|-----------|-------|-------------------|
| I 90  | E         | 2     | S OF CHICAGO,IL   |
| I 55  | S         | 293   | IL/MO STATE LINE  |
| I 55  | S         | 2     | ST LOUIS,MO       |
| I 44  | W         | 290   | MO/OK STATE LINE  |
| I 44  | W         | 47    | N OF BIG CABIN,OK |
| US 69 | S         | 213   | OK/TX STATE LINE  |
| US 69 | S         | 2     | N OF DENISON,TX   |


**State Breakdown**

| State        | Toll Miles | Non-Toll Miles | Total Miles | Toll Cost Within US | To Wi |
|--------------|------------|----------------|-------------|---------------------|-------|
| ILLINOIS     | 0          | 295            | 295         | 0.00                |       |
| MISSOURI     | 0          | 292            | 292         | 0.00                |       |
| OKLAHOMA     | 47         | 213            | 261         | 8.50                |       |
| TEXAS        | 7          | 64             | 71          | 7.04                |       |
| <b>Total</b> | <b>54</b>  | <b>864</b>     | <b>918</b>  | <b>15.54</b>        |       |

Zoom: 1, Scale: 1:24,000,000 | Lat(N) 40.735, Long(W) 112.940 | For Help, press F1



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 the Map Legend

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 legend:
  - On the **View** menu, click **Legend**.

## Customizing the Map's Appearance

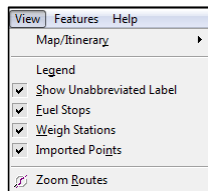
You can display the fuel stops, weigh stations, and rest areas associated with a Quickest/Dock2Dock or Lowest-Cost Route Inquiry.

**Commented [j1]:** We no longer allow this in the enhanced version of IR w/ MM.

## Displaying Map Elements

- ➡ To specify the map elements that you want to display:
  1. On the **View** menu, specify the individual map elements that you want to display on the map by selecting the appropriate check boxes.

**Figure 7-4:** Specifying the map elements you want to display.



## Displaying Fuel Stops

When you run a Quickest/Dock2Dock 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/Dock2Dock or lowest-cost route:
  1. Run a Quickest/Dock2Dock or Lowest-Cost Route Inquiry.
  2. From the **View** menu, verify that the **Fuel Stops** parameter 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.

## 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 **Show Unabbreviated Label**.

---

## 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.

### Zooming In and Out on the Map

You can zoom in and out on the map by:

- Using the rubber band zoom.
- Using the zoom control or mouse wheel.

There are ten zoom levels in IntelliRoute and five zoom levels in the lite version. The current zoom level is displayed in the status bar at the lower left of the screen.

### Using the Rubber Band Zoom

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

### Using the Zoom Control

- To zoom in to a specific location on the map:
    - Click on plus (+) or minus (-) located at each end of the zoom control.
- OR
- Place the cursor on the zoom level bar, hold the mouse button down, and move the bar to the desired zoom level.

**Figure 7-5:** Using the zoom control on the map to zoom.



## Using the Mouse to Zoom

- To zoom in to a specific location on the map:
  - Double click on a map location using the left mouse button
  - Hold cursor over map and use the mouse wheel to adjust the zoom level.

## Zoom in to a Route on the Map

- To zoom in to a route on the map:
  1. Follow the procedure for entering locations and calculating a route inquiry.
  2. With the route displayed on the map, do one of the following:
    - Click on the View menu and select Zoom Routes from the drop-down selection.  
*or*
    - Click on the gear icon located on the route inquiry panel and select Zoom Route.

## Panning the Map

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

- Hold down the mouse button to pan the map in any direction
- Use the Compass to scroll north, south, east, or west.

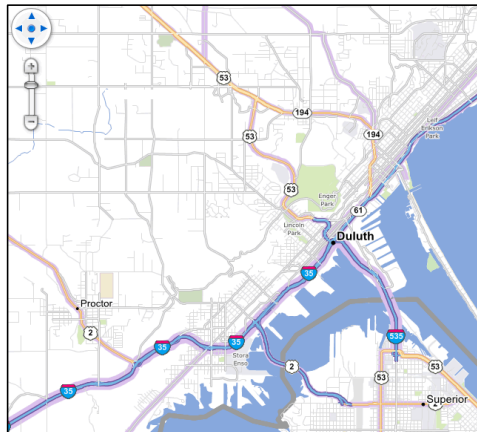
## Using the Mouse button

- ➡ To move the map using the mouse button:
  - Position the cursor on the map, hold down the mouse button, and move the map in any direction.

## Using the Compass

- ➡ To scroll the map using the Compass:
  - To move the map, click on the north, south, east, or west arrow in the compass to move the map in the desired direction.  
The Compass is particularly effective for scrolling the map diagonally.

**Figure 7-6:** Using the Compass to scroll the map.



- Click on the center of the compass to zoom out to the maximum map extent.

## Using Show Location

- ➡ To find a location:
1. On the **Features** menu, click **Show Location**.  
The Show Location dialog box appears.
  2. In the City, St, field, type the city and state for the location and press <ENTER>.

**Note:** For Dock2Dock location inquiries, type the location address, city name, and state or province abbreviation separated by commas without spaces in the Address field. For more information on entering addresses as locations, see “Entering a Street Address Location” in Chapter 2.

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

Locations

Address  Show

City, St

Location  Motor Carriers' Road Atlas Key

Zoom In To This Location  Open New Window

Display Map In Radius Of:   miles  kilometers

Canadian postal codes © 2008 DMTI Spatial  
Portions © 2010 NAVTEQ

**Note:** For mileage and route inquiries in the Newfoundland and Labrador province of Canada, you can set **NL** or **NF** as the province abbreviation used by IntelliRoute. The Newfoundland Abbreviation can be changed from the Features/Route Processing Option/Display Option screen.

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 origin or destination on the map for a route you have already calculated, click **Origin** or **Destination**.
  - To display the location in a new window, click Open New window, and then click Show.

---

## 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, left click on the desired road segment in your route. The segment you select will turn yellow.
2. Right click on the yellow segment. The shortcut menu displays.
3. Click one of the following:
  - To avoid the segment, click **Avoid Segment**. The Avoid Highway Segments dialog box displays the highway name and endpoints 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 endpoints 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/Dock2Dock 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(s) you want to reset.
  3. Click **Reset selected segments**.
  4. Click **Done**.
  
- To reset a segment directly from the map:
  1. On the map, left click on the segment you want to reset. The segment you select will turn yellow.
  2. Right click on the yellow segment. The shortcut menu displays.
  3. Click **Remove Segment**.

**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.*

---

## 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:

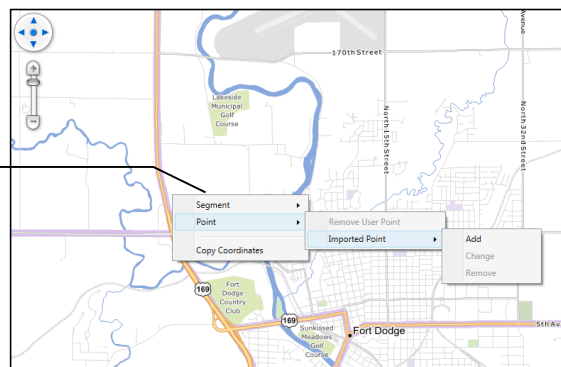
- Identifying a location on the map. You can zoom into the map and click on the specific location you want to import to the database.
- Entering the location information directly into the Add Imported Locations dialog box. You can specify the exact location in the dialog box. Or, you can specify a location, 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. Right click on an area in the map where you want to place a location. The shortcut menu displays.
  3. Select Point/Imported Point/Add.

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

Right-click on an area in the map where you want to place a location and select Point/Imported Point/Add.



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

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

The screenshot shows a dialog box titled "Add Imported Location". It has a title bar with a close button (X). The dialog is divided into two main sections: "User Location" and "Location".

The "User Location" section contains the following fields:

- Name:** A text input field.
- State:** A dropdown menu.
- Pin Type:** A dropdown menu with a truck icon selected.
- Latitude:** A text input field containing "42.52".
- Longitude:** A text input field containing "94.22".

The "Location" section contains:

- A large empty map area.
- A small "Add" button.
- A "Clear" button.

At the bottom of the dialog are three buttons: "OK", "Cancel", and "Help".

Small copyright text at the bottom right reads: "Canadian postal codes © 2008 DMTI Spatial Portions © 2010 NAVTEQ".

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. 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**.

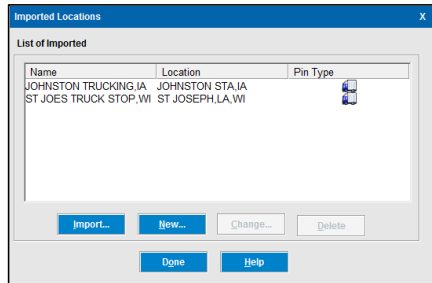
The imported location is associated with a truck pin. For more information on viewing imported locations on the map, see “Displaying Imported Locations on the Map” on page 111.

## 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.

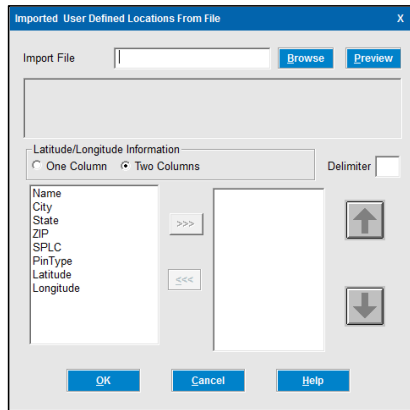


2. To specify the information for an imported location, click **New**. The Add Imported Location dialog box appears.
3. Optionally, type a location in the **Location** box and then click **Add**. You might want to do this to position yourself near the location you will enter in the **Name** field. You can adjust the **Latitude** and **Longitude** fields to the exact coordinates you need by clicking **Clear**.
4. 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.
5. In the **State** box, enter the state or province code for this location.
6. In the **Pin Type** box, select the icon that will appear on the map to mark this location.
7. 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**).
8. To add this imported location to the database, click **OK**. The Imported Locations dialog box appears.
9. To exit, click **Done**.




## 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**.

## Displaying Imported Locations on the Map

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.

## Displaying All Imported Locations

You can show or hide all imported locations on the map.

- ➔ 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.

## 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 **Point/Imported Point/Change**.

The Change Imported Location dialog box appears.

**Figure 7-12:** Changing information for an imported location.

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 **Point/Imported Point/Remove**. The imported point is deleted from the map display.

---

## Using Area Searches

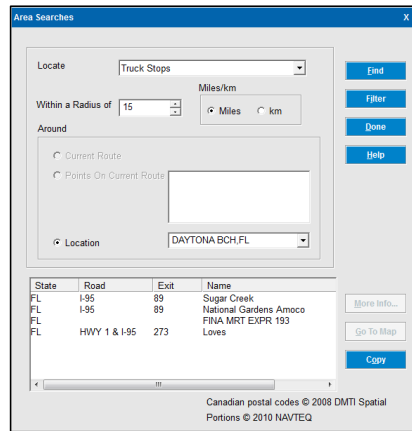
The Area Search feature allows you to search for cities, imported locations, truck stops, and weigh stations within a radius of a location you specify, or along the current route.

### 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 120.

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. 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 7-13:** 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.

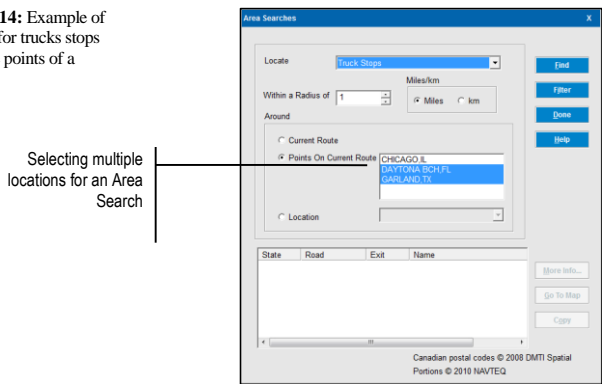


To search for cities, imported locations, truck stops and weigh stations using the results of the current route inquiry:

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 7-14:** Example of searching for trucks stops around the points of a route.



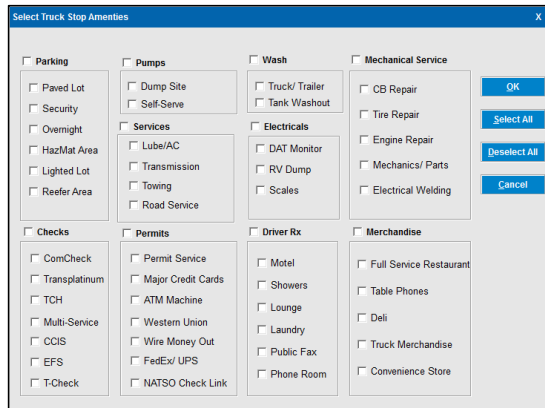
6. If you are searching for truck stops, you can specify the amenities you want available at the truck stops. For more information, see “Filtering Truck Stop Amenities on page 120.
7. To find locations within the radius you specified, click **Find**. The locations will display in the lower half of the 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. Display the Area Search dialog box as shown above in “Searching within a Radius of a Location” or “

1. 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 7-15:** 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

## Chapter 8

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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.

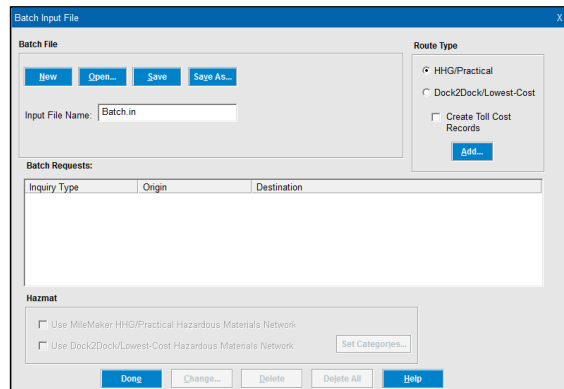
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---

## 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/Dock2Dock/Lowest-Cost** option.

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



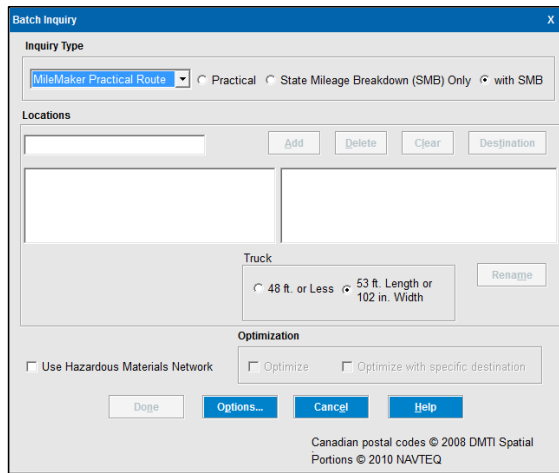
3. Optionally, if the **Quickest/Dock2Dock/Lowest-Cost** option is selected, click the **Create Toll Cost Records** check box if you want toll cost records created.

**Note:**

The **Create Toll Cost Records** check box remains dimmed until the **Quickest/Dock2Dock/Lowest-Cost** radio button is activated.

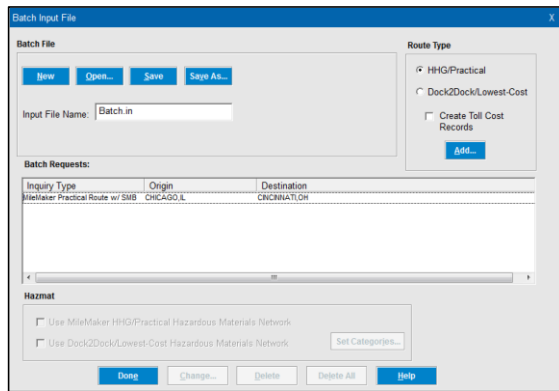
4. Click **Add** to open the Batch Inquiry dialog box.
5. In the Batch Inquiry dialog box, select a route or mileage inquiry in the **Inquiry Type** section.

**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. In the Hazmat area, select the appropriate settings for hazardous materials.
11. 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.

---

12. 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.

---

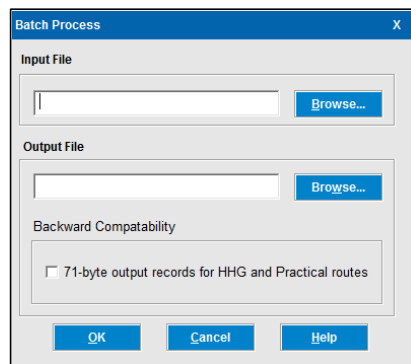
## Processing a Batch File

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. 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

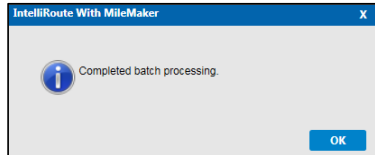


3. In the **Output File** box, type in a name for the output file. You can also click **Browse** to select a different output folder and/or select an existing file to which you can append the Input File.

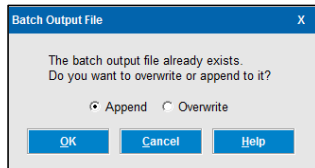
4. Click **OK** to start the batch process.

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:



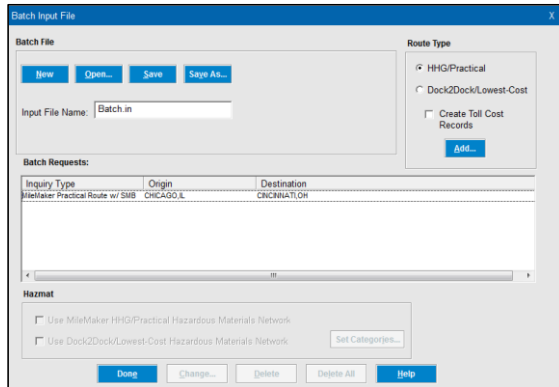
In this case, select **Append** to add the output from the batch input file to the end of the existing batch output file, or select **Overwrite** to replace the batch output file with a new file. Then, click **OK** to start the batch process.

---

## 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.

# ADDITIONAL FEATURES

## Chapter

# 9

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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.
- **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 two characters of the location followed by a comma.
- **Toll Cost** feature which allows you to obtain toll cost breakdown results after calculating a Quickest/Dock2Dock 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/Dock2Dock 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/Dock2Dock 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.
- **Dock2Dock** feature, which allows you to obtain street-level routing and mapping for the Quickest/Dock2Dock and Lowest-Cost Route Inquiries.
- **Truck-Type Violation Messages**, which are displayed in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes when settings for trailer lengths of 53', truck widths of 102", and double or triple trailer options are in violation. The messages identify the violation and include route segment specifics such as direction, distance, and time.
- **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. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select the hub mileage option from the drop-down menu.
  2. In the **ENTER LOCATION...** field, type the locations for the inquiry. For information on creating a mileage inquiry, refer to Chapter 3.
  3. 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.
  4. Click **Calculate** to generate the mileage inquiry.
  5. Click the gear icon and select Archive Route. The Route Archival box displays.

---

**Tip:** You can also access the Archive Route option from the Features Menu.

---

6. 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.
7. In the **Notes** box, enter notes pertaining to this route. A maximum of 40 characters can be entered in the note.

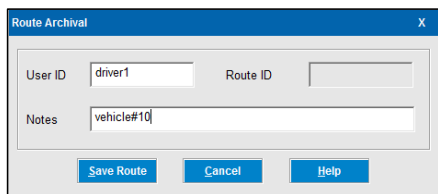
---

**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.

---

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

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



8. To save the route, click **Save Route**.
9. 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. On the route inquiry panel located on the left side of the MileMaker IntelliRoute screen, select the route option from the drop-down menu.
  2. In the **ENTER LOCATION...** field, type the locations for the inquiry. For information on creating a mileage inquiry, refer to Chapter 3.
  3. 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.
  4. Click **Calculate** to generate the mileage inquiry.
  5. Click the gear icon and select Archive Route. The Route Archival box displays.

**Tip:** You can also access the Archive Route option from the Features Menu.

6. 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.
7. 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.

8. To save the route, click **Save Route**.
9. 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 133.
  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 (11/ 1/2015), Destination, To Date (2/ 1/2016), and Notes. Below that is a 'Search By Route ID' section with Route ID and User ID fields 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 | 4        | driver2 | 53 ft. Practical | MILWAUKEE, | ROTHSCHILD, | vehicle#11 | 183       | 02/01/2016 |
| 2 | 3        | driver2 | 53 ft. HHG Full  | CHICAGO,IL | GARLAND, TX | vehicle#11 | 2142      | 02/01/2016 |

At the bottom of the dialog box are buttons for View Route, Load Route, Delete Route, SMD 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.

The screenshot shows the 'Route View' dialog box with the following fields and options:

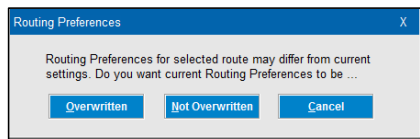
- User ID:** driver2
- Date/Time:** 02/01/2016 13:55
- Route Type:** 53 ft. Practical With SMB
- Route ID:** 4
- Notes:** vehicle#11
- Total Miles:** 183
- Origin/Destination:** MILWAUKEE, WI; ROTHSCHILD, WI
- Optimization:** OFF
- Hazardous Material Restrictions:** OFF
- Categories:** (button)
- Close:** (button)
- Route/Mileage Processing Options:**
  - Physical Restriction:** ON
  - Unit Of Measure:** MILES
  - Canadian Border Restriction:** ON
  - Toll Road Bias:** 0
  - Zero Miles Processing:** (checkbox) Do not use default ZIP code processing
  - Toll Road Avoid Segments:** (input field)
  - Avoid Segments:** (input field)
  - SMB Order:** ALPHABETICAL
  - Exchange Rate:** (input field)
- Routing Costs:**
  - Cost Of Time:** (input field) \$/Hour
  - Maintenance Cost:** (input field)
  - Average Fuel Cost:** (input field)
  - Average Fuel Efficiency:** (input field)

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 133.
  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 133.
  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 133.
  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/kms |
|---|-------------|----------------|--------------------|-----------------|
| 1 | ILLINOIS    | 52             | 73                 | 125             |
| 2 | IOWA        | 0              | 306                | 306             |
| 3 | NEBRASKA    | 0              | 455                | 455             |
| 4 | UTAH        | 0              | 113                | 113             |
| 5 | WISCONSIN   | 0              | 73                 | 73              |
| 6 | WYOMING     | 0              | 403                | 403             |
|   | Total Miles | 52             | 1423               | 1475            |

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**.

## 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/Dock2Dock and Lowest-Cost routes. See Chapter 5 to learn how to set this option.

## 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.

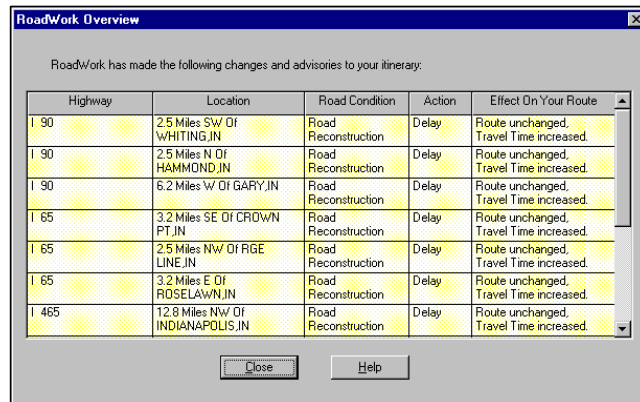


To display the RoadWork report:

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

IntelliRoute displays the RoadWork Overview dialog box.

**Figure 9-7:** 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.

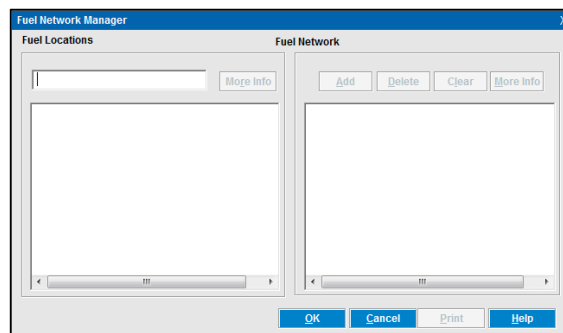


To create a custom Fuel Network:

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

IntelliRoute displays the Fuel Network Manager dialog box:

**Figure 9-8:** 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 9-9:** Fuel Finder dialog box displaying fuel stops along a calculated route.

| State | Road  | Exit | Name                       |
|-------|-------|------|----------------------------|
| GA    | I-285 | 16   | Pilot                      |
| GA    | I-75  |      | Texaco Service             |
| GA    | I-75  |      | Fine Mart                  |
| GA    |       |      | COUNTRY JCT TC             |
| GA    |       |      | TEXACO 1023                |
| GA    | I-75  | 296  | Pilot                      |
| GA    |       |      | PIT STP TRK PLZ BA         |
| GA    | I-75  | 326  | Pilot                      |
| GA    | I-75  | 328  | Pilot Travel Center        |
| GA    | I-75  |      | Pilot                      |
| GA    | I-75  |      | Conoco Fuel Center         |
| GA    | I-75  | 345  | Choo Choo Truck Wash Plaza |
| GA    | I-75  |      | Cochran's Travel Center    |
| GA    | I-75  |      | Fuel Mart                  |
| GA    | I-75  | 348  | 10/20 Fuel Center          |
| GA    | I-75  |      | Texaco Fuel Center         |

**Note:**

You can also access the Fuel Finder by clicking the gear icon on the mileage and route inquiry panel and selecting **Fuel Finder** from the Route Menu.

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 9-10:** 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 an 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 two characters of the location followed by a comma and <ENTER>. 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/Dock2Dock 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/Dock2Dock or Lowest-Cost route.

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/Dock2Dock 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 icon is used to represent weigh stations on the route map:



**Note:**

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

---

## (Rest Area Feature

The rest area feature allows you to display rest area icons on the Quickest/Dock2Dock 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.  
.....

---

## Dock2Dock Feature

The Dock2Dock feature is a separately purchasable option.

The Dock2Dock feature allows you to obtain street-level routing and mapping for the Quickest/Dock2Dock and Lowest-Cost Route Inquiries. The Quickest/Dock2Dock 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 Dock2Dock feature provides the following functionality for the Quickest/Dock2Dock 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.

”.

## Street-Level Map

After clicking the **Calculate** button for a Dock2Dock Route Inquiry or a Lowest-Cost Inquiry, an itinerary is displayed with steps and street directions for the route. The street-level map appears in a separate window to the left of the itinerary when you click the text of a street direction in 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 9-11:** Street-level itinerary.

The screenshot displays a route overview table, a route itinerary with directions, and a state breakdown table.

**Route Overview**

| Location              | Miles | Miles        | Toll Cost Within US | Toll Cost Within CA | Time        | County |
|-----------------------|-------|--------------|---------------------|---------------------|-------------|--------|
| 8255 Central Park Ave |       |              |                     |                     |             |        |
| National Rd           |       | 269.7        | 32.47               | 0.00                | 5:16        |        |
| <b>Total</b>          |       | <b>269.7</b> | <b>32.47</b>        | <b>0.00</b>         | <b>5:16</b> |        |

**Route Itinerary**

53 ft. Dock2Dock Route w/SMB: 8255 Central Park Ave Skokie, IL to National Rd Westpoint, IN with 0 % toll road bias

| Road                               | Direction | Miles |
|------------------------------------|-----------|-------|
| You are at 8255 Central Park Ave   |           |       |
| Go North on Central Park Av        |           | 0.2   |
| Turn left onto Main St             |           | 0.5   |
| Turn left onto Crawford Av         |           | 2.5   |
| Turn right onto W Devon Av         |           | 1.0   |
| Turn left onto IL-50 (N Cicero Av) |           | 0.5   |
| 53 foot Trailer Violation on IL-50 |           |       |

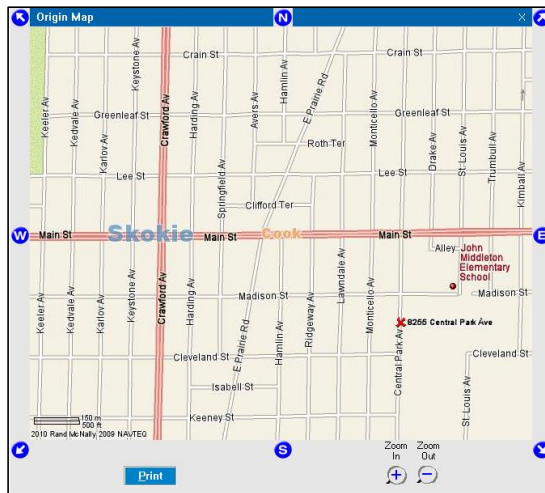
**State Breakdown**

| State        | Toll Miles  | Non-Toll Miles | Total Miles  | Toll Cost Within US | Toll Cost Within CA | Converted Cost in U.S. \$ | Converted Cost in CA \$ |
|--------------|-------------|----------------|--------------|---------------------|---------------------|---------------------------|-------------------------|
| ILLINOIS     | 7.3         | 22.7           | 30.0         | 25.20               |                     |                           |                         |
| INDIANA      | 16.3        | 223.5          | 239.7        | 7.27                |                     |                           |                         |
| <b>Total</b> | <b>23.6</b> | <b>246.1</b>   | <b>269.7</b> | <b>32.47</b>        | <b>0.00</b>         |                           |                         |

- To display a street-level map from a street-level itinerary:
  - Click any one street-level directions.

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 9-12:** 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.

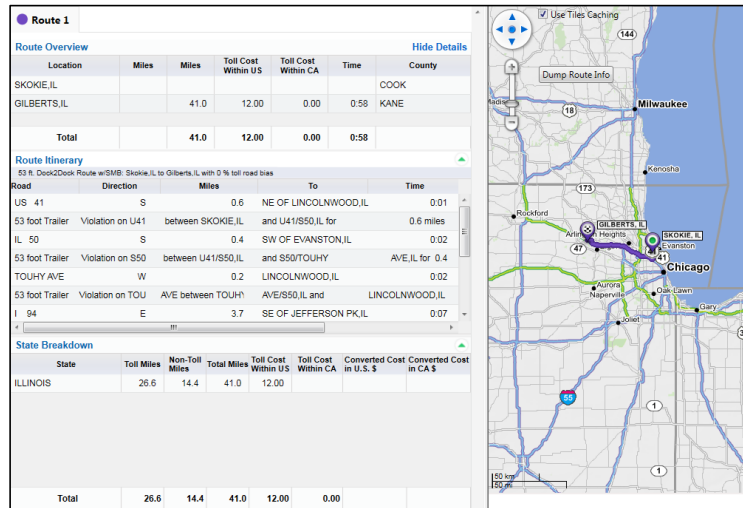
**Note:** If the **Zoom In** button is grayed out (not selectable), the highest level of detail is currently displayed. If the **Zoom Out** button is grayed out (not selectable), the highest level of coverage is currently displayed.

- To print the street-level map:
  - Click **Print**.

## Truck-Type Violation Messages

Truck-Type Violation messages are displayed in the itinerary for Quickest/Dock2Dock and Lowest-Cost routes when settings for trailer lengths of 53', truck widths of 102", and double or triple trailer options are in violation. The messages identify the violation and include route segment specifics such as direction, distance, and time.

Figure 9-13: Viewing Truck-Type Violation messages in the itinerary.



---

## 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:** 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/Dock2Dock 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 9-14:** 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 9-15:** 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)

|   | A             | B           | C | D |
|---|---------------|-------------|---|---|
| 1 | Skokie,IL     | =HHG(A1,A2) |   |   |
| 2 | Richardson,TX |             |   |   |
| 3 |               |             |   |   |
| 4 |               |             |   |   |

Figure 9-16: Formula entry.

## 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

- For HHG mileage with SMB breakdown, type **=HHGSMB(A1,A2)** in cell B1, and press ENTER.

Figure 9-17: Calculating mileage only.

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 9-18:** 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 than 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.

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## 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:

| Record Name     | Characters in Cols 1-2 | Explanation   |
|-----------------|------------------------|---|
| 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

| Cols.   | Number of Characters | Sample Content | Explanation   |
|---------|----------------------|----------------|---|
| 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 zeros (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  
 MICHIGAGO 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  
 MICHIGAGO 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  
 MICHIGAGO 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

# Chapter 10

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## Formulas and Macros

The types of Microsoft Excel formulas available include MileMaker HHG Mileages, MileMaker Practical Mileages, Quickest/Dock2Dock 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 available for mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

**Reminder:**

.....  
All applications, e.g., MicroSoft Excel®, that are used in conjunction with IntelliRoute with MileMaker require 64-bit versions to be installed.  
.....

**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.  
.....

.....  
Another optional parameter "TP" can be used to display transponder total and state cost breakdowns. If you wish to include the "TP" parameter, place it at the end of your formula. If a truck length is included in your formula, "TP" will calculate transponder toll cost breakdowns according to the truck length you specify. Remember to include the quotation marks when using "TP".  
.....

.....  
All HHG and Practical functions have an optional parameter to set Truck Length to 48 or 53. If you do not include this parameter, the setting will be taken from the setting in the main GUI application. If the setting in the main application is 53, then the Excel Add-In will run 53 ft routes if the optional parameter is not added. If the setting in the main application is 48, then the Excel add-in will run 48 ft routes if the optional parameter is not added.  
.....

## 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.

---

**Reminder:**

The HHG Mileage formulas have the following optional parameters:

Total and state toll cost feature formulas are available for mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

Another optional parameter "TP" can be used to display transponder total and state toll cost breakdowns. If you wish to include the "TP" parameter, place it at the end of your formula. If a truck length is included in your formula, "TP" will calculate transponder toll cost breakdowns according to the truck length you specify. Remember to include the quotation marks when using "TP".

All HHG and Practical functions have an optional parameter to set Truck Length to 48 or 53. If you do not include this parameter, the setting will be taken from the setting in the main GUI application.

---

## 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)

HHG(A1,A2,48)

HHG(A1,A2,53)

| 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:

|   | A             | B           | C | D |
|---|---------------|-------------|---|---|
| 1 | Skokie,IL     | =HHG(A1,A2) |   |   |
| 2 | Richardson,TX |             |   |   |
| 3 |               |             |   |   |
| 4 |               |             |   |   |
| 5 |               |             |   |   |

Where cell B1 contains the formula: =HHG(A1,A2).

Figure 10-1:  
HHG formula.

## 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)**

**HHG2(A1,A2,A3,A4,48)**

**HHG2(A1,A2,A3,A4,53)**

| 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     | =HHG2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                    |   |   |
| 3 | Richardson |                    |   |   |
| 4 | TX         |                    |   |   |
| 5 |            |                    |   |   |

Where cell B1 contains the formula: =HHG2(A1,A2,A3,A4)

Figure 10-2:  
HHG2 formula.

## HHGHM2

Calculates MileMaker HHG Mileage using the Hazardous Materials Network 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:

HHGHM2(A1,A2,A3,A4)

HHGHM2(A1,A2,A3,A4,48)

HHGHM2(A1,A2,A3,A4,53)

| 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 |
|---|------------|----------------------|---|
| 1 | Skokie     | =HHGHM2(A1,A2,A3,A4) |   |
| 2 | IL         |                      |   |
| 3 | Richardson |                      |   |
| 4 | TX         |                      |   |
| 5 |            |                      |   |

Where cell B1 contains the formula: =HHGHM2(A1,A2,A3,A4)

Figure 10-3:  
HHGHM2 formula.

## 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)

HHGNC(A1,A2,48)

HHGNC(A1,A2,53)

| 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:

|   | A             | B             | C | D |
|---|---------------|---------------|---|---|
| 1 | Skokie,IL     | =HHGNC(A1,A2) |   |   |
| 2 | Richardson,TX |               |   |   |
| 3 |               |               |   |   |
| 4 |               |               |   |   |
| 5 |               |               |   |   |

Where cell B1 contains the formula: =HHGNC(A1,A2).

Figure 10-4:  
HHGNC formula.

## 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)**

**HHGNC2(A1,A2,A3,A4,48)**

**HHGNC2(A1,A2,A3,A4,53)**

| 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     | =HHGNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                      |   |   |
| 3 | Richardson |                      |   |   |
| 4 | TX         |                      |   |   |
| 5 |            |                      |   |   |

Where cell B1 contains the formula: =HHGNC2(A1,A2,A3,A4)

Figure 10-5:  
HHGNC2 formula.

## 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)

HHGSMB(A1,A2,48)

HHGSMB(A1,A2,53)

| 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     | =HHGSMB(A1,A2) |   |   |
| 2 | Richardson,TX |                |   |   |
| 3 |               |                |   |   |
| 4 |               |                |   |   |
| 5 |               |                |   |   |

Where cell B1 contains the formula: =HHGSMB(A1,A2).

Figure 10-6:  
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)**

**HHGSMB2(A1,A2,A3,A4,48)**

**HHGSMB2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                     | C | D |
|---|------------|-----------------------|---|---|
| 1 | Skokie     | =HHGSMB2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                       |   |   |
| 3 | Richardson |                       |   |   |
| 4 | TX         |                       |   |   |
| 5 |            |                       |   |   |

Where cell B1 contains the formula: =HHGSMB2(A1,A2,A3,A4)

Figure 10-7:  
HHGSMB2 formula.

## 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)**

**HHGSMBNC(A1,A2,48)**

**HHGSMBNC(A1,A2,53)**

| 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     | =HHGSMBNC(A1,A2) |   |   |
| 2 | Richardson,TX |                  |   |   |
| 3 |               |                  |   |   |
| 4 |               |                  |   |   |
| 5 |               |                  |   |   |

Where cell B1 contains the formula: =HHGSMBNC(A1,A2).

**Figure 10-8:**  
HHGSMBNC formula.

## 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)**

**HHGSMBNC2(A1,A2,A3,A4,48)**

**HHGSMBNC2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                       | C | D |
|---|------------|-------------------------|---|---|
| 1 | Skokie     | =HHGSMBNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                         |   |   |
| 3 | Richardson |                         |   |   |
| 4 | TX         |                         |   |   |
| 5 |            |                         |   |   |

Where cell B1 contains the formula: =HHGSMBNC2(A1,A2,A3,A4)

**Figure 10-9:**  
HHGSMBNC2 formula.

## HGTT

Calculates MileMaker HHG Total Toll Cost 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 United States 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:

HGTT(A1,A2)

HGTT(A1,A2,"TP")

HGTT(A1,A2,48)

HGTT(A1,A2,48,"TP")

HGTT(A1,A2,53)

HGTT(A1,A2,53,"TP")

| 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 total toll costs.

-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    | =HGTT(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: =HGTT(A1,A2)

Figure 10-10:  
HGTT formula.

## HGTT2

Calculates MileMaker HHG Total Toll Cost 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 United States 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:

**HGTT2(A1,A2,A3,A4)**

**HGTT2(A1,A2,A3,A4,"TP")**

**HGTT2(A1,A2,A3,A4,48)**

**HGTT2(A1,A2,A3,A4,48,"TP")**

**HGTT2(A1,A2,A3,A4,53)**

**HGTT2(A1,A2,A3,A4,53,"TP")**

| 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 total toll costs.

-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    | =HGTT2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: =HGTT2(A1,A2,A3,A4)

Figure 10-11:  
HGTT2 formula.

## HGTTCNV

Calculates MileMaker HHG Total Toll Cost converted to United States 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 United States 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:

HGTTCNV(A1,A2)

HGTTCNV(A1,A2,"TP")

HGTTCNV(A1,A2,48)

HGTTCNV(A1,A2,48,"TP")

HGTTCNV(A1,A2,53)

HGTTCNV(A1,A2,53,"TP")

| 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 total toll costs.

-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    | =HGTTCNV(A1,A2) |   |   |
| 2 | St. Johns,NF |                 |   |   |
| 3 |              |                 |   |   |
| 4 |              |                 |   |   |
| 5 |              |                 |   |   |

Where cell B1 contains the formula: =HGTTCNV(A1,A2)

Figure 10-12:  
HGTTCNV formula.

## HGTTCNV2

Calculates MileMaker HHG Total Toll Cost converted to United States 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 total converted tolls in United States 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:

**HGTTCNV2(A1,A2,A3,A4)**

**HGTTCNV2(A1,A2,A3,A4,"TP")**

**HGTTCNV2(A1,A2,A3,A4,48)**

**HGTTCNV2(A1,A2,A3,A4,48,"TP")**

**HGTTCNV2(A1,A2,A3,A4,53)**

**HGTTCNV2(A1,A2,A3,A4,53,"TP")**

| 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 total toll costs.

-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    | =HGTTCNV2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                        |   |   |
| 3 | St. Johns |                        |   |   |
| 4 | NF        |                        |   |   |
| 5 |           |                        |   |   |

Where cell B1 contains the formula: =HGTTCNV2(A1,A2,A3,A4)

Figure 10-13:  
HGTTCNV2 formula.

## HGTTCNVNC

Calculates MileMaker HHG total toll costs converted to United States 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:

HGTTCNVNC(A1,A2)

HGTTCNVNC(A1,A2,"TP")

HGTTCNVNC(A1,A2,48)

HGTTCNVNC(A1,A2,48,"TP")

HGTTCNVNC(A1,A2,53)

HGTTCNVNC(A1,A2,53,"TP")

| 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 total toll costs.

-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    | =HGTTCNVNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                   |   |   |
| 3 |              |                   |   |   |
| 4 |              |                   |   |   |
| 5 |              |                   |   |   |

Where cell B1 contains the formula: =HGTTCNVNC(A1,A2)

Figure 10-14:  
HGTTCNVNC formula.

## HGTTCNVNC2

Calculates MileMaker HHG total toll costs converted to United States 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.

The browse screen is disabled for location entries.

### Syntax:

HGTTCNVNC2(A1,A2,A3,A4)

HGTTCNVNC2(A1,A2,A3,A4,"TP")

HGTTCNVNC2(A1,A2,A3,A4,48)

HGTTCNVNC2(A1,A2,A3,A4,48,"TP")

HGTTCNVNC2(A1,A2,A3,A4,53)

HGTTCNVNC2(A1,A2,A3,A4,53,"TP")

| 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 total toll costs.

-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    | =HGTTCNVNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                   |   |   |
| 3 |              |                   |   |   |
| 4 |              |                   |   |   |
| 5 |              |                   |   |   |

Where cell B1 contains the formula: =HGTTCNVNC2(A1,A2,A3,A4)

Figure 10-15:  
HGTTCNVNC2 formula.

## HSTB

Calculates the MileMaker HHG 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:

**HSTB(A1,A2)**

**HSTB(A1,A2,"TP")**

**HSTB(A1,A2,48)**

**HSTB(A1,A2,48,"TP")**

**HSTB(A1,A2,53)**

**HSTB(A1,A2,53,"TP")**

| 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: 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 | Boston,MA    | =HSTB(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: = HSTB(A1,A2).

Figure 10-16:  
HSTB formula.

## HSTB2

Calculates the MileMaker HHG 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:

**HSTB2(A1,A2,A3,A4)**

**HSTB2(A1,A2,A3,A4,"TP")**

**HSTB2(A1,A2,A3,A4,48)**

**HSTB2(A1,A2,A3,A4,48,"TP")**

**HSTB2(A1,A2,A3,A4,53)**

**HSTB2(A1,A2,A3,A4,53,"TP")**

| 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: 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 | Boston    | =HSTB2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: = HSTB2(A1,A2,A3,A4)

Figure 10-17:  
HSTB2 formula.

## HSTBNC

Calculates the MileMaker HHG 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:

**HSTBNC(A1,A2)**

**HSTBNC(A1,A2,"TP")**

**HSTBNC(A1,A2,48)**

**HSTBNC(A1,A2,48,"TP")**

**HSTBNC(A1,A2,53)**

**HSTBNC(A1,A2,53,"TP")**

| 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: 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 | Boston,MA    | =HSTBNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                |   |   |
| 3 |              |                |   |   |
| 4 |              |                |   |   |
| 5 |              |                |   |   |

Where cell B1 contains the formula: = HSTBNC(A1,A2).

Figure 10-18:  
HSTBNC formula.

## HSTBNC2

Calculates the MileMaker HHG 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:

**HSTBNC2(A1,A2,A3,A4)**

**HSTBNC2(A1,A2,A3,A4,"TP")**

**HSTBNC2(A1,A2,A3,A4,48)**

**HSTBNC2(A1,A2,A3,A4,48,"TP")**

**HSTBNC2(A1,A2,A3,A4,53)**

**HSTBNC2(A1,A2,A3,A4,53,"TP")**

| 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: 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 | Boston    | =HSTBNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                       |   |   |
| 3 | St. Johns |                       |   |   |
| 4 | NF        |                       |   |   |
| 5 |           |                       |   |   |

Where cell B1 contains the formula: = HSTBNC2(A1,A2,A3,A4)

**Figure 10-19:**  
HSTBNC2 formula.

## 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.**

**Reminder:**

The Practical Mileage formulas have the following optional parameters:

Total and state toll cost feature formulas are available for mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

Another optional parameter "TP" can be used to display transponder total and state toll cost breakdowns. If you wish to include the "TP" parameter, place it at the end of your formula. If a truck length is included in your formula, "TP" will calculate transponder toll cost breakdowns according to the truck length you specify. Remember to include the quotation marks when using "TP".

All HHG and Practical functions have an optional parameter to set Truck Length to 48 or 53. If you do not include this parameter, the setting will be taken from the setting in the main GUI application.

## 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)**

**PRAC(A1,A2,48)**

**PRAC(A1,A2,53)**

| 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:

|   | A             | B            | C | D |
|---|---------------|--------------|---|---|
| 1 | Skokie,IL     | =PRAC(A1,A2) |   |   |
| 2 | Richardson,TX |              |   |   |
| 3 |               |              |   |   |
| 4 |               |              |   |   |
| 5 |               |              |   |   |

Where cell B1 contains the formula: =PRAC(A1,A2).

Figure 10-20:  
PRAC formula.

## 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)**

**PRAC2(A1,A2,A3,A4,48)**

**PRAC2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                   | C | D |
|---|------------|---------------------|---|---|
| 1 | Skokie     | =PRAC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                     |   |   |
| 3 | Richardson |                     |   |   |
| 4 | TX         |                     |   |   |
| 5 |            |                     |   |   |

Where cell B1 contains the formula: =PRAC2(A1,A2,A3,A4)

Figure 10-21:  
PRAC2 formula.

## PRACHM2

Calculates MileMaker Practical Mileage using the Hazardous Materials Network 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:

**PRACHM2(A1,A2,A3,A4)**

**PRACHM2(A1,A2,A3,A4,48)**

**PRACHM2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                     | C | D |
|---|------------|-----------------------|---|---|
| 1 | Skokie     | =PRACHM2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                       |   |   |
| 3 | Richardson |                       |   |   |
| 4 | TX         |                       |   |   |
| 5 |            |                       |   |   |

Where cell B1 contains the formula: =PRACHM2(A1,A2,A3,A4)

Figure 10-22:  
PRACHM2 formula.

## PRACTM2

Calculates MileMaker Practical Toll 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:

**PRACTM2(A1,A2,A3,A4)**

**PRACTM2(A1,A2,A3,A4,48)**

**PRACTM2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                     | C | D |
|---|------------|-----------------------|---|---|
| 1 | Skokie     | =PRACTM2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                       |   |   |
| 3 | Richardson |                       |   |   |
| 4 | TX         |                       |   |   |
| 5 |            |                       |   |   |

Where cell B1 contains the formula: =PRACTM2(A1,A2,A3,A4)

Figure 10-23:  
PRACTM2 formula.

## PRACHMTM2

Calculates MileMaker Practical Toll Mileage using the Hazardous Materials Network 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:

**PRACHMTM2(A1,A2,A3,A4)**

**PRACHMTM2(A1,A2,A3,A4,48)**

**PRACHMTM2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                       | C | D |
|---|------------|-------------------------|---|---|
| 1 | Skokie     | =PRACHMTM2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                         |   |   |
| 3 | Richardson |                         |   |   |
| 4 | TX         |                         |   |   |
| 5 |            |                         |   |   |

Where cell B1 contains the formula: =PRACHMTM2(A1,A2,A3,A4)

Figure 10-24:  
PRACHMTM2 formula.

## 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)`

`PRACNC(A1,A2,48)`

`PRACNC(A1,A2,53)`

| 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:

|   | A             | B              | C | D |
|---|---------------|----------------|---|---|
| 1 | Skokie,IL     | =PRACNC(A1,A2) |   |   |
| 2 | Richardson,TX |                |   |   |
| 3 |               |                |   |   |
| 4 |               |                |   |   |
| 5 |               |                |   |   |

Where cell B1 contains the formula: =PRACNC(A1,A2).

Figure 10-25:  
PRACNC formula.

## 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)**

**PRACNC2(A1,A2,A3,A4,48)**

**PRACNC2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                     | C | D |
|---|------------|-----------------------|---|---|
| 1 | Skokie,    | =PRACNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                       |   |   |
| 3 | Richardson |                       |   |   |
| 4 | TX         |                       |   |   |
| 5 |            |                       |   |   |

Where cell B1 contains the formula: =PRACNC2(A1,A2,A3,A4)

Figure 10-26:  
PRACNC2 formula.

## 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)

PRACSMB(A1,A2,48)

PRACSMB(A1,A2,53)

| 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:

|   | A             | B                | C | D |
|---|---------------|------------------|---|---|
| 1 | Skokie,IL     | =PRACSMB(A1,A2,) |   |   |
| 2 | Richardson,TX |                  |   |   |
| 3 |               |                  |   |   |
| 4 |               |                  |   |   |
| 5 |               |                  |   |   |

Where cell B1 contains the formula: =PRACSMB(A1,A2).

Figure 10-27:  
PRACSMB formula.

## 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)

PRACSMB2(A1,A2,A3,A4,48)

PRACSMB2(A1,A2,A3,A4,53)

| 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:

|   | A          | B                      | C | D |
|---|------------|------------------------|---|---|
| 1 | Skokie     | =PRACSMB2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                        |   |   |
| 3 | Richardson |                        |   |   |
| 4 | TX         |                        |   |   |
| 5 |            |                        |   |   |

Where cell B1 contains the formula: =PRACSMB2(A1,A2,A3,A4)

Figure 10-28:  
PRACSMB2 formula.

## 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)**

**PRACSMBNC(A1,A2,48)**

**PRACSMBNC(A1,A2,53)**

| 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:

|   | A             | B                 | C | D |
|---|---------------|-------------------|---|---|
| 1 | Skokie,IL     | =PRACSMBNC(A1,A2) |   |   |
| 2 | Richardson,TX |                   |   |   |
| 3 |               |                   |   |   |
| 4 |               |                   |   |   |
| 5 |               |                   |   |   |

Where cell B1 contains the formula: =PRACSMBNC(A1,A2).

Figure 10-29:  
PRACSMBNC formula.

## 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)**

**PRACSMBNC2(A1,A2,A3,A4,48)**

**PRACSMBNC2(A1,A2,A3,A4,53)**

| 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:

|   | A          | B                        | C | D |
|---|------------|--------------------------|---|---|
| 1 | Skokie     | =PRACSMBNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                          |   |   |
| 3 | Richardson |                          |   |   |
| 4 | TX         |                          |   |   |
| 5 |            |                          |   |   |

Where cell B1 contains the formula: =PRACSMBNC2(A1,A2,A3,A4)

Figure 10-30:  
PRACSMBNC2 formula.

## PRTT

Calculates MileMaker Practical Total Toll Cost 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 United States 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:

**PRTT(A1,A2)**

**PRTT(A1,A2,"TP")**

**PRTT(A1,A2,48)**

**PRTT(A1,A2,48,"TP")**

**PRTT(A1,A2,53)**

**PRTT(A1,A2,53,"TP")**

| 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 total toll costs.

-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    | =PRTT(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: =PRTT(A1,A2)

Figure 10-31:  
PRTT formula.

## PRTT2

Calculates MileMaker Practical Total Toll Cost 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 United States 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:

**PRTT2(A1,A2,A3,A4)**

**PRTT2(A1,A2,A3,A4,"TP")**

**PRTT2(A1,A2,A3,A4,48)**

**PRTT2(A1,A2,A3,A4,48,"TP")**

**PRTT2(A1,A2,A3,A4,53)**

**PRTT2(A1,A2,A3,A4,53,"TP")**

| 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 total toll costs.

-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    | =PRTT2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: =PRTT2(A1,A2,A3,A4)

Figure 10-32:  
PRTT2 formula.

## PRTTCNV

Calculates MileMaker Practical Total Toll Cost converted to United States 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 United States 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:

**PRTTCNV(A1,A2)**

**PRTTCNV(A1,A2,"TP")**

**PRTTCNV(A1,A2,48)**

**PRTTCNV(A1,A2,48,"TP")**

**PRTTCNV(A1,A2,53)**

**PRTTCNV(A1,A2,53,"TP")**

| 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 total toll costs.

-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    | =PRTTCNV(A1,A2) |   |   |
| 2 | St. Johns,NF |                 |   |   |
| 3 |              |                 |   |   |
| 4 |              |                 |   |   |
| 5 |              |                 |   |   |

Where cell B1 contains the formula: =PRTTCNV(A1,A2)

Figure 10-33:  
PRTTCNV formula.

## PRTTCNV2

Calculates MileMaker Practical Total Toll Cost converted to United States 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 total converted tolls in United States 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:

**PRTTCNV2(A1,A2,A3,A4)**

**PRTTCNV2(A1,A2,A3,A4,"TP")**

**PRTTCNV2(A1,A2,A3,A4,48)**

**PRTTCNV2(A1,A2,A3,A4,48,"TP")**

**PRTTCNV2(A1,A2,A3,A4,53)**

**PRTTCNV2(A1,A2,A3,A4,53,"TP")**

| 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 total toll costs.

-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    | =PRTTCNV2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                        |   |   |
| 3 | St. Johns |                        |   |   |
| 4 | NF        |                        |   |   |
| 5 |           |                        |   |   |

Where cell B1 contains the formula: =PRTTCNV2(A1,A2,A3,A4)

Figure 10-34:  
PRTTCNV2 formula.

## PRTTCNVNC

Calculates MileMaker Practical total toll costs converted to United States 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:

`PRTTCNVNC(A1,A2)`

`PRTTCNVNC(A1,A2,"TP")`

`PRTTCNVNC(A1,A2,48)`

`PRTTCNVNC(A1,A2,48,"TP")`

`PRTTCNVNC(A1,A2,53)`

`PRTTCNVNC(A1,A2,53,"TP")`

| 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 total toll costs.

-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    | =PRTTCNVNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                   |   |   |
| 3 |              |                   |   |   |
| 4 |              |                   |   |   |
| 5 |              |                   |   |   |

Where cell B1 contains the formula: =PRTTCNVNC(A1,A2)

Figure 10-35:  
PRTTCNVNC formula.

## PRTTCNVNC2

Calculates MileMaker Practical total toll costs converted to United States 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.

The browse screen is disabled for location entries.

### Syntax:

**PRTTCNVNC2(A1,A2,A3,A4)**

**PRTTCNVNC2(A1,A2,A3,A4,"TP")**

**PRTTCNVNC2(A1,A2,A3,A4,48)**

**PRTTCNVNC2(A1,A2,A3,A4,48,"TP")**

**PRTTCNVNC2(A1,A2,A3,A4,53)**

**PRTTCNVNC2(A1,A2,A3,A4,53,"TP")**

| 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 total toll costs.

-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    | =PRTTCNVNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                          |   |   |
| 3 | St. Johns |                          |   |   |
| 4 | NF        |                          |   |   |
| 5 |           |                          |   |   |

Where cell B1 contains the formula: =PRTTCNVNC2(A1,A2,A3,A4)

Figure 10-36:  
PRTTCNVNC2 formula.

## PSTB

Calculates the Practical 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:

**PSTB(A1,A2)**

**PSTB(A1,A2,"TP")**

**PSTB(A1,A2,48)**

**PSTB(A1,A2,48,"TP")**

**PSTB(A1,A2,53)**

**PSTB(A1,A2,53,"TP")**

| 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: 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:

|   | A            | B            | C | D |
|---|--------------|--------------|---|---|
| 1 | Boston,MA    | =PSTB(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: = PSTB(A1,A2).

Figure 10-37:  
PSTB formula.

## PSTB2

Calculates the Practical 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:

**PSTB2(A1,A2,A3,A4)**

**PSTB2(A1,A2,A3,A4,"TP")**

**PSTB2(A1,A2,A3,A4,48)**

**PSTB2(A1,A2,A3,A4,48,"TP")**

**PSTB2(A1,A2,A3,A4,53)**

**PSTB2(A1,A2,A3,A4,53,"TP")**

| 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: 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:

|   | A         | B                   | C | D |
|---|-----------|---------------------|---|---|
| 1 | Boston    | =PSTB2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: = PSTB2(A1,A2,A3,A4)

Figure 10-38:  
PSTB2 formula.

## PSTBNC

Calculates the Practical 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:

**PSTBNC(A1,A2)**

**PSTBNC(A1,A2,"TP")**

**PSTBNC(A1,A2,48)**

**PSTBNC(A1,A2,48,"TP")**

**PSTBNC(A1,A2,53)**

**PSTBNC(A1,A2,53,"TP")**

| 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: 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:

|   | A            | B              | C | D |
|---|--------------|----------------|---|---|
| 1 | Boston,MA    | =PSTBNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                |   |   |
| 3 |              |                |   |   |
| 4 |              |                |   |   |
| 5 |              |                |   |   |

Where cell B1 contains the formula: = PSTBNC(A1,A2).

Figure 10-39:  
PSTBNC formula.

## PSTBNC2

Calculates the Practical 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:

**PSTBNC2(A1,A2,A3,A4)**

**PSTBNC2(A1,A2,A3,A4,"TP")**

**PSTBNC2(A1,A2,A3,A4,48)**

**PSTBNC2(A1,A2,A3,A4,48,"TP")**

**PSTBNC2(A1,A2,A3,A4,53)**

**PSTBNC2(A1,A2,A3,A4,53,"TP")**

| 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: 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:

|   | A         | B                     | C | D |
|---|-----------|-----------------------|---|---|
| 1 | Boston    | =PSTBNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                       |   |   |
| 3 | St. Johns |                       |   |   |
| 4 | NF        |                       |   |   |
| 5 |           |                       |   |   |

Where cell B1 contains the formula: = PSTBNC2(A1,A2,A3,A4)

Figure 10-40:  
PSTBNC2 formula.

## Quickest/Dock2Dock Mileage Formulas

Quickest/Dock2Dock 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.

**Reminder:**

The Quickest/Dock2Dock Mileage formulas have the following optional parameters:

Total and state toll cost feature formulas are available for mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

Another optional parameter "TP" can be used to display transponder total and state toll cost breakdowns. If you wish to include the "TP" parameter, place it at the end of your formula. Remember to include the quotation marks when using "TP".

Quickest/Dock2Dock and Lowest Cost functions do NOT have an optional parameter to set Truck Length to 48 or 53. Only HHG and Practical functions have an optional parameter to set Truck Length.

## QUICK

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICK(A1,A2) |   |   |
| 2 | Richardson,TX |               |   |   |
| 3 |               |               |   |   |
| 4 |               |               |   |   |
| 5 |               |               |   |   |

Where cell B1 contains the formula: =QUICK(A1,A2).

Figure 10-41:  
QUICK formula.

## QUICK2

Calculates Quickest/Dock2Dock 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.  |
| A4        | The cell containing the value of the second portion of the destination location. |

### Returns:

If successful: Quickest/Dock2Dock 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     | =QUICK2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                      |   |   |
| 3 | Richardson |                      |   |   |
| 4 | TX         |                      |   |   |
| 5 |            |                      |   |   |

Where cell B1 contains the formula: =QUICK2(A1,A2,A3,A4)

Figure 10-42:  
QUICK2 formula.

## QUICKNC

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKNC(A1,A2) |   |   |
| 2 | Richardson,TX |                 |   |   |
| 3 |               |                 |   |   |
| 4 |               |                 |   |   |
| 5 |               |                 |   |   |

Where cell B1 contains the formula: =QUICKNC(A1,A2).

Figure 10-43:  
QUICKNC formula.

## QUICKNC2

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                        |   |   |
| 3 | Richardson |                        |   |   |
| 4 | TX         |                        |   |   |
| 5 |            |                        |   |   |

Where cell B1 contains the formula: =QUICKNC2(A1,A2,A3,A4)

Figure 10-44:  
QUICKNC2 formula.

## QUICKSMB

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKSMB(A1,A2) |   |   |
| 2 | Richardson,TX |                  |   |   |
| 3 |               |                  |   |   |
| 4 |               |                  |   |   |
| 5 |               |                  |   |   |

Where cell B1 contains the formula: =QUICKSMB(A1,A2).

Figure 10-45:  
QUICKSMB formula.

## QUICKSMB2

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKSMB2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                         |   |   |
| 3 | Richardson |                         |   |   |
| 4 | TX         |                         |   |   |
| 5 |            |                         |   |   |

Where cell B1 contains the formula: =QUICKSMB2(A1,A2,A3,A4)

Figure 10-46:  
QUICKSMB2 formula.

## QUICKSMBNC

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKSMBNC(A1,A2) |   |   |
| 2 | Richardson,TX |                    |   |   |
| 3 |               |                    |   |   |
| 4 |               |                    |   |   |
| 5 |               |                    |   |   |

Where cell B1 contains the formula: =QUICKSMBNC(A1,A2).

Figure 10-47:  
QUICKSMBNC formula.

## QUICKSMBNC2

Calculates Quickest/Dock2Dock 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/Dock2Dock 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     | =QUICKSMBNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                           |   |   |
| 3 | Richardson |                           |   |   |
| 4 | TX         |                           |   |   |
| 5 |            |                           |   |   |

Where cell B1 contains the formula: =QUICKSMBNC2(A1,A2,A3,A4)

Figure 10-48:  
QUICKSMBNC2  
formula.

## QKTT

Calculates the Quickest/Dock2Dock 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:

**QKTT(A1,A2)**

**QKTT(A1,A2,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTT (A1,A2) |   |   |
| 2 | St. Johns,NF |               |   |   |
| 3 |              |               |   |   |
| 4 |              |               |   |   |
| 5 |              |               |   |   |

Where cell B1 contains the formula: =QKTT(A1,A2).

Figure 10-49:  
QKTT formula.

## QKTT2

Calculates the Quickest/Dock2Dock 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:

**QKTT2(A1,A2,A3,A4)**

**QKTT2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTT2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: = QKTT2(A1,A2,A3,A4)

Figure 10-50:  
QKTT2 formula.

## QKTTNC

This formula calculates the Quickest/Dock2Dock 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:

**QKTTNC(A1,A2)**

**QKTTNC(A1,A2,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTTNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                |   |   |
| 3 |              |                |   |   |
| 4 |              |                |   |   |
| 5 |              |                |   |   |

Where cell B1 contains the formula: = QKTTNC(A1,A2).

Figure 10-51:  
QKTTNC formula.

## QKTTNC2

Calculates the Quickest/Dock2Dock 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:

**QKTTNC2(A1,A2,A3,A4)**

**QKTTNC2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTTNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                       |   |   |
| 3 | St. Johns |                       |   |   |
| 4 | NF        |                       |   |   |
| 5 |           |                       |   |   |

Where cell B1 contains the formula: = QKTTNC2(A1,A2,A3,A4)

Figure 10-52:  
QKTTNC2 formula.

## QKTTCNV

Calculates the Quickest/Dock2Dock 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:

**QKTTCNV(A1,A2)**

**QKTTCNV(A1,A2,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTTCNV(A1,A2) |   |   |
| 2 | St. Johns,NF |                 |   |   |
| 3 |              |                 |   |   |
| 4 |              |                 |   |   |
| 5 |              |                 |   |   |

Where cell B1 contains the formula: = QKTTCNV(A1,A2).

Figure 10-53:  
QKTTCNV formula.

## QKTTCNV2

Calculates the Quickest/Dock2Dock 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:

**QKTTCNV2(A1,A2,A3,A4)**

**QKTTCNV2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTTCNV2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                        |   |   |
| 3 | St. Johns |                        |   |   |
| 4 | NF        |                        |   |   |
| 5 |           |                        |   |   |

Where cell B1 contains the formula: = QKTTCNV2(A1,A2,A3,A4)

Figure 10-54:  
QKTTCNV2 formula.

## QKTTCNVNC

Calculates the Quickest/Dock2Dock 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:

QKTTCNVNC(A1,A2)

QKTTCNVNC(A1,A2,"TP")

| 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/Dock2Dock total toll costs.

-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    | =QKTTCNVNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                   |   |   |
| 3 |              |                   |   |   |
| 4 |              |                   |   |   |
| 5 |              |                   |   |   |

Where cell B1 contains the formula: = QKTTCNVNC(A1,A2)

Figure 10-55:  
QKTTCNVNC formula.

## QKTTCNVNC2

Calculates the Quickest/Dock2Dock 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:

**QKTTCNVNC2(A1,A2,A3,A4)**

**QKTTCNVNC2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock total toll costs.

-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    | =QKTTCNVNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                          |   |   |
| 3 | St. Johns |                          |   |   |
| 4 | NF        |                          |   |   |
| 5 |           |                          |   |   |

Where cell B1 contains the formula: = QKTTCNVNC2(A1,A2,A3,A4)

Figure 10-56:  
QKTTCNVNC2 formula.

## QSTB

Calculates the Quickest/Dock2Dock 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)**

**QSTB(A1,A2,"TP")**

| 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/Dock2Dock 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 | Boston,MA    | =QSTB(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: = QSTB(A1,A2).

Figure 10-57:  
QSTB formula.

## QSTB2

Calculates the Quickest/Dock2Dock 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)**

**QSTB2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock 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 | Boston    | =QSTB2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: = QSTB2(A1,A2,A3,A4)

Figure 10-58:  
QSTB2 formula.

## QSTBNC

Calculates the Quickest/Dock2Dock 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)**

**QSTBNC(A1,A2,"TP")**

| 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/Dock2Dock 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 | Boston,MA    | =QSTBNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                |   |   |
| 3 |              |                |   |   |
| 4 |              |                |   |   |
| 5 |              |                |   |   |

Where cell B1 contains the formula: = QSTBNC(A1,A2).

Figure 10-59:  
QSTBNC formula.

## QSTBNC2

Calculates the Quickest/Dock2Dock 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)**

**QSTBNC2(A1,A2,A3,A4,"TP")**

| 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/Dock2Dock 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 | Boston    | =QSTBNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                       |   |   |
| 3 | St. Johns |                       |   |   |
| 4 | NF        |                       |   |   |
| 5 |           |                       |   |   |

Where cell B1 contains the formula: = QSTBNC2(A1,A2,A3,A4)

Figure 10-60:  
QSTBNC2 formula.

## 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.

**Reminder:**

The Lowest-Cost Mileage formulas have the following optional parameters:

Total and state toll cost feature formulas are available for mileage calculations, including an Exchange Rate formula for returning the US Dollar to Canadian Dollar exchange rate set in IntelliRoute.

Another optional parameter "TP" can be used to display transponder total and state toll cost breakdowns. If you wish to include the "TP" parameter, place it at the end of your formula. Remember to include the quotation marks when using "TP".

Quickest/Dock2Dock and Lowest Cost functions do NOT have an optional parameter to set Truck Length to 48 or 53. Only HHG and Practical functions have an optional parameter to set Truck Length.

## 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.

### Example:

|   | A             | B          | C | D |
|---|---------------|------------|---|---|
| 1 | Skokie,IL     | =LC(A1,A2) |   |   |
| 2 | Richardson,TX |            |   |   |
| 3 |               |            |   |   |
| 4 |               |            |   |   |
| 5 |               |            |   |   |

Where cell B1 contains the formula: =LC(A1,A2).

Figure 10-61:  
LC formula.

## LC2B

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:

LC2B(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 | Skokie     | =LC2B(A1,A2,A3,A4) |   |   |
| 2 | IL         |                    |   |   |
| 3 | Richardson |                    |   |   |
| 4 | TX         |                    |   |   |
| 5 |            |                    |   |   |

Where cell B1 contains the formula: =LC2B(A1,A2,A3,A4)

Figure 10-62:  
LC2B formula.

## 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     | =LCNC(A1,A2) |   |   |
| 2 | Richardson,TX |              |   |   |
| 3 |               |              |   |   |
| 4 |               |              |   |   |
| 5 |               |              |   |   |

Where cell B1 contains the formula: =LCNC(A1,A2).

Figure 10-63:  
LCNC formula.

## 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.      |
| 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     | =LCNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                     |   |   |
| 3 | Richardson |                     |   |   |
| 4 | TX         |                     |   |   |
| 5 |            |                     |   |   |

Where cell B1 contains the formula: =LCNC2(A1,A2,A3,A4)

Figure 10-64:  
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:

|   | A             | B             | C | D |
|---|---------------|---------------|---|---|
| 1 | Skokie,IL     | =LCSMB(A1,A2) |   |   |
| 2 | Richardson,TX |               |   |   |
| 3 |               |               |   |   |
| 4 |               |               |   |   |
| 5 |               |               |   |   |

Where cell B1 contains the formula: =LCSMB(A1,A2).

Figure 10-65:  
LCSMB formula.

## 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.

### Example:

|   | A          | B                    | C | D |
|---|------------|----------------------|---|---|
| 1 | Skokie     | =LCSMB2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                      |   |   |
| 3 | Richardson |                      |   |   |
| 4 | TX         |                      |   |   |
| 5 |            |                      |   |   |

Where cell B1 contains the formula: =LCSMB2(A1,A2,A3,A4)

Figure 10-66:  
LCSMB2 formula.

## 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:

|   | A             | B               | C | D |
|---|---------------|-----------------|---|---|
| 1 | Skokie,IL     | =LCSMBNC(A1,A2) |   |   |
| 2 | Richardson,TX |                 |   |   |
| 3 |               |                 |   |   |
| 4 |               |                 |   |   |
| 5 |               |                 |   |   |

Where cell B1 contains the formula: =LCSMBNC(A1,A2).

Figure 10-67:  
LCSMBNC formula.

## 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     | =LCSMBNC2(A1,A2,A3,A4) |   |   |
| 2 | IL         |                        |   |   |
| 3 | Richardson |                        |   |   |
| 4 | TX         |                        |   |   |
| 5 |            |                        |   |   |

Where cell B1 contains the formula: =LCSMBNC2(A1,A2,A3,A4)

Figure 10-68:  
LCSMBNC2 formula.

## 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)**

**LCTT(A1,A2,"TP")**

| 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    | =LCTT(A1,A2) |   |   |
| 2 | St. Johns,NF |              |   |   |
| 3 |              |              |   |   |
| 4 |              |              |   |   |
| 5 |              |              |   |   |

Where cell B1 contains the formula: = LCTT(A1,A2).

Figure 10-69:  
LCTT formula.

## 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)**

**LCTT2(A1,A2,A3,A4,"TP")**

| 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    | =LCTT2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                     |   |   |
| 3 | St. Johns |                     |   |   |
| 4 | NF        |                     |   |   |
| 5 |           |                     |   |   |

Where cell B1 contains the formula: = LCTT2(A1,A2,A3,A4)

Figure 10-70:  
LCTT2 formula.

## 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)**

**LCTTNC(A1,A2,"TP")**

| 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    | =LCTTNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                |   |   |
| 3 |              |                |   |   |
| 4 |              |                |   |   |
| 5 |              |                |   |   |

Where cell B1 contains the formula: = LCTTNC(A1,A2).

Figure 10-71:  
LCTTNC formula.

## 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)**

**LCTTNC2(A1,A2,A3,A4,"TP")**

| 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    | =LCTTNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                       |   |   |
| 3 | St. Johns |                       |   |   |
| 4 | NF        |                       |   |   |
| 5 |           |                       |   |   |

Where cell B1 contains the formula: = LCTTNC2(A1,A2,A3,A4)

Figure 10-72:  
LCTTNC2 formula.

## 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)

LCTTCNV(A1,A2,"TP")

| 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    | =LCTTCNV(A1,A2) |   |   |
| 2 | St. Johns,NF |                 |   |   |
| 3 |              |                 |   |   |
| 4 |              |                 |   |   |
| 5 |              |                 |   |   |

Where cell B1 contains the formula: = LCTTCNV(A1,A2).

Figure 10-73:  
LCTTCNV formula.

## 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)**

**LCTTCNV2(A1,A2,A3,A4,"TP")**

| 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    | =LCTTCNV2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                        |   |   |
| 3 | St. Johns |                        |   |   |
| 4 | NF        |                        |   |   |
| 5 |           |                        |   |   |

Where cell B1 contains the formula: = LCTTCNV2(A1,A2,A3,A4)

Figure 10-74:  
LCTTCNV2 formula.

## 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)

LCTTCNVNC(A1,A2,"TP")

| 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    | =LCTTCNVNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                   |   |   |
| 3 |              |                   |   |   |
| 4 |              |                   |   |   |
| 5 |              |                   |   |   |

Where cell B1 contains the formula: = LCTTCNVNC(A1,A2).

Figure 10-75:  
LCTTCNVNC formula.

## 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)**

**LCTTCNVNC2(A1,A2,A3,A4,"TP")**

| 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    | =LCTTCNVNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                          |   |   |
| 3 | St. Johns |                          |   |   |
| 4 | NF        |                          |   |   |
| 5 |           |                          |   |   |

Where cell B1 contains the formula: = LCTTCNVNC2(A1,A2,A3,A4)

**Figure 10-76:**  
LCTTCNVNC2 formula.

## 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)**

**LCSTB(A1,A2,"TP")**

| 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:

|   | A            | B             | C | D |
|---|--------------|---------------|---|---|
| 1 | Boston,MA    | =LCSTB(A1,A2) |   |   |
| 2 | St. Johns,NF |               |   |   |
| 3 |              |               |   |   |
| 4 |              |               |   |   |
| 5 |              |               |   |   |

Where cell B1 contains the formula: = LCSTB(A1,A2).

Figure 10-77:  
LCSTB formula.

## 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)**

**LCSTB2(A1,A2,A3,A4,"TP")**

| 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 | Boston    | =LCSTB2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                      |   |   |
| 3 | St. Johns |                      |   |   |
| 4 | NF        |                      |   |   |
| 5 |           |                      |   |   |

Where cell B1 contains the formula: = LCSTB2(A1,A2,A3,A4)

Figure 10-78:  
LCSTB2 formula.

## 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)

LCSTBNC(A1,A2,"TP")

| 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:

|   | A            | B               | C | D |
|---|--------------|-----------------|---|---|
| 1 | Boston,MA    | =LCSTBNC(A1,A2) |   |   |
| 2 | St. Johns,NF |                 |   |   |
| 3 |              |                 |   |   |
| 4 |              |                 |   |   |
| 5 |              |                 |   |   |

Where cell B1 contains the formula: = LCSTBNC(A1,A2).

Figure 10-79:  
LCSTBNC formula.

## 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)**

**LCSTBNC2(A1,A2,A3,A4,"TP")**

| 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 | Boston    | =LCSTBNC2(A1,A2,A3,A4) |   |   |
| 2 | MA        |                        |   |   |
| 3 | St. Johns |                        |   |   |
| 4 | NF        |                        |   |   |
| 5 |           |                        |   |   |

Where cell B1 contains the formula: = LCSTBNC2(A1,A2,A3,A4)

**Figure 10-80:**  
LCSTBNC2 formula.

## 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:

|   | A                  | B |
|---|--------------------|---|
| 1 | =GetExchangeRate() |   |
| 2 |                    |   |
| 3 |                    |   |

Where cell A1 contains the formula: = GetExchangeRate().

**Figure 10-81:**  
GetExchangeRate  
formula.

## Set Transponder Formula

The Set Transponder formula enables you to select or deselect transponders set in IntelliRoute.

### TPLIST

Displays the Transponders dialog box where you can select or deselect one or more transponders.

#### Syntax:

TPLIST()

#### Returns:

If successful: the transponders 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

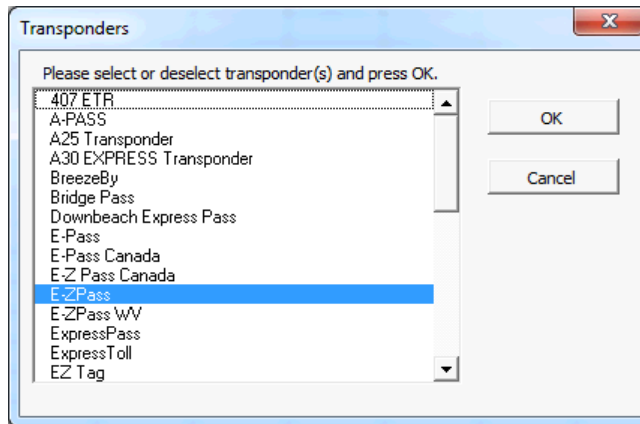
#### Worksheet Example:

|   | A         | B |
|---|-----------|---|
| 1 | =TPLIST() |   |
| 2 |           |   |
| 3 |           |   |
| 4 |           |   |
| 5 |           |   |

Figure 10-82:  
TPLIST formula.

Where cell A1 contains the formula: = TPLIST().

#### Returns:



## 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)

| Parameter | Description                                     |
|-----------|---|
| 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 |
|---|-----------|--------------|---|
| 1 | Skokie,IL | =CITYZIP(A1) |   |
| 2 |           |              |   |
| 3 |           |              |   |

Where cell B1 contains the formula: =CITYZIP(A1).

Figure 10-83:  
CITYZIP formula.

## CODETOCITY

Converts an SPLC or ZIP Code, represented by the value in cell A1, to its corresponding city name.

### Syntax:

**CODETOCITY(A1)**

| Parameter | Description  |
|-----------|--|
| 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:

|   | A         | B               | C |
|---|-----------|-----------------|---|
| 1 | 381154000 | =CODETOCITY(A1) |   |
| 2 |           |                 |   |
| 3 |           |                 |   |

Where cell B1 contains the formula: = CODETOCITY(A1).

or

|   | A     | B               | C |
|---|-------|-----------------|---|
| 1 | 60201 | =CODETOCITY(A1) |   |
| 2 |       |                 |   |
| 3 |       |                 |   |

Where cell B1 contains the formula: = CODETOCITY(A1).

**Figure 10-84:**  
CODETOCITY formula  
for SPLC.

**Figure 10-85:**  
CODETOCITY formula  
for ZIP.

## 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 10-86:**  
ZIPCHG formula for city name.

|   | A     | B             | C |
|---|-------|---------------|---|
| 1 | 60201 | =ZIPCHG(A1,0) |   |
| 2 |       |               |   |
| 3 |       |               |   |

Where cell B1 contains the formula: =ZIPCHG(A1,0)

or

**Figure 10-87:**  
ZIPCHG formula for SPLC.

|   | A     | B             | C |
|---|-------|---------------|---|
| 1 | 60201 | =ZIPCHG(A1,1) |   |
| 2 |       |               |   |
| 3 |       |               |   |

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.

# MENU COMMANDS



---

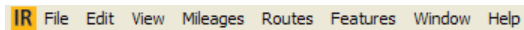
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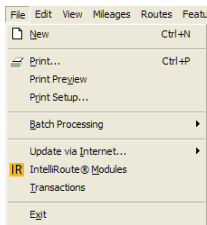
---

## Menu 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.



### File Menu



#### 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.

### **IntelliRoute Modules**

Displays the modules currently installed and available (not installed) in IntelliRoute.

### **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.

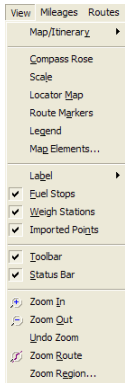
### **Clear Routes**

Clears route data from map display.

### **Exit**

Quits IntelliRoute and returns to Windows.

## **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.

#### **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.

### **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.

**Show Unabbreviated Label**

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.

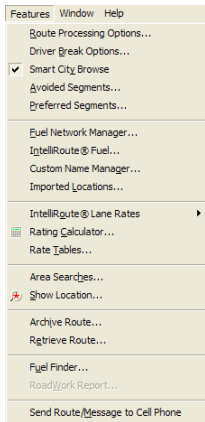
**Status Bar**

When selected, this option displays information in the bar at the bottom of the IntelliRoute window.

**Zoom Routes**

Zooms in or out to accommodate the entire generated route in the active window.

## 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.

### Collapse Current Route on Calculate

When selected, automatically collapses (hides) route data on route(s) that have been calculated. You can redisplay the route data by clicking the down arrow.

### Avoided Segments

A dialog box displays a list of avoided segments. You can click the segment you want to remove from the list of avoided segments.

### Preferred Segments

A dialog box displays a list of preferred segments. You can click the segment you want to remove from the list of preferred 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.

### 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.

### 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.

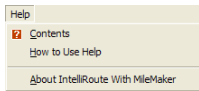
### **Fuel Finder**

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/Dock2Dock or Lowest-Cost Route Inquiry.

## **Help Menu**



### **Contents**

Displays the IntelliRoute Help system table of contents.

### **About IntelliRoute with MileMaker**

Displays IntelliRoute copyright and version information.

# 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                |
| Bridge         | BRDG                |
| Brook          | BRK                 |

### General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| 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                |
| Dam            | DM                  |
| Defense        | DEF                 |

### General Abbreviations

| <b>Name</b>  | <b>Abbreviation</b> |
|--------------|---------------------|
| 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                 |
| Flats        | FLTS                |
| Flight       | FLGT                |

### General Abbreviations

| <b>Name</b>   | <b>Abbreviation</b> |
|---------------|---------------------|
| 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                |
| International | INTL                |
| Island        | IS                  |

### General Abbreviations

| <b>Name</b>  | <b>Abbreviation</b> |
|--------------|---------------------|
| 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                  |
| Mountain     | MTN                 |
| MT.          | MT                  |

### General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| 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                 |
| Point          | PT                  |
| Pointe         | PTE                 |

### General Abbreviations

| <b>Name</b> | <b>Abbreviation</b> |
|-------------|---------------------|
| 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                |
| Settlement  | STL                 |
| Shipyard    | SHYD                |

### General Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| 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                 |
| Training       | TRNG                |
| Transportation | TRNS                |

### General Abbreviations

| <b>Name</b>              | <b>Abbreviation</b> |
|--------------------------|---------------------|
| 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

| Name                 | Abbreviation |
|----------------------|--------------|
| 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           |
| Montana              | MT           |
| Nebraska             | NE           |

#### United States State Abbreviations

| <b>Name</b>    | <b>Abbreviation</b> |
|----------------|---------------------|
| 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

| Name                      | Abbreviation |
|---------------------------|--------------|
| 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

| Name                | Abbreviation |
|---------------------|--------------|
| 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           |
| Queretaro           | QA           |
| Quintana Roo        | QR           |
| San Luis Potosi     | SL           |
| Sinaloa             | SI           |
| Sonora              | SO           |
| Tabasco             | TA           |
| Tamaulipas          | TM           |
| Tlaxcala            | TL           |
| Veracruz Llave      | VL           |

**Mexican States Abbreviations**

| <b>Name</b> | <b>Abbreviation</b> |
|-------------|---------------------|
| Yucatan     | YC                  |
| Zacatecas   | ZT                  |

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## Military Abbreviations

### Military Abbreviations

| Name                                   | Abbreviation |
|--|--------------|
| 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        |
| Coast Guard Station                    | CGS          |
| Coast Guard Support Center             | CGSC         |

### Military Abbreviations

| Name   | Abbreviation |
|--|--------------|
| 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        |
| National Aeronautics Space Administration    | NASA         |
| National Naval Medical Center                | NNMC         |

### Military Abbreviations

| <b>Name</b>   | <b>Abbreviation</b> |
|---|---------------------|
| 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              |
| Research & Development                              | R&D                 |
| Ship Conversion and Repair                          | SCR                 |

### Military Abbreviations

| <b>Name</b>                                       | <b>Abbreviation</b> |
|---|---------------------|
| 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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## Appendix Contents

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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/Dock2Dock Route Only Inquiry                          |
| QS:         | Quickest/Dock2Dock Route State Mileage Breakdown Only Inquiry  |
| QB:         | Quickest/Dock2Dock Route with State Mileage Breakdown Inquiry  |
| QM:         | Quickest/Dock2Dock Mileage Inquiry                             |
| QD:         | Quickest/Dock2Dock 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

| Record Name          | Characters in Cols 1-2 | Explanation  |
|----------------------|------------------------|--|
| 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/Dock2Dock 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/Dock2Dock/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:

| Record Name             | Characters in Cols 1-2 | Explanation   |
|-------------------------|------------------------|---|
| 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/Dock2Dock 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

| Cols.    | Number of Characters | Sample Content | Explanation   |
|----------|----------------------|----------------|---|
| 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**

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>  |
|--------------|-----------------------------|-----------------------|---|
| 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                          | 000000898             | 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          |  |
| 38 - 39 | 2                    | 01             | Error code 01.   |

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b>                |
|--------------|-----------------------------|-----------------------|-----------------------------------|
| 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.              |
| 95 - 96      | 2                           | Spaces                | Line number where error occurred. |

| <b>Cols.</b> | <b>Number of Characters</b> | <b>Sample Content</b> | <b>Explanation</b> |
|--------------|-----------------------------|-----------------------|--------------------|
| 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/Dock2Dock 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                |  |

---

## 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.

---

| Error Codes |                           |         |   |
|-------------|---------------------------|---------|---|
| Error Code  | Error Message             | Example | Explanation of Example  |
| 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.                |
| 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.                     |

---

| Error Codes |  |         |  |
|-------------|--|---------|--|
| Error Code  | Error Message  | Example | Explanation of Example   |
| 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.  |
| 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.  |

| <b>Error Codes</b> |   |                |  |
|--------------------|---|----------------|--|
| <b>Error Code</b>  | <b>Error Message</b>                              | <b>Example</b> | <b>Explanation of Example</b>  |
| 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.                                    |
| 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.               |

| <b>Error Codes</b> |  |                |  |
|--------------------|--|----------------|--|
| <b>Error Code</b>  | <b>Error Message</b>                                 | <b>Example</b> | <b>Explanation of Example</b>  |
| 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.                       |
| 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. |

| <b>Error Codes</b> |  |                |   |
|--------------------|--|----------------|---|
| <b>Error Code</b>  | <b>Error Message</b>   | <b>Example</b> | <b>Explanation of Example</b>   |
| 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/Dock2Dock, and Lowest-Cost Only | 8204           | The first two characters indicate an error code 82, "Latitudes and Longitudes Valid for MileMaker Practical, Quickest/Dock2Dock, 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/Dock2Dock, and Lowest-Cost Only           | 8404           | The first two characters indicate an error code 84, "Imported Point Valid for MileMaker Practical, Quickest/Dock2Dock, 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

## Appendix

# C

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### Appendix Contents

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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.

**Note:** The LAN Interface feature is part of the IntelliRoute® API module and is a separately purchasable option. When the API module is installed, *LAN Interface* will display in the *File* menu drop-down list of selections.

---

## 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.

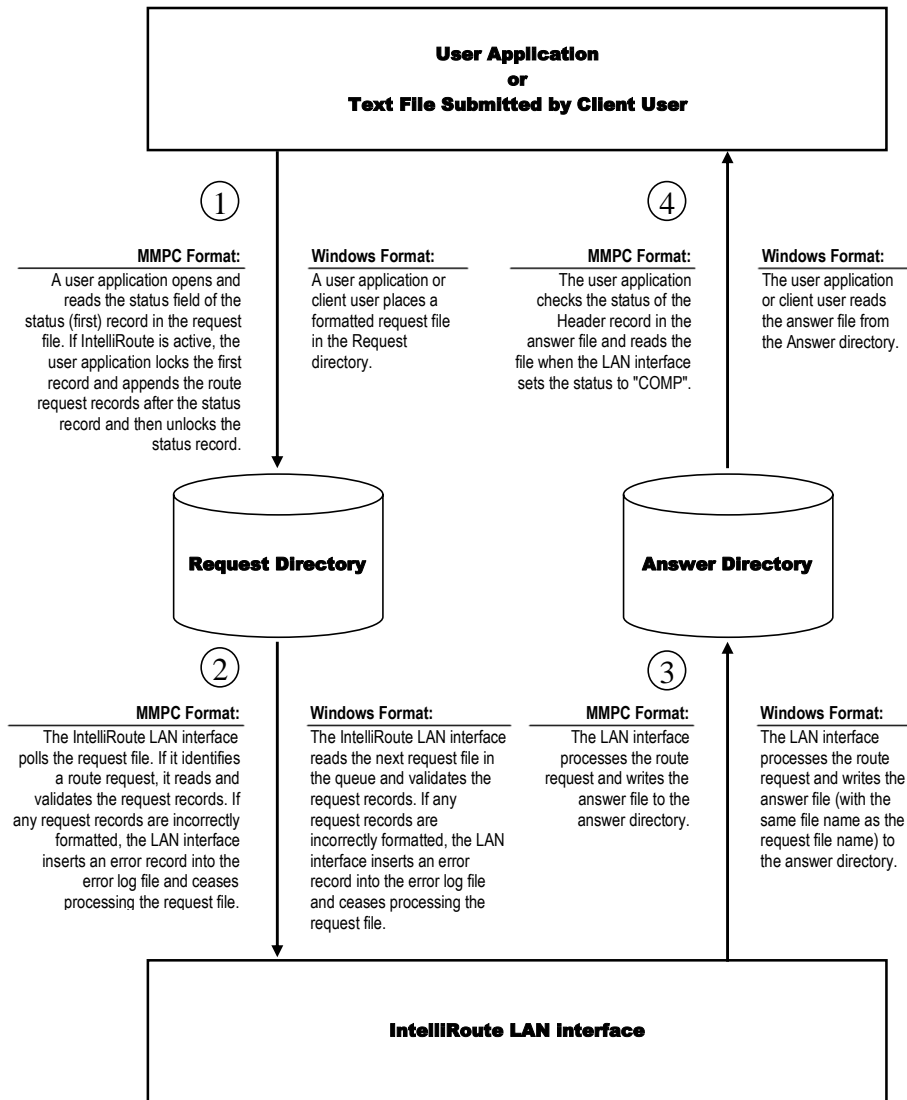
The **MMPC** format is backward compatible with previous (DOS) versions of the LAN interface. It uses a *single* request file with the name **INTERACT** that contains a 24 character status record followed by 24 character route request records. The LAN interface locks and reads the status record, reads 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

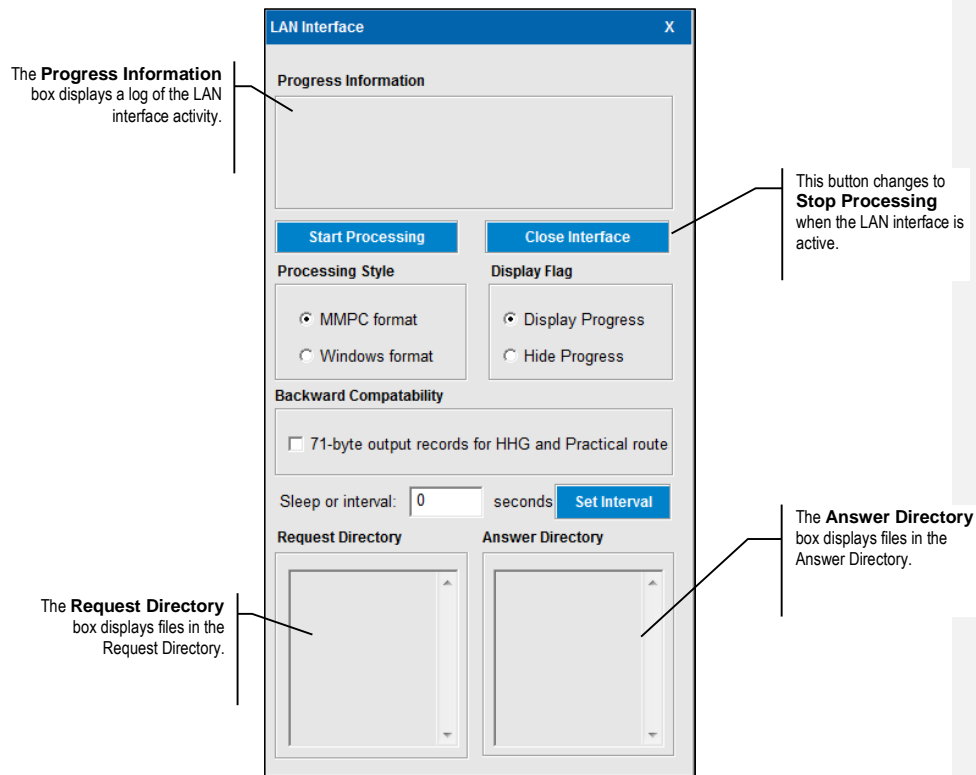
The flowchart below demonstrates how the LAN interface works with request and answer files depending on the request format type:



---

## 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:

| To:   | Do This:   |
|---|--|
| 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).

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## 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

| Record Name             | Characters in Cols 1-2 | Explanation  |
|-------------------------|------------------------|--|
| 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/Dock2Dock 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

| Cols.   | Number of Characters | Sample Content | Explanation  |
|---------|----------------------|----------------|--|
| 1 - 4   | 4                    | ACTV           | Indicates the status of the interface. Values are:<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><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**

| 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/Dock2Dock 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**

| Cols.  | Number of Characters | Sample Content | Explanation   |
|--------|----------------------|----------------|---|
| 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:

| Record Name             | Characters in Cols 1-2 | Explanation   |
|-------------------------|------------------------|---|
| 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/Dock2Dock 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><b>COMP:</b> Indicates the LAN interface is finished writing to the answer file.<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

| Cols.    | Number of Characters | Sample Content | Explanation   |
|----------|----------------------|----------------|---|
| 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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