PC★MILER®
30 Years Strong

User Guide

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Welcome to ALK Technologies' PC*MILER! By purchasing a PC*MILER product, you have made a cost-effective investment in the transportation and logistics industry's leading routing, mileage, and mapping software solution. Accuracy, reliability, and stability have positioned PC*MILER as the technology used by 98% of the top motor carriers and 92% of the top freight transportation firms in North America. The U.S. Department of Defense (DoD), the General Services Administration (GSA) and the Federal Motor Carrier Safety Administration (FMCSA) also rely on PC*MILER as their worldwide distance standard. If you're seeking to maximize revenues and minimize costs while utilizing the safest, most cost-effective routing for your vehicles and shipments, PC*MILER is the answer.

PC*MILER is both easy to learn and easy to use. You simply enter an origin, a destination, and any stops in between, and PC*MILER goes to work to calculate truck-specific routing that is displayed on a map. Distances are returned along with time and cost estimates based on adjustable speed, time, and cost parameters. Detailed driving directions and a state mileage summary can quickly be generated with a click of the mouse. Multiple routing options and additional features provide the tools you need to work effectively and productively.

PC*MILER can be used for rate determination and quotes, trip cost and time estimates, dispatch, driver pay calculation, fuel tax reporting, driver log auditing, load planning, carrier selection, freight bill auditing, and logistics analysis.

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1.1 What is PC*MILER?

PC*MILER generates point-to-point mileage, routes, and driving instructions over the complete highway system in North America, including Greenland, Puerto Rico, St. Pierre and Miquelon, and the U.S. Virgin Islands. It can be supplemented with the PC*MILER|Worldwide global highway network as a separate purchase.*

* All instructions for PC*MILER|Worldwide included in this User's Guide pertain only when PC*MILER|Worldwide or DTOD Data has been purchased and installed with PC*MILER. PC*MILER|Worldwide data is updated and released yearly <u>after</u> the release of the North America version of PC*MILER.

PC*MILER will calculate an unlimited number of routes and mileage on a single personal computer or a network installation.

PC*MILER calculates point-to-point mileage for an origin-destination pair of locations with intermediate stop-off points. It provides leg and cumulative mileage, time and cost estimates, state/country distance summaries, driving directions, and much more. PC*MILER provides Practical, Shortest, Fastest, and Least Cost routing, as well as additional options in North America for National Network plus 53'/102" trailer or twins, Toll Discouraged, and Hazardous Material routing and (optionally in the U.S. and Canada) local street networks.

PC*MILER Version 30 includes the following major features:

- **Multiple Route Types and Options** – PC*MILER route types and route options cover a wide range of routing and planning needs, with the ability to create and save custom route profiles for quick access to options you use the most.
- **ETA/ETD** – Users can define a departure or arrival time for more precise calculation of ETA/ETD.
- **POI & Fuel Stop Search Along a Route** – A POI search tool lets you search for POI, including fuel stops and prices, along a route or within a specified radius from within a route window.
- **Maps and Reports** that can be exported via clipboard for use with spreadsheet, word processing and database software – including detailed route reports and driving instructions.
- **Toll Cost Calculation** with the purchase of the PC*MILER|Tolls add-on. *(U.S. and Canada only)*
- **Optional Hours of Service (HOS) trip management**, with HOS-compliant rest stops and breaks inserted along the route.
- **PC*MILER|Traffic** – Provides an optional traffic data feed for more realistic transit times and real-time, historical or typical traffic displayed on the map *(North America only, PC*MILER|Traffic license required)*
- **PC*MILER|Weather –** Provides weather reporting and weather alerts along the route. *(PC*MILER|Weather license required)*

- **PC*MILER|TripDirect**® provides a direct link between PC*MILER in the back office and ALK's CoPilot Truck GPS navigation software in the cab. *(PC*MILER/TripDirect license purchase required)*

- **Unlimited number of stop-off locations.**

- **Multiple route generation** with on-screen comparison reports to determine the best route.

- **County/province name designations** for U.S. and international locations.

- **Comprehensive height and weight restrictions**, including for 53'/102" trailer or twins.

- **Least Cost Routing** – Least Cost routing generates several alternative routes based on multiple user-specified trip cost values.

- **Fastest Routing** – In addition to standard PC*MILER Practical and Shortest route types, Fastest routing calculates the quickest feasible way to get to a destination. *(North America only, PC*MILER/Traffic required)*

- **Route Optimization** to resequence stops in the most efficient order on a route.

- **Custom Avoid/Favors** to create and manage multiple sets of routing preferences.

- **Drag Route Feature and Via Points** for customized routing.

- **User-specified vehicle dimensions** for routing and toll calculation (includes an automobile routing option for vehicles classed less than 9,000 lbs./4,082 kgs.). *(PC*MILER/Tolls required for toll cost calculation)*

- **Point of Interest (POI)** database with customizable categories.

- **Location Radius** – For rate determination and operations planning, this tool lets you search for all cities, ZIP/postal codes and towns within a specified mileage radius around any location.

- **Elevation Discouraged** routing lets users set a customized limit on the elevation of the roads a route will use.

- **Greenhouse Gas Estimator** – For estimating greenhouse gas emissions by route.

- **Custom Place Names** to conform to the name of your facilities and customer locations.

- **Import Custom Place feature**, allowing seamless importing of custom address and pickup/delivery information to eliminate manual trip entry.

- **Geofence Tools** – Create geofenced areas on the map and have PC*MILER avoid these areas or send a warning if routes travel in or out of them.

- Ability to **point and click on the map** to select origin, stop-offs and destination, plus mouse-driven map customization.

- **Custom cost estimates** for empty/loaded miles.

- **Custom average road speed estimates.**

- **Hub mode** that determines routing, total mileage and state mileage summaries from one origin point to unlimited destinations.

- **State/Country distance summaries** including ferry miles.

- **Latitude/Longitude routing** that generates point to point routes and mileage between lat/long coordinates.
- **Online** Help – The PC*MILER *User's Guide* is easily accessible from within the application.
- **U.S. Department of Defense compliance.**
- The **complete North American highway network** that includes the United States, Canada, and Mexico plus Greenland, Puerto Rico, St. Pierre and Miquelon, and the U.S. Virgin Islands.
- ALK Technologies' **complete Worldwide Highway Network**, updated yearly to include the most current data available. *(PC*MILER/Worldwide or DTOD Data required for global routing)*
- Optional add-on data modules for **street-level addresses and map detail** in the **United States and Canada, Europe, India,** and available countries in **Africa, the Middle East, Oceania** and **South America**. *(PC*MILER/Worldwide required for address data outside North America)*
- Optional add-on data module for **Hazardous Material routing**. *(U.S. and Canada only; PC*MILER/HazMat add-on module required)*
- Optional add-on data module that provides an **Integrated Energy-focused Map Data Set** for the oil and gas industry. *(North America only, PC*MILER/Energy license required)*

1.2 What can PC*MILER be used for?

PC*MILER can be used for:

- Truck-specific routing and mileage calculations for Shortest, Practical, Fastest and Least Cost routes, with additional route options for Toll Discouraged and State + National (National Network and State extensions plus 53'/102" trailer or twins) in North America
- A direct link between PC*MILER in the back office and CoPilot Truck in the cab *(PC*MILER/TripDirect license required)*
- Hazardous material routing for safety and compliance *(with the PC*MILER/HazMat add-on module, U.S. and Canada only)*
- Toll cost calculation *(with the PC*MILER/Tolls add-on module, U.S. and Canada only)*
- Least Cost routing
- Dispatch, including Hours of Service (HOS) management
- Driver pay
- Rate determination
- Instant customer quotes
- Fuel tax reporting
- Trip time and/or cost estimation
- Driver log audits
- Load planning

- Stop optimization
- Carrier selection
- Logistics analysis
- Freight bill auditing
- IFTA and IRP auditing, FHWA safety auditing

1.3 What's New in PC*MILER Version 30?

NOTE for PC*MILER|Worldwide and DTOD Data Customers: Beginning with Version 28, the .1 versions of PC*MILER have been discontinued. PC*MILER|Worldwide and DTOD Data users who historically purchased a .1 version of PC*MILER can now install the base version of PC*MILER and then install PC*MILER|Worldwide or DTOD Data as a separate add-on – see section 2.5.5 for installation instructions. This is the same seamless data installation as in the past, only the additional .1 version number has been dropped.

NOTE Also: PC*MILER includes an easy way to check for updates from within the application. **Keeping current on updates is important to maintain the usability of your copy of PC*MILER.** See section 17.3, *PC*MILER Updates*.

Version 30 includes the following new features and enhancements:

- *NEW!...* **PC*MILER|Weather to Access Weather Information & Alerts.** Now PC*MILER users can visualize predicted weather patterns across the U.S. and Canada on the map through the use of radar, precipitation, and general alert layers – see Chapter 8. *(License purchase is required. If PC*MILER is integrated with other systems, an interface to ALK Maps is also required to access PC*MILER|Weather features.)*

- *NEW!...* **ALK's MapSure Service for Custom Data Enhancements.** PC*MILER|Streets users with an ALK Cloud account now have access to ALK's MapSure website to submit map data enhancement requests. See section 14.4.1. *(PC*MILER|Streets must be licensed and installed.)*

- *NEW!...* **Route & Vehicle Profiles Now Combined into One New Route Profiles Feature.** The Vehicle Profiles and Route Profiles dialogs from previous versions have been replaced by the Manage Profiles and Profile Options dialogs. Most options remain functionally identical to previous versions, though the way they are accessed has changed. See section 10.2.

- *NEW!...* **U.S.-based 60/70-hour Duty Limits Factored into HOS Route Planning.** In compliance with Federal Hours of Service regulations, the HOS Manager now includes U.S.-based 60/70-Hour Duty Limits, in addition to the 14-hour duty limit and 11-hour driving limit. See section 3.14.

- *NEW!...* **Optional Governor (Maximum) Road Speed Designation.** Users can now define a governor (maximum) road speed for a route that overrides other speed values for a trip when those values are higher than the user-supplied governor speed. This new feature can help users to more accurately calculate ETA's in PC*MILER, publish ETA's from PC*MILER to customers with more confidence, and calculate a more accurate HOS-planned route if desired. See section 10.3.2.

- *NEW!...* **Optional Empty/Loaded Miles Designation Between Stops.** The ability to designate loaded/empty miles between stops has been added back into Version 30. This designation can be set in the route window or the HOS Manager for each leg of a trip. See section 3.5.24 and 3.14.

- *NEW!...* **National Network and 53' Trailer or Twins Routing Combined.** The former National Network and 53' Trailer or Twins route options have been combined into one option named "**State + National Network**".

  In previous versions, the National Network option applied a preference within the routing algorithm to favor using the US Federally designated National Network (primary Interstates with reasonable entry/egress points up to 1 mile off the Interstate). The 53' Trailer or Twins option applied a preference to favor using the state-designated extensions to the Federal National Network (additional highways and supporting roads that can be any distance off the Interstate, as determined by the individual states). For Version 30, the State + National Network option now functions as if both options were selected. See section 1.6.4 for a complete description of this route type.

  > **NOTE:** The above change also applies to PC*MILER|Connect, PC*MILER| TCP/IP, PC*MILER|Spreadsheets, and Multi-Version Switch.

- *NEW!...* **Frame Route and Show/Hide Route Buttons in Route Windows.** Two new buttons in each route window frame the route on the map and toggle the map display of the route on/off. See section 3.5.

- *NEW!...* **PC*MILER|Tolls Discount Program Update.** A new toll discount program, RiverLink, has been added for Version 30. This new tolling system on three bridges between Louisville, KY and Indiana is scheduled by the tolling authority to become active in "late 2016" (currently, the construction of the bridges is not complete, and no date has been set); therefore, the toll rate in PC*MILER will be zero ($0.00) until the active program is incorporated in a quarterly toll data update. Note that the tolling authority is issuing two types of transponders for these bridges: RiverLink and EZPass. No toll discount programs have been removed in Version 30. *(PC*MILER|Tolls must be licensed and installed.)*

- *ENHANCED!...* **Redesigned Application Settings Dialog.** The Application Settings dialog has been revamped with tabs that group related options. Additionally, some options that were formerly accessed using the Route

Options dialog or the Help ribbon have been moved to Application Settings. See section 10.1.

- *ENHANCED!...***Redesigned Route Options Dialog.** The updated Route Options dialog has been simplified with vertical accordion-style tabs. See section 10.4.

- *ENHANCED!...* **Improved U and K Turn Routing for Medium and Heavy Duty Trucks.** ALK has improved its routing logic to estimate whether a turn-around on a twinned highway is likely to be an easy U turn, a difficult U turn, or a very difficult K turn, so that when a turn-around is necessary an easier turn-around location will be chosen for the route.

- *ENHANCED!...* **Search for Saved Custom Places On a Planned Route.** Users can now search for saved custom places when planning a route or inserting HOS stops using the HOS Manager. See section 3.12.

- *ENHANCED!...* **RouteSync Feature Renamed "TripDirect".** The RouteSync feature has been renamed "PC*MILER|TripDirect" in the PC*MILER user interface. The functionality of this feature remains the same, it enables users to send a PC*MILER route directly to ALK's CoPilot Truck navigation software that's downloaded from an app store and used in the cab. This change is intended to distinguish the trip dispatch functionality within the PC*MILER user interface from the related but different RouteSync functionality that is available for integration with third party systems via PC*MILER|Connect. *(PC*MILER|TripDirect must be licensed and installed to use this feature.)*

- *ENHANCED!...* **"Divided" Road Type Changed to "Major Highway".** You'll see this name change in the File menu > *Application Settings* > **Road Speeds** tab, the Road Type report, and the Road legend on the map.

- *ENHANCED!...* **ETA's Refined and Streamlined With Other ALK Products.** For Version 30, ALK has put significant effort into further enhancing the accuracy of PC*MILER's estimated times of arrival to ensure consistency between PC*MILER and other ALK products such as CoPilot Truck.

- *ENHANCED!...* **Automatic .NET Framework Upgrade from Version 4.5 to 4.6 During Installation.** The PC*MILER Version 30 installation will automatically install Microsoft .NET Framework 4.6 at the beginning of the installation. This upgrade resolves some feature display issues in the previous version of PC*MILER for users of Windows 8.1, 10 and Server 2012 operating systems.

- *ENHANCED!...* **Yearly Database Enhancements and Routing Improvements in North America and Worldwide.** Routing improvements are a major part of each PC*MILER release and each annual version release confirms our commitment to enhancing the quality of PC*MILER's truck-

specific routing database. Each year we add many routing enhancements to improve PC*MILER's truck-specific database, mileage calculations and driving directions.

North America Region Updates

Version 30 integrates the following improvements to ALK's North American highway and local streets database:

- Twinning of physically divided highways
- Improved precision and coverage of nationwide U.S. street-level address ranges *(requires an installation of PC*MILER|Streets)*
- Updated ZIP codes
- Addition of newly constructed roads and interchanges
- Realignment of the existing road network to GPS standards
- Reclassification of roads where necessary (e.g. changing a road from secondary to primary)
- Addition and confirmation of one way designations on roads to provide safer navigation and guidance
- Improvement of city and ZIP/Postal Code placement and alignment
- Specifically for commercial vehicles, additional updates include but are not limited to:
  - Applied urban coding to appropriate city-centers to aid in generating better routes through congested areas
  - Improved highway-level coverage and truck specific through-travel routing within city limits (e.g. keeping drivers on roads designated by local and state authorities as preferred/designated for truck travel)
  - Updated vertical clearance data to accurately model posted limits at railroad crossings and overpasses
  - Verified truck restrictions and allowances (classifications include truck designated roads, truck discouraged roads, height/weight restrictions and allowances, commercial prohibited road classifications, hazardous materials restrictions/ allowances, and others

Worldwide Network Updates

Version 30 integrates the following improvements to ALK's Worldwide highway database since Version 29:

- Extensive data updates in over 180 countries and territories
- 8 countries upgraded to High or Comprehensive coverage:
  Cyprus, Israel and the West Bank, Mayotte, Zambia, Indonesia, Malaysia, Singapore, Thailand
- Over 198,000 miles of highway network added
- Over 97,000 cities and 131,000 postal codes added
- See *Appendix J* for worldwide data coverage levels & statistics

- *ENHANCED!...* **Annual Updates of Defaults for US$/CAD$ Conversion Rate and Trip Costs.** In Version 30, the default US dollar/Canadian dollar conversion rate as applied to toll rates (if PC*MILER|Tolls is installed) and

default fuel/trip costs are as shown below (in U.S. dollars). To customize these values go to the File menu > *Application Settings* > **Tolls** tab and **Route Costs** tab.

Cost/Time Parameter	Version 30	Version 29
US$/Canadian$ Conversion Rate (note 1)	$1.00/$1.29	$1.00/$1.277
Fuel Cost Per Gallon (note 2)	$2.10	$2.78
Fuel Cost Per Liter	$0.55	$.73
Fuel Cost Per Mile (Loaded or Empty)	$.32	$.43
Fuel Cost Per Kilometer (Loaded or Empty)	$.20	$.43
Other Cost Per Mile (Loaded or Empty)	$.20	$.19
Other Cost Per Kilometer (Loaded or Empty)	$.12	$.12
Labor Cost Per Hour (Loaded or Empty)	$35.85	$32.89
MPG – Loaded and Empty (note 3)	6.48	6.48
Greenhouse Gas Estimates (note 4)	22.2	22.2

Reference Notes:
(1) http://www.fiscal.treasury.gov/fsreports/rpt/treasRptRateExch/treasRptRateExch_home.htm
(2) *Transport Topics* 3.21.2016, p. 4
(3) James Langley, TMW VP of Business Analytics, 2013, from a survey of 62 North American truck carriers with > 200 mile average haul, totaling 21,000 trucks.
(4) Emission Facts, U.S. Environmental Protection Agency publication EPA420-F-05-003, February 2005, p. 2
American Transportation Research Institute (ATRI) Reference:
2015 updated study – http://atri-online.org/2015/09/29/an-analysis-of-the-operational-costs-of-trucking-2015-update/

1.4 The PC*MILER Highway Database

PC*MILER products are based on ALK Technologies' proprietary computer representation of the North American and Worldwide highway systems. The distances contained in PC*MILER are derived from official highway maps obtained from state, provincial, and national governments, state DOT maps, county maps, local maps, and information received from thousands of industry contacts. U.S. Interstate, Federal and truck-specific State highways are included.

PC*MILER Version 30 data features thousands of new and updated North American road miles and locations including: **bridges and tunnels**, **border crossings**, **highway exits**, **truck stops**, **state weigh stations**, **CAT Scale weigh stations**, **five-digit U.S. ZIP codes**, U.S. Department of Defense **military installations**, **commercial truck restrictions** in the United States, Canada, and Mexico, plus **highway junctions** and hundreds of thousands of **cities**, **towns**, and **points of interest**.

With the purchase of separate add-on data modules, updated databases of **Canadian Postal Codes**, **SPLC**, and **comprehensive U.S. federal, state, and local Hazardous Material restrictions and designations** are available as well.

In addition, ALK offers several other regularly updated add-on data modules for use with the base PC*MILER product: **PC*MILER|Streets** for address-to-address routing (see below); **PC*MILER|Energy** for oil and gas specific data and facilities; **PC*MILER|Worldwide** for global point-to-point routing; **PC*MILER|Tolls** for toll calculation.

1.4.1 PC*MILER Local Street and International Database

In North America, users have the ability to add street-level detail to generate dock-to-dock routes and mileage. PC*MILER's local street-level databases, included with the purchase of the PC*MILER|Streets data add-on, cover the United States and Canada* and include a comprehensive address database, along with related routing options and map detail.

** Note that with the purchase of PC*MILER|Streets, street-level detail in the U.S. comes standard and a separate purchase of the Canadian Street-Level Add-On is necessary to access related data in Canada.*

Also available for purchase is the PC*MILER|Worldwide data add-on to generate point-to-point truck-specific mileage, driving directions and maps over the entire international highway network. PC*MILER|Worldwide includes access to highway data in Africa, Asia, Europe, Middle East, North America, Oceania, and South America. Worldwide data is updated after the base release is completed. Optional street-level data in many countries and regions can be purchased along with a PC*MILER|Worldwide installation.

1.5 Distance Calculation

Distances and routing directions are calculated by first determining which roads a vehicle will travel to get between two points and then adding up the distances over each section of road to arrive at a total mileage, similar to the manual task that one might follow if using an atlas.

Routing to all stops will "clean up" to the nearest truck-usable road on the highway or local street network. This local distance equals the short air distance between where the point is plotted on the map and the closest truck-usable road. In the Detailed Route report, which lists every route segment and interchange on a route, this distance may appear as "Local".

1.6 PC*MILER Route Types

PC*MILER offers three basic route types: Practical, Shortest and Fastest*. For routing in North America, any of these may be combined with PC*MILER Toll Discouraged and/or State + National Network (includes 53'/102" trailer or twins) routing. Light Vehicle routing for vans, automobiles, pickup trucks, SUVs, etc. is also available, and Least Cost routing may be generated for the Practical, Shortest or Fastest route type. *Note for PC*MILER/Worldwide users: Fastest routing is available only when North America is the selected region.*

The route type is set in the Route Options or Route Profiles dialog, with the exception of Least Cost routing. See Chapter 10, *Setting Route Types & Options*, and Chapter 4, *Least Cost Routing*.

PC*MILER Route Type Descriptions
(See sections 1.6.1 – 1.6.7 below for more detailed descriptions.)

Route Type	Description
Practical	Represents distances and driving routes that a driver would normally take to minimize time and cost. Models the trade-off between taking the most direct path and staying on major, high quality highways.
Shortest	Represents distances and driving routes that a vehicle would take to minimize total distance traveled while still following a reasonable route. A Shortest route may have a longer drive time than a Practical route.
Fastest	*(The North America region must be selected, and PC*MILER/Traffic must be installed.)* Uses any day of the week or time of day information that has been set for a route (these are optional settings for Fastest routing) in conjunction with Inrix® real-time and/or historic traffic data to calculate the quickest route to the trip's destination(s). Actual mileage may be longer than a Practical route.
Toll Discouraged Option	*(North America only)* Avoids long stretches of toll roads but won't take long, impractical detours to avoid toll bridges and tunnels.

Route Type	Description
State + National Network Option	*(North America only)* Favors using the US Federally designated National Network (primary Interstates with reasonable entry/egress points up to 1 mile off the Interstate), combined with a preference to favor using the state-designated extensions to the Federal National Network (additional highways and supporting roads that can be any distance off the Interstate, as determined by the individual states).
Light Vehicle Routing (Override Restrictions Option)	Overrides size and weight restrictions when calculating routes, but routes will still avoid truck-prohibited and truck-discouraged roads. By default, PC*MILER uses size/weight restrictions. (Note that to generate light vehicle or automobile routing that will use truck-prohibited/discouraged roads, the user can specify small vehicle dimensions that take precedence over this setting – see section 10.5.)
Least Cost Routing	Considers user-specified values for miles per gallon, cost per gallon, fuel cost per mile, maintenance cost per mile, labor cost per hour, and stop cost – and includes a parameter for a greenhouse gas emission estimate. If PC*MILER|Tolls is installed, toll costs are factored in as well.

1.6.1 PC*MILER Practical Routes

PC*MILER Practical Routes represent distances and driving routes that a driver would normally take to minimize time and cost. Practical Routes consider distance, road quality, terrain, urban/rural classifications, truck-restricted roads, and designated principal and secondary through routes.

Practical Routes model the trade-off between taking the most direct path and staying on major, high quality highways. Interstate highways are given a higher priority than toll roads, which, in turn, are given a higher priority than secondary highways, and so on. This typically means getting on, and staying on, major highways and using truck-designated routes as much as possible. Practical routing avoids local and even secondary class roads where possible because they tend to be harder to navigate for large trucks due to stop lights, tighter and more frequent turns, etc.

In the United States, PC*MILER Practical Route mileage and state-by-state mileage breakdowns can be used to supplement your regular fuel tax reporting

documents for many jurisdictions. Many state audit departments have purchased licenses to incorporate PC*MILER into their audit procedures.

> **NOTE: A PC*MILER user may still be assessed additional taxes even by those states using PC*MILER in their audit procedures.** However, your chances of being assessed additional taxes greatly diminishes by utilizing a computerized mileage system in conjunction with your driver logs, trip sheets, invoices, and bills of lading.

In order to minimize the possibility of significant tax assessments, you must verify that the PC*MILER generated route is the *same* as that reported on your driver logs and/or trip sheets. In addition, you must add the appropriate vicinity miles to the PC*MILER generated mileage so that the following equation is true:

TOTAL ODOMETER MILES = PC*MILER Miles + Vicinity Miles

> **NOTE:** PC*MILER accounts for some vicinity miles if non-Keypoints (generally postal code locations and/or place names not associated with the downtown metropolitan area) are used as stop-off locations.

ALK Technologies continues to work closely with the member states of the International Fuel Tax Agreement (IFTA) and the International Registration Plan (IRP). Currently many IFTA/IRP jurisdictions are using PC*MILER as an auditing tool in their fuel and mileage tax audit procedures.

1.6.2 PC*MILER Shortest Routes

PC*MILER Shortest Routes represent distances and driving routes that a vehicle would take to minimize total distance traveled while still following a reasonable route. For instance, Shortest Route mileage and routes will also avoid truck-restricted roads and, in some cases, may favor a beltway rather than traveling directly through a city.

However, because the goal of the Shortest route type is to minimize total distance, there is not much emphasis on taking major highways. This could mean avoiding long loops of a major interstate by exiting the interstate to take a shorter more direct route. For example, going from Baltimore, MD to Richmond, VA, a Practical Route will take I-495 around Washington, DC; but a Shortest Route may take US-1 through Washington, DC in order to minimize the distance traveled.

1.6.3 PC*MILER Fastest Routing *(North America only)*

(PC*MILER/Traffic must be installed and activated, and North America must be the selected region.) In addition to the standard Practical and Shortest routing types, PC*MILER now provides a Fastest routing type. Fastest routing uses any day of the week or time of day information that has been set for a route (these are optional settings for Fastest routing) in conjunction with Inrix® real-time and/or historic traffic data to calculate the quickest route to the trip's destination(s). Users who ship time-sensitive freight can select a Fastest route that may be longer in distance but save time over the standard Practical route.

Additionally, Least Cost routing (see section 1.6.7) now considers Fastest and Fastest with Toll Avoidance route types, increasing the number of routes considered to six. Users can opt to utilize Least Cost routing to select the route that arrives on time but costs the least, using default or user-specified costs.

NOTE: When using real-time traffic data, a Fastest route may actually calculate a longer drive time than the Practical route if there is significant traffic congestion on the route.

NOTE Also: Setting a governor (maximum) road speed as a Route Option or in a route profile can alter the route calculated using the Fastest route type (see section 10.3.2 and 10.4). A lower governor speed could result in a shorter route distance and more lower class roads being used (see section 10.1.6 for road classifications).

1.6.4 PC*MILER State + National Network Routes *(U.S. only)*

NOTE: Also reference *Appendix A* and *Appendix B*.

PC*MILER State + National Network routing favors using the US Federally designated National Network (primary Interstates with reasonable entry/egress points up to 1 mile off the Interstate), combined with a preference to favor using the state-designated extensions to the Federal National Network (additional highways and supporting roads that can be any distance off the Interstate, as determined by the individual states).

Beginning in Version 30, the National Network and 53' Trailer or Twins route options from previous versions (described below) were combined into one State + National Network option. In previous versions, the National Network option applied a preference within the routing algorithm to favor using the US Federally designated National Network (primary Interstates with reasonable entry/egress points up to 1 mile off the Interstate). The 53' Trailer or Twins option applied a preference within the routing algorithm to favor using the state designated extensions to the Federal National Network (additional highways and supporting roads that can be any distance off the Interstate, as determined by the individual

states). In Version 30, the new State + National Network option applies both preferences.

State + National Network routing can be selected using the **Road Network** route option, either as part of a route profile or in the Route Options dialog for an individual route – see sections 10.2-10.4.

NATIONAL NETWORK ROUTING DESCRIPTION

The National Network is a U.S. government-designated system of highways originally established by the Surface Transportation Assistance Act of 1982 (STAA). This routing option is based on the federally-designated National Network system updated in the April, 1992 Code of Federal Regulations, Part 658, Appendix A. The National Network includes the Interstate System (several minor segments are not included), and many selected U.S. and state highways. Highways continue to be added to the National Network by federal and state governments.

PC*MILER National Network routing represents distances and driving routes which are most reasonable and legal for the larger trucks authorized by the Surface Transportation Assistance Act of 1982.

National Network routing stays on the National Network to the maximum extent possible. Given that many areas are not directly served by the National Network, the origin and stop-offs of your route may not be on the National Network. In these cases PC*MILER will take the shortest reasonable path from the origin and stop-offs to the Network. Detailed Route Reports (driving directions) for PC*MILER National Network routes provide a warning wherever the route is forced to use a non-conforming link. These road segments should be checked before traveling.

National Network mileage tends to be higher than Shortest or Practical mileage.

These designated highways permit, at a minimum, 102" wide, single 48 ft. trailers and 28 ft. double trailers. The Interstate system and most, but not all, remaining designated routes are open to 80,000 pound vehicles. Certain states, notably Arkansas and Mississippi, have designated certain National Network segments with less than an 80,000 pound capacity.

In addition to the National Network highways, *access routes* and *access policies* are components of routing STAA dimensioned trucks. The Federal government has mandated that no state may prohibit travel from the National Network for a minimum of one road mile unless safety restrictions apply. Also, no state may deny reasonable access to terminals and facilities for food, fuel, repairs and rest.

Several states maintain more generous access policies and lists of specifically designated access routes to terminals and facilities. Should you need to travel beyond the National Network and the access roads, you must acquire the proper

permit. See *Appendix A* for access rules by state. For detailed information about pre-approved access routes, contact the individual states.

NOTES: PC*MILER's suggested National Network routings are based on official highway maps, the Code of Federal Regulations, and information provided by state governments. It is provided without a warranty of any kind. The user assumes full responsibility for any delay, expense, loss, or damage which may occur as a result of its use.

See Appendix A, *Access Policies From National Network Routes,* for the current status of National Network access policies. For detailed information about pre-approved access routes, contact the individual states.

53' TRAILER OR TWINS ROUTING DESCRIPTION

The regulations that govern the routing of trucks in North America are a function of weight, height, number of axles, distance between axles, number of trailers, and commodity.   These regulations take two principal forms: restrictions and designations. In the case of designations, trucks may deviate from the designated road network, on any road that is not otherwise restricted, to access points of loading, unloading and services.

Under the 1982 U.S. federal law known as the STAA, the most important distinction in truck designations is between 96" wide, 48' long trailers on the one hand and 102" wide, 53' long trailers (and twin 28' long trailers) on the other hand. When the State + National Network routing option is used in PC*MILER, or when a width of greater than 96" or a length greater than 48' is entered into PC*MILER as the vehicle size, PC*MILER's routing algorithm switches to favoring roads designated by the states for "oversize" trucks (over 96" wide or 48' long).

In PC*MILER, the routing designations for the following equipment types are included in the State + National Network routing category:

- double trailers no more than 28' long and 102" wide;
- semi-trailers longer than 48' or wider than 96", but no longer than 53' and no wider than 102".

Detailed Route and Driver's reports for State + National Network routes warn that a road is "Not Designated" if that road is necessary to reach an origin, destination or stop-off outside of the maximum access distance for that state. In this case the circle that represents the stop on that link in the route window will turn solid red. If the cursor hovers over it a tooltip will tell you what type of warning it is.

See *Appendix A* for state-by-state access policies and an explanation of the criteria that will trigger a "Not Designated 53 Foot" warning.

If such a warning appears, then a legal route for 53' equipment is either not possible under current state designations or would be so circuitous that you should either

consider assigning smaller equipment or petitioning the state to designate a more direct access route. Users should check the legal requirements on these roads because they vary; for example, delivery may be legal, but stopping for food or services may not be.
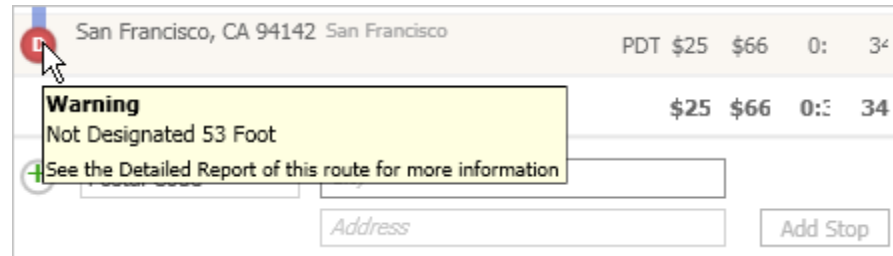
CA	West	I-80 - James Lick Frwy	0.7	0:01	+ I-80 Ramp
CA	Keep right	Ramp	0.4	0:01	Restriction
Warning * US-101 * Not Designated 53 Foot					
CA	North	US-101 - Central Skwy	0.3	0:00	+ US-101 Exit 434A
CA	Keep right	Exit 434A	0.2	0:01	Restriction
Warning * US-101 * Not Designated 53 Foot					
CA	North	US-101	0.2	0:00	+ US-101 US-101
CA	North	US-101	0.4	0:01	San Francisco, CA 94142
Arrive Loaded					

Dest: 94142 San Francisco, CA, San Francisco   0:00   (On-Duty)   0.00

"Not Designated" Warning in a Route Window and Detailed Route Report

If the **Designated Truck Routes** layer in the Map Features dialog is turned on (see section 11.7), the PC*MILER map will display the 53-foot designated network with a light blue underlay when the map scale is approximately 1" equals 8 miles or less. This underlay is hidden by default. (Note: If you have the PC*MILER|HazMat module installed and the **Hazardous Material** layer is turned on, you may want to turn it off for a better view of designated truck routes.)

1.6.5 PC*MILER Toll Discouraged Routes

For those who desire to avoid long stretches of toll roads, ALK provides a Toll Discouraged routing option. Toll Discouraged routing will avoid long stretches of toll roads but will not take long, impractical detours to avoid toll bridges and tunnels. For example, a route from Boston, MA to Albany, NY will avoid the Massachusetts Turnpike, but a route from Camden, NJ to Philadelphia, PA will include a toll bridge.

If a Toll Discouraged route needs to travel on a toll road, toll miles will be shown in the Detailed Route and State/Country reports. If PC*MILER|Tolls is installed, toll costs will also be shown, even if toll calculation is disabled for the route.

Toll Discouraged routing is activated using the **Toll Roads** route option, see sections 10.2-10.5 on route profiles and options.

NOTE: PC*MILER chooses routes by minimizing a cost equation that combines distance, certain factors times distance, and certain fixed factors. When Toll Discouraged is selected for a route, the factor that is multiplied times distance for toll roads is higher than when Toll Discouraged is not chosen. This causes the route chosen to go a somewhat longer distance (all other factors being equal), but not an extremely longer distance, in order to avoid paying a toll.

To see whether the Toll Discouraged option is cost-effective for you or your fleet, you may want to consider using ALK's PC*MILER|Tolls add-on module and PC*MILER|Spreadsheets to analyze how much toll cost you will save versus how much additional mileage and time cost you will incur, for the particular origin-destination pairs that you run frequently. See Chapter 7, *Getting Toll Costs* for more details about PC*MILER|Tolls.

1.6.6 Routing For Different Vehicle Sizes and Restriction Overrides

By default, PC*MILER generates routes and mileage for large, heavy trucks of a particular size and weight (in North America, 5-axle tractor-semitrailer combination, 96" wide, 48' long trailer, 13'6" high, 80,000 lbs. GVW). Routing for 102" wide 53' long trailers and 28' twin trailers is available using the "State + National Network" routing option. You can route other sizes and weights of trucks by setting vehicle dimensions, choosing among pre-defined route profiles or creating your own user-defined route profiles.

Additionally, a setting that overrides size and weight restrictions is available as a route option or route profile option. This setting relaxes truck restrictions for particular sizes and weights, but still avoids roads that are prohibited to or discouraged for trucks. If a resulting route uses any roads that have restrictions for particular sizes and weights, the Detailed Route Report will list them. This allows you to determine the largest or heaviest vehicle you can assign to drive that route. See Chapter 10, *Setting Route Types & Options,* specifically the **Size and Weight Restrictions** option in section 10.3.2.

PC*MILER also includes a routing option specifically for automobiles and other light vehicles (vans, pickup trucks, SUVs, etc.) that relaxes all truck and commercial vehicle regulations (see section 10.5.3).

By default PC*MILER does not override restrictions, so routing will avoid both truck-prohibited and truck-discouraged roads, as well as truck-restricted roads that pertain to the size and weight set in the current route profile. In addition, nationwide 13' 6" height restrictions are taken into account.

1.6.7 Least Cost Routing

In response to the needs of our customers, ALK developed the "Least Cost" routing feature that considers user-specified values for miles per gallon, cost per gallon, fuel cost per mile, maintenance cost per mile, labor cost per hour, and stop cost – and includes a parameter for a greenhouse gas emission estimate. If PC*MILER|Tolls is installed, toll costs are factored in as well. See Chapter 4 for a full description of this routing type and how to use it.

Chapter 2

Getting Started

Before installing PC*MILER, please make sure that you have the required hardware and software configuration. All PC*MILER software, databases and auxiliary files are provided with the PC*MILER installation.

2.1 System Requirements

NOTE: Please check for updates regularly to maintain the usability of your current copy of PC*MILER – select the Help tab > *Check for Updates*.

2.1.1 Platforms

- Windows® 7, 8 and 10* running in 32-bit compatibility mode as well as support for 64-bit native applications on Windows 7 and 8 – please see section 2.4 if installing connectivity products on a 64-bit machine
  * Windows 10 recommended. See notes in section 2.4.
- AS/400
- CICS®/MVS
- UNIX® (AIX, HP-UX, Sun-Solaris) and Linux™
- Citrix® Metaframe and TCP/IP functionality for use with other platforms
- Windows Server® (Windows Server 2012, Terminal Servers, and Server 2008* including Server 2008 R2 running in 32-bit compatibility mode for the PC*MILER user interface and on 64-bit processors for PC*MILER Connect, Mapping, BatchPro, and Spreadsheets)
  * **IMPORTANT:** Server 2008 requires Windows Server 2008 Service Pack 2 .

NOTE: Platforms not supported include: Windows Vista, XP, Server 2000, and Server 2003.

2.1.2 Windows Requirements

NOTE: If you are on an older version of the Windows operating system, it is strongly recommended that if possible you upgrade to Windows 10 for the desktop and/or Windows 2012 Server.

NOTE Also: ALK strongly encourages users to apply all available Windows Updates. Without the most recent updates, PC*MILER could fail to launch.

Environment:

- Stand-alone PC with a 1.5-2 GHz processor or networked personal computers (LANs and Server/Thin Client Networks)
- 512 MB RAM minimum, 1 GB strongly recommended for standard desktop users. For Citrix and Terminal Server, 200 MB RAM for each user running PC*MILER|Connect and PC*MILER|Spreadsheets.

Other Requirements:

- Minimum screen resolution 800X600
- Color quality settings supported: 16-bit and 32-bit (8-bit & 24-bit not supported)
- Internet connection for license activation (recommended) and access to select features such as Satellite imagery, real-time Traffic data, updated fuel prices, and PC*MILER|Weather.
- Email address for license activation

NOTE: The hard disk requirements listed below are *approximate*.

PC*MILER:

- In Version 30, automatic installation of Microsoft® .NET Framework 4.6 requires 4.5 GB, which reduces in size down to 39 MB once it is installed. See note in section 2.4 for exceptions.

- PC*MILER – 3.1 GB hard disk space for full install (including all Add-Ons listed below except PC*MILER|Energy, and all Connectivity products)
  - PC*MILER|Tolls – 50 MB
  - PC*MILER|Hazmat – 50 MB
  - PC*MILER|Streets (U.S. Data) – 1.3 GB
  - PC*MILER|Streets (Canadian Data) – 60 MB
  - Canadian Postal Codes – 50 MB
  - Standard Point Location Codes (SPLC) – 2 MB
  - PC*MILER|Energy – Additional 2.6 GB hard disk space

Connectivity Products:

- PC*MILER|Connect – 13 MB
- PC*MILER|Mapping – 7 MB
- PC*MILER|Spreadsheets – 3 MB
- PC*MILER|BatchPro – 7 MB
- PC*MILER|TCP/IP – 6 MB

NOTE: PC*MILER|Connect and PC*MILER|Spreadsheets support x86-64 architecture. Our software was not ported to IA-64 architecture although it will still be supported through a hardware compatibility mode.

PC*MILER|Worldwide:

- Worldwide Highway Network Only – 5 GB hard disk space additional
- PC*MILER|Streets Data hard disk space requirements:
  - United States – 1.3 GB

- Canada – 60 MB
- Africa – 263 MB
- Europe – 3.38 GB
- Asia – 616 MB
- Middle East – 179 MB
- Oceania – 189 MB
- South America – 339 MB

PC*MILER|TripDirect Requirements:

NOTE: TripDirect only works with appstore CoPilot Truck products. It does not work with any PC*MILER or CoPilot integrated products.

- CoPilot® Truck™ running on one or more mobile devices and registered with CoPilot Live Messaging (only works with appstore CoPilot Truck)
- CoPilot Truck Version 9 supported platforms are: iPhone, iPad, and Android
- A PC*MILER|TripDirect license key code
- Street-level data in the US and/or Canada
- TMS solution to dispatch the route to the device
- PC*MILER 30
- PC*MILER|Streets or other confirmed 6-digit precision lat/longs
- Active remote connection on the device (no airplane mode)

These additional components will also be installed:
- Microsoft Visual C++ 2005 Redistributable Package (x86) – 6 MB disk space
- WindowsInstaller-KB884016-v2-x86.exe (x86) – 2 MB disk space
- .NET dotnetfx.exe (x86) – 280 MB disk space
- Microsoft® .NET Framework 4.6 (automatically installed with PC*MILER)

2.1.3 AS/400 Requirements

PC to AS/400 Connectivity Options (Not Provided by ALK):
- PC with a 2+ GHz processor
- Client Access Express V4R4MO or higher, also known as iSeries Access (recommended)
- Supports OS/400, i5/OS and IBMi operating systems; Version 4.2 (V4R2) and higher on IBM AS/400, System i and Power Systems™ hardware.

2.1.4 CICS Requirements

Because PC*MILER-CICS employs a distributed processing solution, the following additional hardware is required to run the software:

- A dedicated PC with a high-end Pentium processor (1.5-2 GHz or greater)
- 512 MB RAM (minimum), 1 GB recommended
- Communication software from Quotium Technologies (formerly ICOM Informatics) called Winsurf+ can be found at www.Quotium.com.

2.1.5 UNIX and LINUX Requirements

Please contact PC*MILER Technical Support for more information.

2.2 General Licensing Information

Single-User License

A single-user license can be installed to only **one** PC or workstation locally.

Multi-User License

A multi-user license can be installed to a server environment, on the computer that will be sharing the licenses to other computers. It allows "x" number of concurrent workstation connections to PC*MILER at a time. For example, a 5-User License allows one installation on a central server or PC with as many workstation PCs as you want having access, but only 5 users can access PC*MILER at the same time.

Enterprise License

An Enterprise License allows users to install PC*MILER on any combination of end-user PCs or workstations without license limitations. It's a cost-effective installation and licensing solution for larger companies with several users. It does not require license activation but requires signing an enterprise license supplemental agreement directly with ALK.

Additional Copy License

Users can install PC*MILER locally onto additional PCs by purchasing additional copy licenses. If you purchase 5-copy licenses, you can install PC*MILER locally onto five additional PCs or workstations. If you're installing onto a desktop PC and a laptop, two licenses are needed.

2.3 Installation Types

Non-Network (Local) Installations

A non-network installation allows you to install PC*MILER to a PC or workstation locally, not to be shared with other computers.

Network Installations

A networked installation allows you to install PC*MILER on network file servers where each end-user can save their own option settings or can share option settings that are stored on the server.

NOTE: PC*MILER 30 supports silent installations.

Citrix/Terminal Services Installations

PC*MILER can be installed onto a Citrix Server or Terminal Services environment, if you have purchased a license to do so. Each end-user must have a license to gain access to PC*MILER.

Trial Installation

A trial installation is a 15-day license to access PC*MILER's features and data. It includes an installation of PC*MILER that provides highway-level routing, mileage and mapping, with options to install street-level routing, truck-specific toll costs, PC*MILER|Energy data, worldwide highway-level mileage and mapping, Canadian postal codes, and SPLC. (These additional features are paid upgrades when purchased.) A trial installation cannot be upgraded, it must be uninstalled and reinstalled to add another product or feature.

2.4 Important Installation Notes – PLEASE READ

Microsoft® Windows® 10 Upgrade Recommendation: If you are on an older version of the Windows operating system, it is strongly recommended that if possible you upgrade to Windows 10 for the desktop and/or Windows 2012 Server. For users who do not regularly install the available Windows updates, upgrading to Windows 10 may save many hours or even days of installing back-logged Windows updates to allow the current version of Microsoft® .NET Framework 4.6.1 to install properly. When .NET 4.6.1 is not installed properly, PC*MILER won't open. For more on the .NET installation, please see the last note in this section.

Who Should Run PC*MILER in Administration Mode: If you're on an operating system that is stricter about permissions, such as Windows Server, please consider running PC*MILER in Administration Mode to avoid possible problems when using the application. Also, users of Microsoft® Windows® 7, 8, 10 and Windows Server 2012 should refer to the note below.

Microsoft Windows 7, 8, 10 and Windows Server 2012 Users: Your license may need to be installed and activated using an Administrator Account. Once installed, you do not have to *Run as Administrator* provided you install to the recommended default directory or to another directory that doesn't require users to *Run as Administrator*. Additionally, the administrator should grant write permissions to the PC*MILER default directory since some of the newer operating systems require an administrator to grant these write permissions.

Microsoft® Windows® 8 and Above: It is strongly recommended that you avoid installing to the Program Files or Program Files (x86) folder. If you need to do so, you'll have to *Run as Administrator* when you open PC*MILER.

IMPORTANT: Microsoft Windows Server 2008 users must install **Windows Server 2008 Service Pack 2** to run PC*MILER Version 29 and higher.

COM DLL's on a 64-Bit Computer: If you install PC*MILER|Connect or PC*MILER|Mapping Version 30 on a 64-bit computer, ALK's 64-Bit COM objects will be automatically registered. For 32-Bit calling applications you can switch to our 32-Bit COM objects by running the UseCom32.bat file found in the PCMILER30/Mapping/com and PCMILER30/Connect/com folders.

PC*MILER Interfaces: For those who interface any PC*MILER component to a transportation management, logistics management or other third party software system, please contact the vendor directly to make sure that the interface to this new version of PC*MILER is updated and complete before you install.

Access to Updates and Patches: Check the PC*MILER Updater frequently for posted updates and patches applicable to your license type and components. In PC*MILER, go the Help tab > *Check for Updates*.

Automatic Installation of Microsoft® .NET Framework 4.6: The PC*MILER Version 30 installation will automatically install Microsoft .NET Framework 4.6 if it is not already installed. This upgrade resolves some feature display issues in the previous version of PC*MILER for users of Windows 8.1, 10 and Server 2012 operating systems. Note that if PC*MILER is being installed from a network, the .NET installation may fail on some machines due to attributes of the installation that ALK cannot control. If this occurs, you can copy the PC*MILER installation to the local machine and install from there.

To ensure correct .NET functionality, ALK strongly encourages users to apply all available Windows Updates. Without the most recent updates, PC*MILER could fail to launch.

IMPORTANT: If this .NET Framework installation is performed, you must reboot when prompted to! PC*MILER won't open properly without a reboot first.

2.5 Installing PC*MILER

2.5.1 Single User Local (Non-Network) Installation

NOTE: Please look over the "Important Installation Notes" in section 2.4 above before beginning your installation.

NOTE: Have your Product Key Code on hand before beginning the installation process. It will be emailed to you from alkservices@alk.com in an email titled "PC*MILER Software Order…" (Enterprise License customers excluded, see note in Step 5 below.) You should see "Single" in this product key email.

CONVERTING SAVED FILES: To import saved custom settings and files from your previous version of PC*MILER, see section 2.8 before installing Version 30.

NOTE for PC*MILER|Traffic Installation: If PC*MILER|Traffic was purchased, a separate email will be sent with a second Product Key Code and you will need to upgrade the PC*MILER license with this code at the end of the installation.   Instructions for installing **PC*MILER|TripDirect** and/or **PC*MILER|Traffic** are included as options in the installation instructions below.

NOTE: If you have a Multi-User Product Key Code and need to perform a Single User install, you will need to contact PC*MILER Technical Support for assistance, as a new Product Key Code is needed. If you cannot get in touch with Technical Support at the time of installation, you can install a Single User License by typing "FREE" in the Product Key field. After installing, please contact Technical Support to update your license status.

UNINSTALLING an OLDER VERSION: If you need to uninstall a previous version of PC*MILER on the computer that you are now installing to, you must do it **before** installing PC*MILER 30 (see section 2.9). If you do not need to uninstall, you can have both versions of the desktop program installed on the same system. Please note that PC*MILER|Connect, PC*MILER|Mapping and PC*MILER| Spreadsheets will be updated to the new version.

BEFORE INSTALLING, please double-check that the emailed Product Key Code(s) lists all purchased components. For example, the code shown below unlocks the following components: PC*MILER|BatchPro, TripDirect, PC*MILER|Tolls, PC*MILER|Streets (U.S. and Canada), and Worldwide highway data.

Order #: SO-000000001
Product Order #: PC*MILER 30
Date: 7/1/2016 10:33 AM
Product Key Code: 3QYKJ-V2KJ7-KJ2F5-82KJ2-KJ2F2

== PC*MILER 30 (Single) BatchPro, Canadian Streets, TripDirect, Tolls, US Streets, Worldwide Data

To install your single-user version of PC*MILER 30, follow these steps:

1. **If you are downloading the installation**, click the provided link in the email that was sent from ALK Technologies and follow the instructions in the email.

   If you are installing using a DVD, place the PC*MILER Install DVD in the DVD or CD/DVD drive and the installation will start automatically. If it does not start automatically, click the Windows **Start** menu. Then, depending on your operating system, either 1) type "d:\setup.exe" and click the search button (if the DVD drive is not the D drive, substitute the letter that designates the DVD drive); or 2) select *Computer > [DVD drive letter] > setup.exe.* See the note for Windows users in section 2.4 if applicable to your version.

2. The InstallShield Wizard **Welcome** screen will open. Click **Next** to review the End-User License Agreement. **NOTE:** Depending on the current status of your Windows operating system, some Windows updates may install automatically before the PC*MILER installation begins.

3. In the next screen, review the license agreement then choose "**I accept…**" If this option isn't selected, the setup won't continue. After selecting it, click **Next** to continue.

4. When prompted, enter a **User Name** and **Company Name** and click **Next**.

5. Enter the **Product Key Code***, or "**FREE**"** for a trial installation. The 25-character product key code will have been emailed from alkservices@alk.com with the subject line "PC*MILER Software Order…". It can be copied from the email and pasted in. If entering the code manually, dashes are not required – dashes, spaces, or no spaces are all acceptable. Click **Next** when finished.
   * **NOTE:** As a convenience to Enterprise License customers, the Product Key Code is hard-coded into the installation and is valid for each install under the contracted terms.
   ** **NOTE:** A trial installation cannot be upgraded, you must uninstall and reinstall to add another product or feature.

6. In the next screen you will see a list of the **Licensed Features** that will be installed. Check to make sure all the purchased features are in the list, then click **Next** to continue.

   NOTE for Enterprise Users: If you need to disable product components that came packaged with your installation, see section 2.5.2 below.

7. Now you will see the **Destination Location** where all components will be installed. To install to the default directory* (recommended), do not make any changes and click **Next**. By default, PC*MILER 30 installs directly to C:\ALK Technologies\PCMILER30.

To install to a location other than the default, click **Change** to select a directory. "PCMILER30" is required at the end of any custom path; for example, "C:\PCMILER\Version30\PCMILER30". If this folder is not detected, PC*MILER will add it automatically – see NOTE below. Click **OK** then **Next** to continue.

IMPORTANT: **DO NOT** attempt to rename your PCMILER30 folder after installation. The "PCMILER30" name is required and renaming it **may cause product failure or unpredictable results**.

IMPORTANT – Microsoft® Windows® 8 and Above: It is strongly recommended that you avoid installing to the Program Files or Program Files (x86) folder. If you need to do so, you'll have to *Run as Administrator* when you open PC*MILER.

8. In the next screen, click **Next** to **Start Copying Files**. To change any settings, select **Back**.

   If you have a previous version of PC*MILER|Connect or PC*MILER| Mapping installed, this alert will appear: "The install found a previous version of Connect (Mapping). These files will be renamed with a .bak extension". If both products were previously installed, you will receive two alerts. Click **OK** in the dialog(s) to continue.

9. Follow through with the rest of the installation. This may take some time depending on the speed of the computer you are installing to. **Do not exit or reboot the computer during the installation.** If any error messages appear, please contact PC*MILER Technical Support – see Chapter 17, *Technical Support and Contact Options*.

10. When the installation is complete, you will be prompted to **view the ReadMe.txt** and to **activate your license**. If you need to use a **Proxy Server** to access the Internet, skip to section 2.5.3, *Activating PC*MILER Using a Proxy Server*. Otherwise, leave these boxes checked and click **Finish** to proceed to the automatic activation (Step 11 below). (**NOTE:** It may take 5-15 seconds for the Product Activation window to open.) When the ReadMe opens, review the information in it and then close the window.

IMPORTANT NOTE: ALK provides a 15-day temporary license prior to completing the activation process. If you make a second attempt to install you will lose this license. If you experience an activation error and need access to PC*MILER before Technical Support is available, please do not attempt a second installation without assistance – you'll be able to use PC*MILER for 15 days without completing the activation.

11. The PC*MILER Product Activation window should be open. (If it is not
    open, select the Windows **Start** menu > **All Programs** (or equivalent) >
    PCMILER 30 > **License Status** to open the License Tool window, then click
    Activate.)

    <u>**If you are an Enterprise License Customer**</u>: You can bypass the following
    license activation steps of the install because you are already activated and
    registered with ALK. To continue, close the Product Activation window then
    proceed to Step 15 to open PC*MILER and start using the application.

    <u>**If you are not an Enterprise License Customer**</u>: If the computer you are
    installing to has an Internet connection and you have a valid email address, the
    license activation can be processed automatically. Enter your **Email Address**
    then click **Activate**. "**Manual Activation**" should be left unchecked.

    NOTE: Internet license activation is available 24 hours a day. If you don't
    have an active Internet connection or email address, please contact PC*MILER
    Technical Support during business hours for assistance.

12. When the activation process is complete, you will receive a message in the
    Product Activation window saying, "License Activation Complete!". Close
    the window to continue. If the activation failed, skip to Step 17 below for
    manual activation.

13. To verify that PC*MILER is now licensed, go to the Windows **Start** menu >
    All Programs (or equivalent) > **License Status**. In the PC*MILER License
    Tool window, verify that "**Licensed**" appears under **Status**. PC*MILER is
    now activated. If "Licensed" is NOT in the Status field, skip to Step 17 below
    for manual activation.

    If an additional license was purchased, you can install it now or it can be
    installed at a later time. See section 2.5.4 for instructions on how to add the
    license to your base PC*MILER application.

14. If the automatic activation was completed, close the License Tool window.
    An email titled "PC*MILER 30 Activation Code for Product XXXXX…"
    from alkservices@alk.com will be sent to the email you entered in Step 11.
    You only need to keep this email for your records.

15. To start PC*MILER once the installation is complete, click the PC*MILER
    icon on the desktop, or click the Windows **Start** menu > **All** (or equivalent) **>**
    PCMILER 30 > **PCMILER 30**.

16. Before using PC*MILER, click the Help tab > *Check for Updates* and
    download and install any available updates (see section 17.3).

17. (You only need to follow these steps if the automatic license activation process failed.) If the automatic activation (Steps 11-12 above) fails for any reason, try manually activating. In the Product Activation window, enter your **Email Address** then check "**Manual Activation**".

18. Next, click the provided URL for the ALK activation site.

19. You will be taken to the ALK Technical Support "Activate Product" web page, and your PC*MILER product key will automatically populate the **Product Key** fields. Click **Next** to continue.

20. In the next screen, enter your **Email** address and click **Finish**.

21. An email titled "PC**MILER** 30 Activation Code for Product XXXXX…" from alkservices@alk.com will immediately be sent to the email you entered.

22. Copy the activation code directly from the Activation web page or from the email sent to you, and paste it into the **Activation Code** field in the Product Activation window.

23. Click **Activate** in the Product Activation window to complete the activation.

24. You will see the message "License Activation Complete!". Close the Product Activation window. PC*MILER is now activated.

25. Start PC*MILER once the installation is complete: click the PC*MILER icon on the desktop, or click the Windows **Start** menu > **All Programs** (or equivalent) > **PCMILER 30** > **PCMILER 30**.

26. Before using PC*MILER, click the Help tab > *Check for Updates* and download and install any available updates (see section 17.3).

2.5.2 Disabling Licensed Features *(Enterprise Users Only)*

If you are an Enterprise User and need to disable one or more features that came packaged with your installation, follow the steps below before installing.

1. Open a command prompt window (for Windows 7, click the Windows **Start** menu, type "**cmd**" and then press **Enter**).

2. In the command prompt window, navigate to the folder containing PC*MILER's setup.exe by typing **cd "C:\your_install_location"**. Example: **cd "C:\alk technologies\pcmiler30"**

3. To launch the install while turning a specific feature off, type the following: **setup.exe "FeatureName1 off" "FeatureName2 off" "FeatureName3 off"**

For example, to turn off the Connect and Mapping features:
setup.exe <space>**"Connect**<space>**off"**<space>**"Mapping**<space>**off"**

Features that can be disabled this way are the following (not case sensitive):

• CanPost	• TripMatrix	• TCPIP	• Connect
• MVSConnect	• CanadaStreets*	• Tolls	• BatchPro
• AS400	• U.S. Streets*	• Traffic	• Mapping
• AS400 Tolls	• SPLC	• TripDirect	• Spreadsheets

* To turn off North American Streets (includes U.S. and Canadian Streets), use the command: **setup.exe "CanadaStreets off" "Streets off"**.

2.5.3 Activating PC*MILER Using a Proxy Server

1. When the installation is complete (Steps 1-9 in section 2.5.1 above), uncheck the **Activate** check box and then click **Finish**.

2. Next, start PC*MILER: Either click the PC*MILER icon on the desktop, or click the Windows **Start** menu and then select **All Programs** (or equivalent) > **PCMILER 30** > **PCMILER 30**.

3. Select the Help tab > *Proxy Setup.*

4. In the Proxy Setup dialog, check **Use Proxy Server** then enter a **Host** and **Port**.

5. If needed, check **Proxy Authentication** then enter a **Username** and **Password**.

6. Click **OK** to save your settings and close the dialog. PC*MILER is now set up to use the indicated proxy server when connecting to the Internet.

7. Close PC*MILER.

8. In the Windows **Start** menu, select **All Programs** (or equivalent) > **PCMILER 30** > **License Status** to open the PC*MILER License Tool window, then click **Activate**.

9. Follow the steps in section 2.5.1 for automatic activation, beginning at Step 11.

2.5.4 Installing Additional Licensed PC*MILER Products

NOTE: A **trial installation** cannot be upgraded, you must uninstall and reinstall to add another product or feature. A **multi-user license** cannot be changed to a single-user installation of PC*MILER by simply adding the license – you must fully uninstall, deactivate your multi-user license, then reinstall using the new Product Key Code.

NOTE Also: To install data add-on modules, see section 2.5.5 below.

These instructions apply to the products listed below. For data add-ons such as PC*MILER|Worldwide, PC*MILER|Tolls, or PC*MILER|Streets, see section 2.5.5.

PC*MILER|Traffic	PC*MILER|Mapping
PC*MILER|Weather	PC*MILER|Spreadsheets
PC*MILER|TripDirect	PC*MILER|TCP/IP
PC*MILER|Connect	PC*MILER|RouteMatrix
PC*MILER|BatchPro	

SINGLE USER INSTALLATION

If a license for any of the products listed above was purchased, a separate upgrade product key was sent in an email along with the base PC*MILER product key or at a later date when the license was purchased. Follow the steps below to install the additional product after the base version of PC*MILER has been installed and activated.

1. If the PC*MILER License Tool window is not already open, select Windows **Start** menu > **All Programs** (or equivalent) **> PCMILER 30 > License Status**.

2. Click **Add License**.

3. In the PC*MILER Product Activation window, enter the upgrade **product key** that was emailed to you and click **Add License**.

4. When prompted, enter your **Email Address** then click **Activate**.

5. When the activation process is complete, you will see the message "License Activated Successfully." The upgrade is now complete and the Product Activation window can be closed.

6. You will immediately receive an email from ALK Technologies that contains the new activation code for this upgrade. Keep this email for your records.

7. To start PC*MILER, double-click the PC*MILER icon on the desktop, or select Windows **Start** menu > **All Programs** (or equivalent) **> PCMILER 30** > **PCMILER 30**.

MULTI-USER INSTALLATION, FROM A WORKSTATION

1. Go to the workstation.

2. Browse to the shared …\PCMILER30\network folder on the server.

3. Run the setup.exe and choose "**Modify**".

4. Follow through with the rest of the installation.

2.5.5 Installing PC*MILER Data Add-ons

NOTE: A trial installation cannot be upgraded, you must uninstall and reinstall to add another product or feature.

These instructions apply to the data add-ons listed below. For licensed products such as PC*MILER|Connect, PC*MILER|Traffic, PC*MILER|Weather, etc. see section 2.5.4.

PC*MILER|Worldwide*	PC*MILER|Energy
PC*MILER|Streets	DTOD Data
PC*MILER|HazMat	Canadian Postal Codes
PC*MILER|Tolls	SPLC Data

* including PC*MILER|Worldwide Streets data sets

SINGLE USER INSTALLATION OF AN ADDITIONAL LICENSE

If a license for any of the data products listed above was purchased, a separate upgrade product key was sent in an email along with the base PC*MILER product key. Follow the steps below to install.

IMPORTANT NOTE: Please check that you have the latest updates before installing additional components. Open PC*MILER and select the Help tab > *Check for Updates.* Download and install any listed updates before installing additional data sets.

1. Select the Windows **Start** menu > **All Programs** (or equivalent) > **PCMILER 30** > **License Status**.

2. In the PC*MILER License Tool window, click **Add License**.

3. Enter the product key code for the purchased data set. This key was included in the email sent to you at the time of purchase from alkservices@alk.com with subject line "PC*MILER Software Order…". The product key can be copied from the email and pasted.

4. Click **Add License**.

5. Enter your **Email Address** in the next screen, then click **Activate**.

6. When the activation is finished you will see a "**License Activation Complete!**" message and an activation code will be emailed to you from ALK. You only need to keep this code for your records.

7. Close the Product Activation and License Tool windows by clicking on the "X" in the upper right corner of each window.

8. To download and install the data set:

   If you are using a DVD, insert the DVD and skip to Step 10.

   If you are not using a DVD, open PC*MILER and either click the **PC*MILER Updater** button or select the Help tab > *Check for Updates.*

9. Select "**Download & Install**" to the right of the new data set you are adding. The download process will take several minutes.

10. When the download is finished, the PC*MILER Data Add-On InstallShield Wizard will open. Click **Next** to continue.

11. Select "**I accept the terms of the license agreement**" then click **Next**.

12. *(AUP Customers Only)* At this point, you may see a prompt asking if you want to delete the data from the previous quarter. Select **Yes** or **No**.

13. The next screen will list the **Licensed Features** that will now be installed. Click **Next**. (Note that the list may include components that are already installed.)

14. In the next screen, click **Next** to **Start Copying Files**. Click **OK** if any prompts pop up during this process.

15. At the end of the copying process, a prompt will appear that says "Setup will now create a backup copy of your user.cfg file…". Click **OK**.

16. Click **Finish** in the next screen. Your data add-on is now ready to use.

The title bar of the PC*MILER application window will include the installed data add-ons, and you will see the new data set in the Map tab > *Change Data Set* menu.

All installed data sets are listed in this menu, and the data set you just installed will be activated by default. See section 3.5.7 on changing the data set.

MULTI-USER INSTALLATION OF A LICENSE FROM A WORKSTATION

1. Go to the workstation.

2. Browse to the shared …\PCMILER30\network folder on the server.

3. Run the setup.exe and choose "**Modify**".

4. Follow through with the rest of the installation.

2.5.6 Multi-User Network Installation

NOTE: Please look over the "Important Installation Notes" in section 2.4 before beginning your installation.

NOTE: PC*MILER 30 supports silent installations.

NOTE: Have your **Product Key Code** on hand before beginning the installation process. It will have been emailed from alkservices@alk.com in an email titled "PC*MILER Software Order…" (*Enterprise License customers excluded*) You should see "*X-User*" in the Product Key email, indicating that you have purchased a multi-user license. If not, please contact an Enterprise Solutions account executive to purchase the correct license.

UNINSTALLING AN OLDER VERSION: If you need to uninstall a previous version of PC*MILER on the computer that you are now installing to, you must do it **before** installing PC*MILER 30. If you do not need to uninstall, you can have both versions of the desktop program installed on the same system. Please note that PC*MILER|Connect, PC*MILER|Mapping and PC*MILER| Spreadsheets will be updated to the new version.

CONVERTING SAVED FILES: To import saved custom settings and files from your previous version of PC*MILER, see section 2.8.

PC*MILER|Traffic, PC*MILER|Weather, and PC*MILER|TripDirect: For each of these purchased products, a separate email will be sent with another Product Key Code and you will need to upgrade the PC*MILER license with this code at the end of the installation or at a later time. See section 2.5.4.

NOTE FOR INSTALLING TO A MAPPED DRIVE: For customers who install to a mapped drive (this is rare), do not enter the location by its mapped name. For example, if you mapped C:\Apps to F:\, just use C:\Apps as the install directory

when InstallShield asks you for the location. Beginning in Version 28, the Windows program that PC*MILER uses to automate folder sharing cannot share mapped drives by using their mapped name (i.e. F:\ in the example above).

BEFORE INSTALLING, double-check that the emailed Product Key Code(s) lists all purchased components. For example, the code shown below unlocks the following components: PC*MILER|Connect, PC*MILER|Tolls, TripDirect, PC*MILER| Streets (U.S. and Canada), and Worldwide highway data.

Order #: SO-000000001
Product Order #: PC*MILER 30
Date: 7/1/2016 10:33 AM
Product Key Code: 3QYKJ-V2KJ7-KJ2F5-82KJ2-KJ2F2
== PC*MILER 30 (XX-User), Canadian Streets, Connect, Tolls, TripDirect, US Streets, Worldwide Data

To install PC*MILER 30 on a network, follow these steps:

1. Begin by installing PC*MILER to the server: follow steps 1-9 for a *Single User Local Installation* (section 2.5.1 above).

2. You will be notified when the installation is complete. Click **OK**.

3. You will be prompted to **view the ReadMe.txt** and to **activate your license**. If you need to use a **Proxy Server** to access the Internet, skip to section 2.5.3. Otherwise, leave these boxes checked and click **Finish** to continue. Review the ReadMe and then close the window.

   IMPORTANT NOTE: ALK provides a 15-day temporary license prior to completing the activation process. If you make a second attempt to install you will lose this license. If you experience an activation error and need access to PC*MILER before Technical Support is available, please do not attempt a second installation without assistance – you'll be able to use PC*MILER for 15 days without completing the activation.

4. After you click **Finish**, the PC*MILER Product Activation window will open.

   <u>**If you are an Enterprise License Customer**</u>: You can bypass the following license activation steps of the install because you are already activated and registered with ALK. To continue, close the Product Activation window. PC*MILER is installed on the server and can be opened by double-clicking the PC*MILER icon on the desktop, or clicking the Windows Start menu and selecting **All Programs** (or equivalent) > **PCMILER 30** > **PCMILER 30**.

   <u>**If you are not an Enterprise License Customer**</u>: If the computer you are installing to has an Internet connection and you have a valid email address, the

license activation can be processed automatically. Enter your **Email Address** then click **Activate**. "Manual Activation" should be left unchecked.

> **NOTE:** Internet license activation is available 24 hours a day. If you don't have an active Internet connection or email address, please contact Technical Support during business hours for assistance – see section 16.1.

5. If the activation is successful, you will see a "**License Activation Complete**" message that directs you to open an email from ALK Technologies for further instructions. If the activation was NOT successful, try activating manually (Steps 17-26 in section 2.5.1) before calling Technical Support. To contact Technical Support, see section 17.1 in this *User's Guide*.

6. After activation, open the email you received, then follow the instructions for copying the "**net.lic**" file included with the email to the "App" folder in your PC*MILER installation. Net.lic holds the license or user count for your installation. Until you save this file to the designated folder, you will only have a single-user installation. The PC*MILER application is now accessible on the server (see Step 2 below for access options).

INSTALLING ON A WORKSTATION

To install PC*MILER on each workstation, follow these steps:

1. On the workstation**,** click the Windows **Start** menu and enter the network path to where the workstation setup program resides**.** This path should match the network path sent to your email address as a result of running the server installation. The only difference is that you will replace "App" with "Network". For example, if this path was sent via the email as "\\PRI-QA-2K332-02\PCMILER30\App\" for the network license file, you will run the workstation installation program from \\PRI-QA-2K332-02\PCMILER30\Network\setup.exe then press **Enter**.

    If you have lost the email that included the network path, you can determine the path as follows: navigate to the server's "PCMILER30" folder, right click the folder, and go to Properties > Sharing. The network path can be copied and pasted from there.

2. Next, you will be asked to choose your workstation setup options. Two screens will prompt you to select the type of settings you would like to use.

    The setup options in the first screen (Settings Location) are:

    - **Use local setting** – Allows the user at each workstation to customize default options and manage settings, including custom roads and places.
    - **Share network settings** – Provides each workstation the same default options and settings within the application.

The setup options in the second screen (Settings Data) are:

- **Use local data** – Installs data to the local workstation. This option can decrease the time it takes PC*MILER to open and begin processing, and reduces network traffic. In general, the performance is better. However, there must be enough hard disk space to accommodate the data.

- **Share data on your network, default** – This is the default choice. PC*MILER uses the shared data that was installed on the server.

NOTE on Fuel Prices: The feed that keeps fuel prices updated (section 3.13) will be turned off by default because the server will be getting the prices automatically. Ensure that the PC*MILER user interface is running on the server so that fuel prices are regularly updated. For PC*MILER|Connect use, ensure that the PC*MILER user interface is running on the PC*MILER|Connect server.

NOTE for PC*MILER|TripDirect Users: Currently only one TripDirect account is allowed per installation. To access TripDirect functionality from multiple workstations, one master TripDirect account must be shared.

Tech Note on SWITCHING DATA SETS: Each workstation will own the local user.cfg file stored in the PC*MILER App folder, and the server won't have access to this file. When the workstation user swaps the data set, the local config file will be updated with the current country/region data.

3. To start PC*MILER on a workstation once the installation is complete, double-click the desktop PC*MILER icon, or click the Windows **Start** menu and select **All Programs** (or equivalent) > **PCMILER 30** > **PCMILER 30**.

4. Before using PC*MILER, click the Help tab > *Check for Updates* and download and install any available updates (see section 17.3).

2.5.7 Citrix and Terminal Services Installations

NOTE: Please look over the "Important Installation Notes" in section 2.4 before beginning your installation.

NOTE: Have your **Product Key Code(s)** on hand before beginning the installation process. They will be emailed to you from alkservices@alk.com in an email with the subject line "PC*MILER Software Order…" (*Enterprise License customers excluded*). "(Citrix/Terminal Services)" will be included in the Product Key email signifying that you have purchased a Citrix or Terminal Services license. If this is not listed, please contact an Enterprise Solutions account executive to purchase the correct license and request one Product Key Code for each individual server you are installing to.

UNINSTALLING AN OLDER VERSION: If you <u>need to uninstall</u> a previous version of PC*MILER on the computer that you are now installing to, you must do it **before** installing PC*MILER 30. If you do not need to uninstall, you can have both versions of the desktop program installed on the same system. Please note that PC*MILER|Connect, PC*MILER|Mapping and PC*MILER| Spreadsheets will be updated to the new version.

Custom places, custom road preferences, and geofence files that were saved in an older version of PC*MILER can be transferred and converted to Version 30. For custom place conversion, see section 3.15.7. For custom road conversion, see section 12.1.7. For geofence conversion, see section 12.4.6.

CONVERTING SAVED FILES: To import saved custom settings and files from your previous version of PC*MILER, see section 2.8 <u>before installing the new version</u>.

PC*MILER|Traffic, PC*MILER|Weather, and PC*MILER|TripDirect: For each of these purchased products, a separate email will be sent with another Product Key Code and you will need to upgrade the PC*MILER license with this code at the end of the installation or at a later time. See section 2.5.4.

BEFORE USING PC*MILER: Citrix supports 16 bit and 24 bit color, while PC*MILER supports 16 bit and 32 bit color. A Citrix end user must set the color resolution on their workstation to 16 bit before they log into a Citrix server to run PC*MILER. If an end user has their color resolution set to 32 bit and logs in to Citrix, the Citrix software will adjust it downward to 24 bit prior to loading PC*MILER, and PC*MILER will fail to load.

BEFORE INSTALLING, please double-check that the emailed Product Key Code lists all purchased components. For example, the code shown below unlocks the following components: PC*MILER|BatchPro, PC*MILER|Tolls, TripDirect, PC*MILER|Streets (U.S. and Canada), and Worldwide highway data.

Order #: SO-000000001
Product Order #: PC*MILER 30
Date: 7/1/2016 10:33 AM
Product Key Code: 3QYKJ-V2KJ7-KJ2F5-82KJ2-KJ2F2
== PC*MILER 30 (Citrix/Term Serv), BatchPro, Canadian Streets, Tolls, TripDirect, US Streets, Worldwide Data

If you were using an existing version of PC*MILER with PC*MILER|Connect and/or PC*MILER|Mapping in your Citrix environment, there may be existing files that require deletion. Citrix and Terminal Servers can have multiple copies underneath C:\Users\<username>\Windows, C:\Documents and Settings\ <username>\Windows or in %homedir%\windows like H:\Windows. Copies of the following files should be deleted from any location outside of C:\WINDOWS:

- Pcmserve.ini
- Pcmserve.ctx

- Pmwssrv.ini
- Pmwssrv.ctx

Only a qualified Citrix administrator should be installing PC*MILER on a Citrix system. With Citrix in Install Mode, follow the steps in section 2.5.1, *Single User Local (Non-Network) Installation.*

2.5.8 AS/400 and CICS Installations

Installation instructions can be downloaded from ALK's website Support Center at: http://www.alk.com/support.

2.6 Starting and Closing PC*MILER

To start the PC*MILER application, double-click the PC*MILER icon on the desktop, or click the Windows **Start** menu > **All Programs** (or equivalent) **> PCMILER 30** > **PCMILER 30**.

To close PC*MILER, choose *Exit* from the red File application menu, press **Alt+F4**, or simply close the application window.

2.7 Proxy Setup For Internet Access

The following PC*MILER features require a connection to the Internet:

- License activation
- Software update and patch downloads via the Updater tool
- Real-time traffic data *(license required)*
- Satellite imagery on the PC*MILER map
- PC*MILER|TripDirect *(license required)*
- PC*MILER|Weather map display *(license required)*
- ALK's MapSure in a browser *(PC*MILER|Streets required)*

For those who need to bypass current security settings to access the Internet while using PC*MILER, the steps to complete the proxy setup are below. The setup can be implemented after PC*MILER has been activated or before activation during the temporary grace period after installation.

1. Open PC*MILER and select the File menu > *Application Settings* > **Proxy**.

2. Check **Use Proxy Server** then enter a **Host** and **Port**.

3. If needed, check **Proxy Authentication** then enter a **Username** and **Password**.

4. Click **OK** to save your settings and close the dialog. PC*MILER is now set up to use the indicated proxy server when connecting to the Internet.

2.8 Importing Saved Files and Settings From a Previous Version

Saved route files, custom road preferences, custom places, and geofence files can all be imported from the previous version of PC*MILER to the newly-installed version. Saved route files will be automatically updated when they are opened in PC*MILER 30. For custom place conversion, see section 3.15.7; custom road conversion, see section 12.1.7; geofence conversion, see section 12.4.6.

Additionally, a Settings Importer utility is provided that lets you import customized route options, custom road speeds, map feature settings, custom route profiles, and general application settings from the previous version. Here are a few things to note about this utility:

- It will only import from the previous year's release – i.e. from Version 29 to Version 30.

- The following settings **won't be imported** and must be reset in Version 30:
  - Length and Distance unit of measure (English/Metric)
  - Fuel in (gallons/liters)
  - State/Country Report Order (alphabetical/route order)
  - Settings that change annually, such as currency conversion rate and route costs.

- The current default values in PC*MILER will be overwritten. For trip options and road speeds, only those values that have been customized in the previous version will be imported.

- The import utility includes a license check and won't run on workstations using shared data. An error message will appear if an import request cannot be processed.

To use the Settings Importer, follow these steps:

1. Select the Windows **Start** menu > **All Programs** (or equivalent) > **PCMILER 30** > **Settings Importer**.

2. In this dialog, uncheck any settings you do NOT want to import.

3. Choose a version from the **Import Settings from Version** drop-down.

4. Click **Import** to proceed with the import (click **Close** if you decide not to proceed). Close the Settings Importer window when the process is complete.
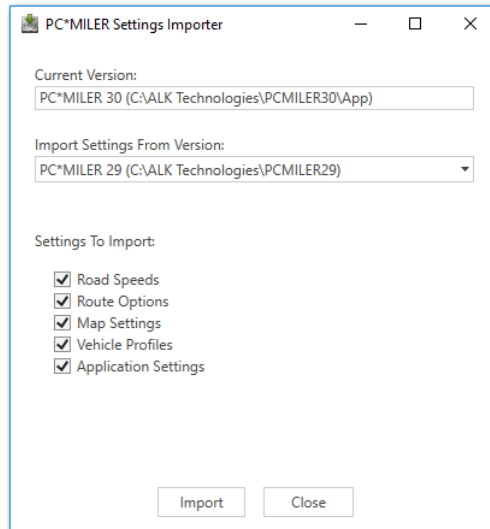
PC*MILER Settings Importer

2.9 Deactivating and Uninstalling a License

You must fully deactivate the product's license and uninstall all PC*MILER components, including local, network, enterprise, or server installations if you are:

- Moving any PC*MILER installation to a new computer.
- Reformatting a computer that PC*MILER is currently installed to.
- Returning the product.
- Reinstalling on the same PC.

Here are the steps for deactivating and uninstalling:

1. Go to **Start > All Programs** (or equivalent) **> PCMILER 30 > License Status** and in the PC*MILER License Tool window click **Deactivate**.

2. In the PC*MILER Product Deactivation window, click **Deactivate**.

3. When the deactivation is complete, you will see a "Deactivation Complete" message, with the deactivated product keys listed below.

4. Close the Product Deactivation and License Tool windows.

5. To uninstall after deactivating, go to the **Start** menu > **Settings** > **Control Panel** > **Programs and Features** (or the equivalent on your system).

6. Highlight **PC*MILER 30**, right-mouse click and select **Uninstall**.

7. Click **Yes** at the prompt to completely remove the application.

8. Click **Finish** when the installation process is complete.

> **NOTE:** If any messages appear during the uninstall process that say that a certain file cannot be removed, click **OK** to continue.

9. **!! IMPORTANT STEP !!** Once the uninstall process is finished, you will need to delete the **…ALK Technologies\PCMILER30** folder manually to completely remove the PC*MILER application from your system. The default location for this folder is C:\ALK Technologies\PCMILER30.

> **NOTE:** If you deactivated/uninstalled an installation that included PC*MILER components that were licensed and added after the initial installation, you will need to add those components separately again when you reinstall.

2.10 Installation: Frequently Asked Questions

For FAQs related to problems you may have with the installation of your PC*MILER products, please go to www.alk.com/support.

2.11 User Guides, Online Help, and Technical Support

> **NOTE:** You must have Adobe Acrobat Reader on your computer to properly view the PC*MILER user's guide and other documentation. If you do not have this program installed already, a free copy can be downloaded from www.adobe.com. Using another reader may result in faulty pagination.
>
> To make Adobe Reader your default reader, from within the application select the Edit menu > Preferences > General and click **Select Default PDF Handler**. Select Adobe Reader from the drop-down, and click **Apply** then **OK** to close the Preferences dialog.

The *PC*MILER User's Guide* can be accessed from within PC*MILER by selecting the Help tab > *Help Index*, by pressing the **F1** key, or by clicking a Help button in any dialog.

To view the user guide for any PC*MILER product without first opening an application, click the Windows **Start** button > **All Programs** (or the equivalent on your system) > **PCMILER 30** > *User Guides* and select one of the .pdf files from the sub-menu. Or look on your PC's desktop for the "PC*MILER 30 User's Guide" icon that was installed with PC*MILER.

User guides can also be accessed at www.pcmiler.com/support.

To search for a keyword or phrase in a user guide, use Adobe Reader's **Find** option in the Edit or View menu, or on the toolbar (depending on your version of the Reader). Type a word or phrase into the *Find* box, and use the drop-down menu to refine your search if necessary.

Technical Support

ALK Technologies offers one year of free unlimited technical support to applicable registered users of PC*MILER. See Chapter 17 for contact options.

ReadMe File

Consult the **ReadMe** file for last-minute product information, updates to the PC*MILER documentation, and additional feature information. To see this file after PC*MILER has been installed, click the Windows **Start** menu > **All Programs** (or the equivalent option) > **PCMILER 30** > **ReadMe**.

Version Release Notes

To access Version Release Notes detailing what's new in the current annual version release of PC*MILER and related products, go to the Windows **Start** menu > **All Programs** (or the equivalent option) > **PCMILER 30** > **Version Release Notes**.

2.12 PC*MILER Feature Reference Guide

In Version 30, several core features have been redesigned and some options have been moved, renamed or eliminated.

For users of previous versions of PC*MILER who are updating to Version 30, a reference table in PDF format is provided so you can quickly find the features and options that you are already familiar with. New features are listed as well.

To access the *Feature Reference Guide*, click the Windows **Start** menu and select **All Programs** (or the equivalent option for your version of Windows) > **PCMILER 30** > **User Guides** > **Feature Reference Guide**.

PDF documents can be searched for a key word – type the word into the *Find* box on the toolbar. If this box is not visible, select the View menu > *Toolbars > Find*. The drop-down menu off the *Find* box can be used to refine your search. See the NOTE in section 2.11 above on using Adobe Reader to view PC*MILER user guides.

Basic Routing

3.1 The PC*MILER Application Window

When you first open PC*MILER, you'll see an active route window on the left, the PC*MILER map window on the right, and a Ribbon toolbar at the top. The Ribbon contains layered toolbars organized in tabs like a set of file folders. When you click a tab, the attached toolbar becomes visible. Users of recent versions of Microsoft® Office® and Windows® will be familiar with the Ribbon format.

The options in each toolbar on the Ribbon pertain to tasks that are related to each other. For example, all tools in the Map tab perform tasks related to the map window. In the screenshot below, the Routes toolbar is visible.
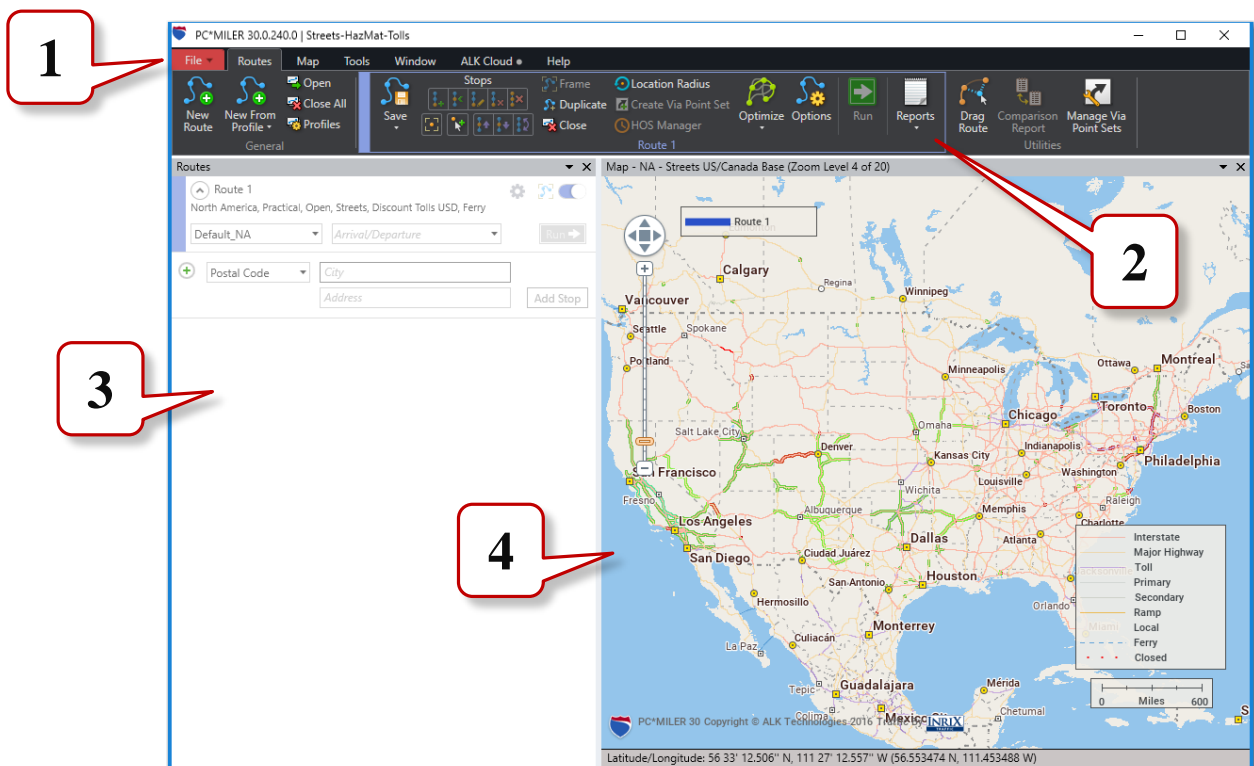
*PC*MILER Application Window*

1 - **The File Application Menu**. Click the red File drop-down to open the PC*MILER application menu. Use this menu to print and save maps and

reports, change application settings, close all open routes or reports, and to exit PC*MILER.

2 - **The Ribbon**, with the **Routes** tab selected. The Routes toolbar provides tools for entering and editing stops on a route, setting route options, and generating routes and reports.

There are six tabs on the PC*MILER Ribbon: **Routes**, **Map**, **Tools**, **Window**, **ALK Cloud**, and **Help**. The Ribbon can be minimized if needed: right click on it and select *Minimize the Ribbon.*

Show Quick Access Toolbar below the Ribbon

Minimize the Ribbon
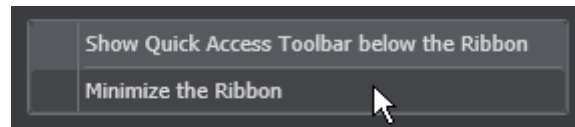
3 - **The Routes Window**. This is where all your trips are created and edited. To float this window, click the down arrow in the upper right corner and choose *Float.* Up to eight routes can be open simultaneously inside the Routes window. Click the Routes tab > *New Route* to open a new route entry window in which you can enter stops and then generate costs, miles and time estimates. When there's not enough room to display all open routes, a scroll bar appears on the right edge of the Routes window that allows access to the hidden routes.

4 - **The PC*MILER Map Window**.   The PC*MILER map window is a versatile, floatable window. To float it, click the down arrow in the upper right corner and choose *Float.*

Each route you run is automatically drawn on the map in the indicated color. (This color is shown on the left edge of each route window, in the Route legend on the map, and on the Ribbon.) Use this window to compare routes, zoom into stops and specific locations, pick stops directly from the map, drag a generated route onto new roads, create avoid/favor preferences, and more. With PC*MILER|Weather and PC*MILER|Traffic installed, the map can display current weather patterns and traffic data as well. *(Applicable licenses required.)*

3.2 Using the Quick Access Toolbar

The PC*MILER application window includes a customizable Quick Access Toolbar that allows quick access to some of the features on the Ribbon that you use frequently, without clicking a tab first. The toolbar is only displayed when at least one button has been added to it.

To put a button on the toolbar, right click the button and select *Add to Quick Access Toolbar*. The toolbar will appear in its default location below the Ribbon.
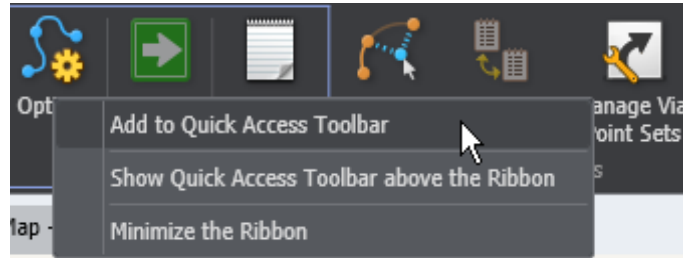
To remove a button, right click it on the Quick Access Toolbar and select *Remove from Quick Access Toolbar.*
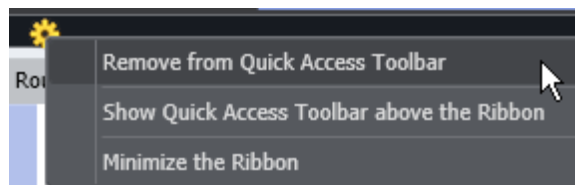
To put the toolbar above the Ribbon, right click it and select *Show Quick Access Toolbar above the Ribbon*. The Quick Access menu also gives you the option to minimize the Ribbon to increase the workspace in the application window.

Not all buttons can be placed on the Quick Access Toolbar, only buttons that perform an action (e.g. *New Route* or *Options*). Drop-downs (e.g. *Save*) and toggle buttons (e.g. *Avoid Roads* or *Drag Route*) can't be added, but items in a drop-down that have an icon can be. If the Quick Access Toolbar isn't available for a button, the option to add it will be disabled in the right mouse menu:
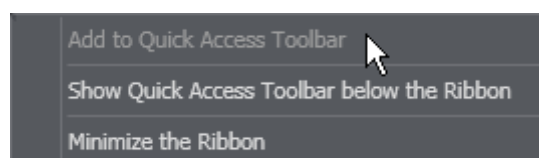
3.3 Window and Layout Options

The three panes in the PC*MILER application window – Routes, Map and Reports – can be arranged in several different layouts. Select the Window tab > *Layouts* and choose your preferred layout. Use the *Report Location* menu to choose a position for the Reports window. The *Routes Window* and *Map Window* buttons can be used to recover these windows when they have been hidden.
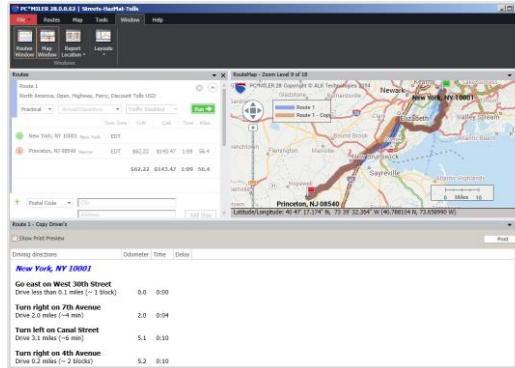
Default Layout
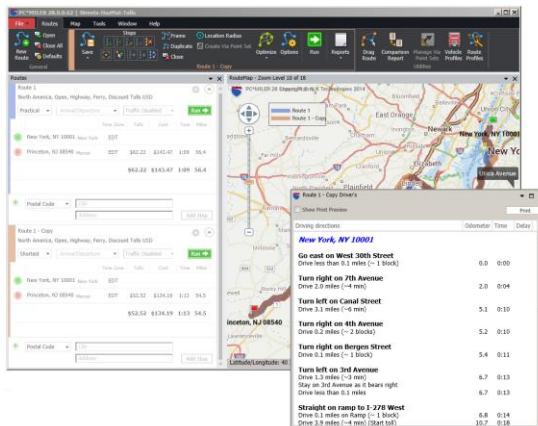
Routes on the Left, Floating Reports
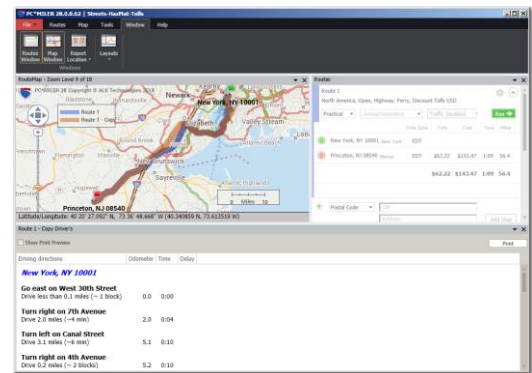
Routes on the Right, Bottom Reports
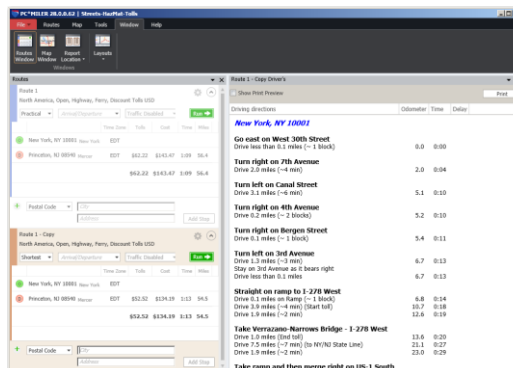
Routes and Reports, Hidden Map

Additionally, these panes can be individually resized, floated as a separate window, or hidden. Click the down arrow in the window controls and select an option.

Float	Detaches the pane from the main PC*MILER application window, so that it can be moved around your screen and placed in a convenient position or resized.
Dock	Reverses the "Float" command – the pane will return to its previous position inside the PC*MILER application window.
Hide	Hides the pane. Another way to do this is to simply click the "X" next to the drop-down arrow. To reopen, use the options in the Window toolbar.

3.4 PC*MILER Shortcut Keys

For those who prefer using a keystroke rather than making a selection with the mouse, PC*MILER provides shortcut keys for commonly-used options. These alternate keystrokes are listed below.

KEY(S)	FUNCTION
F1 or F3	Open the PC*MILER *User's Guide* for help with a feature.
F2	Invoke the Custom Place Manager.
Alt+F2	Invoke the Avoid/Favor Manager.
Alt+F3	Invoke the Route Options dialog for the active route.
F4	Generate a Comparison Report.
F5	Display the Detailed Route Report for the active window.
F6	Display the State/Country Report.
F7	Insert a stop above the one highlighted on the stop list.
F8	Delete the stop that is highlighted on the stop list.
Alt+F8	Delete all stops in the route window.
F10	Generate routes and distances ("Run" in the route window).
Alt+F10	Optimize the stop order for an optimal route.
Alt+Bkspace	Undo typing in any entry field.
Ctrl+S	Save the active route with the existing filename.
Ctrl+Shift+S	Save the active route with a new filename.

Ctrl+C	Copy the open report to the clipboard for use with another program.
Ctrl+N	Open a new route.
Shift+↑	Move the highlighted stop up one line on the stop list.
Shift+↓	Move the highlighted stop down one line on the stop list.

3.5 Building a Route

To create a new route, you should be in the Routes tab of the Ribbon. If a blank route window isn't visible, select the Routes tab > *New Route* or **Ctrl+N** on your keyboard.
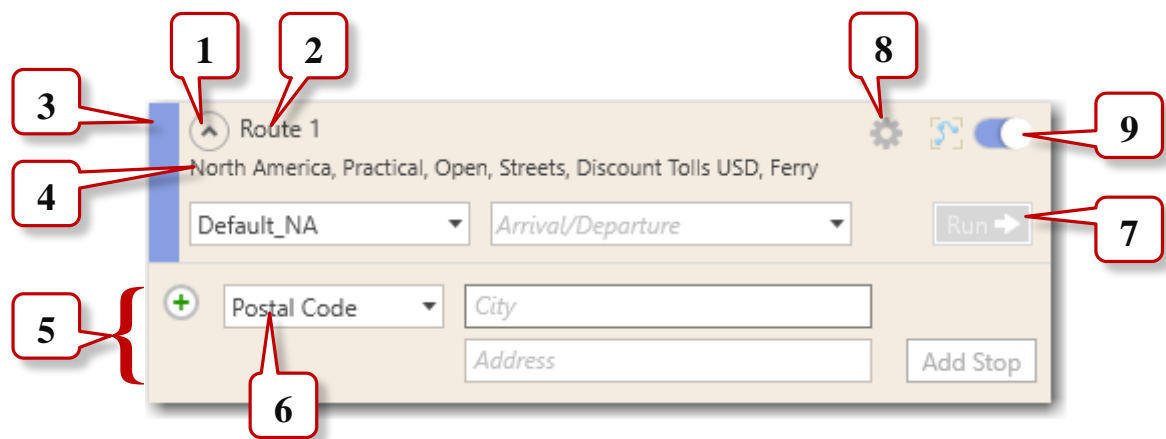
New Route Window

1 - More/Less Button. Use this button to toggle between a fully expanded and a minimal view of the route window.

2 - Route Name. By default, each new route is named "Route 1", "Route 2", etc. A custom route name can be assigned in the Route Options dialog (see section 10.4). The route name appears in all reports and in the Route legend on the PC*MILER map.

3 - Color Bar. Each route displays in a different color on the PC*MILER map. A route's color is shown in this color bar, on the Ribbon in the Routes toolbar, and in the Route legend on the map.

4 - Currently Selected Route Options. Current route options are displayed here, under the route name. The drop-downs below let you select a route profile, and set an arrival/departure time and travel speed option.

5 - Stop Entry. Stops are entered here in the *City* field. If PC*MILER|Streets is installed, an address can also be entered in the *Address* field. Click **Add Stop**

or press **Enter** on your keyboard to validate the stop and add it to the stop list for this route. The input must match the stop type shown to the left.

6 - **Stop Type Drop-down.** The stop type defines the type of input that will be accepted in the *City* field.

7 - **"Run" Button.** When at least two valid stops are entered for a route, this button turns green. Click it to generate distance, cost, and time estimates.

8 - **Route Options (Gear) Button.** Click the gear to access the Route Options dialog or TripDirect (if installed), generate reports, and to float, dock or close the route window.

9 - **Frame Route and Show/Hide Route.** Use these buttons to frame the route on the map, and to toggle the map display of the route on/off.

3.5.1 Stop Entry

IMPORTANT NOTE For PC*MILER|Worldwide and DTOD Data Users: You must have the **proper region** selected when you enter stops on a route. See section 3.5.5 on region selection. Also see section 3.5.7 on changing the data set, and section 11.2 to frame the correct region on the map.

NOTE: Route options can be set to conform to your routing needs, see Chapter 10. Out-of-the-box PC*MILER default route options are:

- Region: North America
- Route Type: Practical
- Vehicle Type: Truck (48')
- Toll Roads: Allowed
- Ferries: Allowed
- Roads: Highway Only, or Highway & Streets if PC*MILER|Streets, PC*MILER|Energy, or PC*MILER|TripDirect is installed
- International Borders: Open
- Custom Roads: Ignore Avoids/Favors
- Size and Weight Restrictions: Use
- Hub Routing: Disabled
- Elevation: Any
- Estimated Time of Arrival/Departure: None
- Travel Speeds: PC*MILER default road speeds
- Governor Speed Limiting: Disabled

To generate distances and driving instructions for a route, you need to specify at least two stops – an origin and destination. An unlimited number of stops may be entered. PC*MILER will always treat the stop at the top of the stop list as the origin of the route and the last stop on the list as the destination, unless you are generating

hub distances (see section 10.3.2). As you add stops, each one will be placed below the previous stop on the list, creating the stop order from origin to destination.

To enter a stop, follow these steps:

1. Select the Routes tab > *New Route* or the **Ctrl+N** keys.

2. Make a selection in the stop type drop-down.

3. In the *City* field of the new route window, type a location using any valid format (see the list of formats below); a street address can be included in the *Address* field if PC*MILER|Streets is installed.

4. Click **Add Stop** or press the **Enter** key on your keyboard.

5. If a pick list of locations appears, highlight your choice and click **OK**.

6. If the location you entered is valid, the stop will appear above the *City* field in a stop list. For a stop to be valid, there must be a match in the PC*MILER database. If an error is returned, see section 3.5.26. To enter an arrival or departure time, see Chapter 5. To set options for a route, see Chapter 10.

You can input a city, town or location in any of these formats:

- City name, followed by a comma or space and the state abbreviation (see section 3.5.2 below). A street address may be included if PC*MILER|Streets data is installed (see section 3.5.4). Spelling help is available (section 3.5.9).
- 5-digit ZIP or postal code (section 3.5.10-11). Postal code help is available.
- 6-digit Canadian postal code (if the separate add-on data module is installed – see section 3.5.12). Postal code help is available.
- *(North America only)* SPLC (only if the data add-on is installed – see section 3.5.13 –14). "SPLC" must be selected as the stop type in the stop type drop-down. SPLC help is available.
- Point and click on the map (section 3.5.25)
- Latitude/longitude point (sections 3.5.17-18 and 3.5.25)
- Custom places (see section 3.12 and 3.15).
- *(U.S./North America only)* Border crossings, highway junctions, highway exits, truck stops, CAT scale or state weigh stations (see sections 3.5.15-3.5.22).
- *(North America only)* Point of Interest (POI). Search for POIs from within the route window, with a general search or targeting specific types of POI such as Fuel Stops or HOS Stops. (See sections 3.12-14 and 11.14.)
- *(North America only)* Energy land survey address (PC*MILER|Energy must be installed – see Chapter 14).

3.5.2 City Name and State/Country Abbreviation

Here are the steps to enter a city or town using the city/state format:

1. Select *Postal Code* in the stop type drop-down.

2. Type the city name and two-letter state/province/country abbreviation in the *City* field, then click **Add Stop** or press the **Enter** key on your keyboard.   The city and state/country do not need to be capitalized, but do need to be separated by either a comma or a space. The city name can be any length. If the city name contains two or three words, each portion of the city name must be separated by spaces.

   Examples: chicago, il
   chicago il
   paris,fr *(PC*MILER/Worldwide or DTOD Data users only)*
   los angeles, ca
   salt lake city ut
   belle croix,fr *(PC*MILER/Worldwide or DTOD Data users only)*
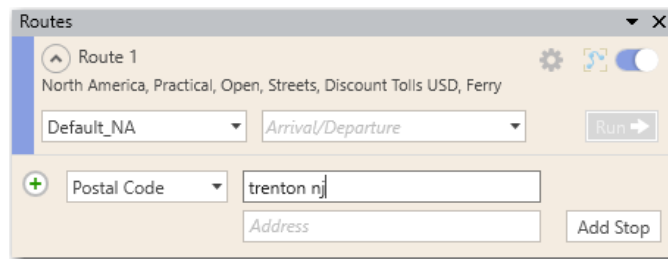
Entering Trenton, NJ as a Stop

3. PC*MILER will search through the database for a match to the location you entered. If there are multiple listings in the database for the same location, a scrollable pick list will open. Highlight your choice and click **OK**.

4. If your entry was valid, a stop list will open above the *City* field and the stop you entered will be displayed as the trip origin along with a time zone:
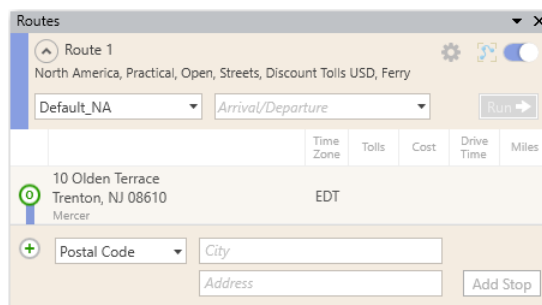
Stop List With An Origin Entered
(PC*MILER/Streets required for addresses)

Turn Off Pick List

If you want PC*MILER to pick a default match rather than open a pick list of multiple postal codes, select the File application menu > *Application Settings >* **Geocoding**. Uncheck **Provide Pick List** and click **Save**. By default "Provide Pick List" is checked and if there is more than one location for a city name, the most densely populated city will appear at the top of the pick list with an alphabetical listing of other cities below.

TIP on DATA MATCHING: For a way to confirm that your location data matches the PC*MILER database, see section 3.15.5, *Importing Custom Places.*

Spelling Help

Spelling help is available for city names – see section 3.5.9. To look up state/province/country abbreviations, see *Appendix D* in this user's guide.

Country Code Format

If PC*MILER|Worldwide or DTOD Data is installed, country abbreviations outside North America may be entered using FIPS 2-character, ISO 2-character, ISO 3-character, GENC 2-character or GENC 3-character codes. FIPS codes are accepted by default. To use another format for stop entry, select the File application menu > *Application Settings >* **Worldwide**. Choose an option from the **Country Abbreviation Format** drop-down list.

3.5.3 Entering Mexican and Canadian Locations

Mexican Locations

Mexican locations can be entered using a postal code, or a city name plus a two-letter abbreviation. See *Appendix D* in this user's guide for a list of Mexican estado abbreviations.

> **Examples:** **puerto vallarta, ja**
> **99250**

Some Mexican and U.S. locations have the same postal code assigned to them. The way PC*MILER handles Mexican versus U.S. postal codes in these cases can be set in the Application Settings dialog:

1. Select the File menu > *Application Settings >* **Geocoding**.

2. Select an option in the **Postal Code Preference** drop-down. Options are described below, but note that if **Provide Pick List** is checked above the drop-down, a pick list of Mexican and U.S. locations will always open when both are available for the entered location.

- *Use Default US Zip Codes:* The default U.S. ZIP code will be returned. Mexican codes cannot be entered.

- *Use Default Mexican Zip Codes:* The default Mexican postal code will be returned. U.S. codes cannot be entered.

- *Use Default US and Mexican Zip Codes:* The default U.S. ZIP code will be returned in cases where the postal code is assigned to both a U.S. and Mexican location. Mexican codes can be entered with a state abbreviation, for example "**50510 IA**"; or with the abbreviation "**EM**" signifying a Mexican location, for example "**50510, EM**".

Canadian Locations

Canadian postal codes can be entered only if the separate PC*MILER Canadian Postal Codes add-on data module is installed. See section 3.5.12 on entering Canadian postal codes.

If the Canadian Postal Codes module is not installed, Canadian place names can be entered using the city name and province abbreviation. See *Appendix D* in this user's guide for a complete list of Canadian province abbreviations.

Examples: **montreal, qc**
                 ottawa on

If a Canadian place name has multiple postal codes, a pick list will open only if pick lists are enabled (File menu > *Application Settings* > **Geocoding** tab) and the Canadian Postal Code data module is installed. Otherwise, the PC*MILER default choice will be entered.

NOTE: "**NL**" is recognized as Newfoundland and Labrador unless this setting has been changed to mean Nuevo Leon using the Application Settings dialog (File menu > *Application Settings* > **Geocoding**).

NOTE Also: To enter a location name that includes one or more accented letters (for example, Felipe Ángeles, CI), either 1) use the postal code, or 2) use the Insert > Symbol option in Microsoft® Word or Excel® to type the location name and then copy and paste into the route window in PC*MILER.

3.5.4 Address Entry *(PC*MILER|Streets required)*

*(Applies only in countries for which PC*MILER|Streets address data has been purchased. The correct map data set must be selected – see section 3.5.7)*

If PC*MILER|Streets is purchased and installed with PC*MILER, you can – optionally – specify a street-level address for a stop. Enter a street name by itself or with an address number in the *Address* field below the city entry.

Addresses can be added to a city/state or postal code entry. An address can also be combined with a latitude/longitude point for more precise geocoding – see section 3.6.18.

NOTE: To see an address range on the map, place your cursor over any road segment – a tooltip with the street name and address range of that segment will pop up.

If you enter an address when the **Highway Only** mode is enabled, a warning will appear above the stop list. To delete the warning, click the "X" on the far right.

To turn on local street routing:

1. In the route window select the gear button   > > *Routing Preferences* > **Roads** > **Highway & Streets**.
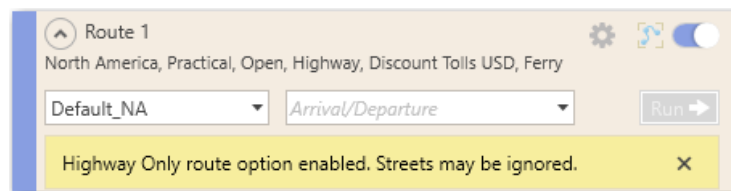
"Highway Only" Warning in a Route Window

To look up synonyms for street type abbreviations that PC*MILER will accept (for example, "Blvd" for "Boulevard"), see *Appendix E* or the **synonym.typ** file located in the PC*MILER installation folder (usually in C:\ALK Technologies\PCMILER30\Data\Info) and readable using a text editor.

In North America, address data is available for the US and Canada. With PC*MILER|Worldwide installed, address data is also available in Europe, India, and available countries in Africa, the Middle East, Oceania and South America. The correct region and map data set must be selected – see sections 3.5.5-7 below.

For PC*MILER|Worldwide Users: You may need to frame a different map region to see your routes on the map – see section 3.5.5 below.

NOTE: The pick list setting in the Application Settings dialog determines how PC*MILER handles incomplete or inaccurate street names that are entered in the route window. Select the File menu > *Application Settings* > **Geocoding** to control this setting. If **Provide Pick List** is unchecked, the first approximate match that is found in the database (if there is one) will be returned. When **Provide Pick List** is checked (this is the default setting), a pick list will open and you can choose an address from it.

TIP: If you enter a ZIP/postal code and PC*MILER can't find an address that you specify within that code, try expanding your search by entering the city name. In general it is recommended that, when entering or importing addresses, you use the corresponding city/state instead of the location's postal code. (For example, enter "457 North Harrison Street, Princeton, NJ" rather than "457 North Harrison Street, 08540".) Using the city and state/province will increase the geocoding match success rate and provide a more accurate representation of the address when routing.

3.5.5 Changing the Region *(PC*MILER|Worldwide and DTOD Data only)*

The **correct world region** must be selected when entering stops. The current region is displayed at the top of each route entry window.

To set the default region for all trips:

1. Select the File menu > *Application Settings* > **General.**

2**.** **C**hoose a region from the **Default Region** drop-down.

3. Click **Save**.

To change the region for the currently active route window only:

1. Select a region from the drop-down on the Routes toolbar.
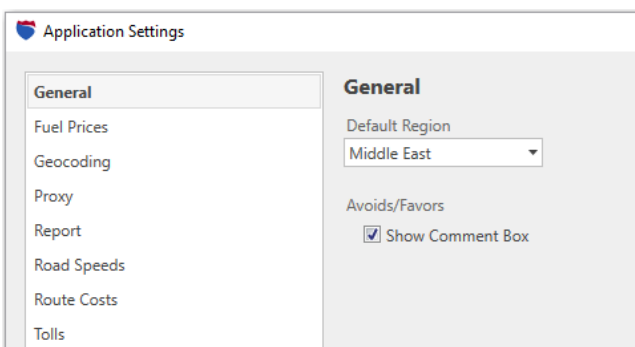
Changing the Default Region
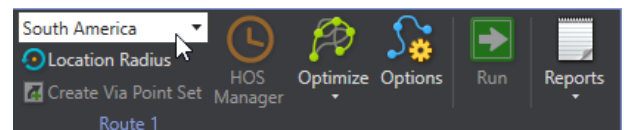
Changing the Region for the Current Trip

If the wrong region is selected (i.e. it does not match the stop you are attempting to enter), normally either an error message will appear or your input will be matched with a city by the same name in the selected region; for example, if you enter "Paris, FR" when your region is North America, "Paris, AR" will be returned as a stop.

However, PC*MILER generates some trans-regional routing and in certain cases the above rule does not apply. Because routing between Europe, Asia, Africa, and

the Middle East is possible, locations may be entered that do not match the selected region when any of these regions are selected. For example, entering "Paris, FR" will return the correct stop if Asia or Africa is the selected region.

You may also need to change the map window to the desired region if you wish to see graphic displays of the routes you run:

1.   Select the Map tab > *Frame > Regions.*

2. *C*hoose a region.

3.5.6 Changing the Country Code Format *(PC*MILER/Worldwide and DTOD Data only)*

Worldwide country abbreviations may be entered using either FIPS 2-character, ISO 2-character, ISO 3-character, GENC 2-character or GENC 3-character codes. FIPS codes are accepted by default. To use another format for stop entry:

1. Click the File application menu > *Application Settings* > Worldwide.

2. Choose an option from the Country Abbreviation Format drop-down. For a complete list of worldwide country abbreviations, see *Appendix D.*

3.5.7 Changing the Data Set
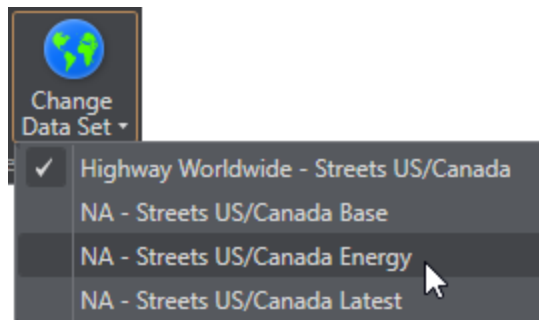
Change Data Set Menu with PC*MILER/Worldwide Installed

To change the version of the map data that PC*MILER uses to calculate routes:

1. Select the Map tab > *Change Data Set.*

2. Make a selection from the available options. Options will vary depending on which data sets are installed.

3. The currently loaded data set will be displayed in the title bar of the map window, shown at the bottom of each page in any generated reports in Print View, and selected with a checkmark in the *Change Data Set* menu.

For ALK's Annual Update Program (AUP) Licensed Users: For PC*MILER (North America only), the options in the drop-down will include the base version data set plus any mid-year versions that have been released since the base version, including PC*MILER|Streets U.S. and Canadian street-level data if installed.

For PC*MILER|Worldwide Users: PC*MILER|Streets data modules are available for local street addresses in Canada, the United States, Europe, and some countries in Africa, Asia, Middle East, Oceania and South America. Each module may be purchased separately or in combination with other data sets. The correct data set must be selected before you enter an address. When you activate a data set, the correct region will automatically be active in Application Settings.

Note that Streets data sets in world regions outside North America may not include coverage for every country in the region. Therefore, when such a data set is selected, routes can't be run within or across countries not included in the Streets data set. The Worldwide Highway data set must be used to run routes to/from countries that are not covered in the Streets data set. For more on worldwide data coverage, see *Appendix J.*

For PC*MILER|Energy Users: You will see the NA – Streets Canada Energy data set in the *Change Data Set* menu.

3.5.8 About the Stop Entry Pick List

By default, when you enter a stop that has multiple listings in the database, a pick list of matching locations will open. The order in which locations are listed in the pick list is based on such factors as population and geographic centrality. The most densely populated cities that match your entry will be at the top of the pick list.

To have PC*MILER pick a default postal code or address rather than open a pick list of multiple database entries:

1. Select the File menu > *Application Settings* > **Geocoding.**

2. Uncheck **Provide Pick List**.

3. Click **Save**.

3.5.9 Spelling Help

If you're not sure how to spell a city name, or if you received an error message when entering a city and state abbreviation, try getting spelling help as follows:

1. In the *City* field of a route window, type the first letter or first few letters of the city name followed by a comma or space and the two-letter state/province/estado abbreviation. Note that typing more letters of the city name (i.e. two or three rather than just one) will decrease the processing time needed to create a list of matches.

   Examples: **chi,il   los ang, ca   los a,ca   p fr** *(PC*MILER|Worldwide only)*

2. Click **Add Stop** or press **Enter**.

3. A pick list of possible matches will open unless this option is turned off in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). Scroll the list if necessary and highlight the city or ZIP/Postal code that you wish to select, then click **OK**.

```
47 Matches to [pi nj]
Pine Beach, NJ, Ocean 08741
Pine Beach, NJ, Ocean
Pine Hill, NJ, Camden 08021
Pine Hill, NJ, Camden
Pitman, NJ, Gloucester 08071
Pitman, NJ, Gloucester
Pine Valley, NJ, Camden 08021
Pine Valley, NJ, Camden
Picatinny, NJ, Morris
Picatinny ARS, NJ, Morris 07806
Picatinny Arsenal, NJ, Morris 07806
Pierce Heights, NJ, Hunterdon
Pierces, NJ, Cape May
Pierces Point, NJ, Cape May
                              OK    Cancel
```

Matches to "pi nj" for Spelling Help

3.5.10 Entering ZIP/Postal Codes

To enter a postal code:

1. Select *Postal Code* in the stop type drop-down.

2. Enter a valid postal code in the *City* field.

Entering any valid postal code creates a search for the corresponding city. The city name will be entered as a stop, along with the postal code, state/country

abbreviation, and county/province if it exists in the database. If you enter **08540** *(NA region)*, PC*MILER will return: **08540 Princeton, NJ, Mercer**.

IMPORTANT for PC*MILER|Worldwide and DTOD USERS: When you enter postal codes outside North America, you need to enter a country abbreviation to avoid being routed to the wrong country in cases where the same postal code exists in more than one country.

Enter the postal code, a comma, and the correct two-letter country abbreviation; e.g. "**46001, sp**" for Valencia, Spain. Remember that the **correct region** must be selected in Application Settings (see section 10.1.1). Not all countries have postal codes in the database. Users can import absent postal codes as custom places if needed. For the format of postal codes in PC*MILER|Worldwide regions and various countries in those regions, see *Appendix I*.

NOTE: If the +4 ZIP code designation is entered, PC*MILER will ignore it.

3.5.11 ZIP/Postal Code Help

If you're unsure of a particular postal code or if you receive an error message when entering a postal code, do the following:

1. In the *City* field of a route window, type at least the first two digits of the postal code. For postal codes outside North America, enter a country code as well. Examples: **60** or **606 fr** *(France – PC*MILER|Worldwide required)*.

2. Click **Add Stop** or press **Enter** to bring up a pick list of matches.

712 Matches to [60]

Alden, IL, McHenry 60001
Antioch, IL, Lake 60002
Old Mill Creek, IL, Lake 60002
Old Mill Crk, IL, Lake 60002
Arlington Heights, IL, Cook 60004
Arlington Hts, IL, Cook 60004
Arlington Heights, IL, Cook 60005
Arlington Hts, IL, Cook 60005
Elk Grove Village, IL, Cook 60007
Elk Grove Vlg, IL, Cook 60007
Rolling Meadows, IL, Cook 60008
Rolling Mdws, IL, Cook 60008
Barrington, IL, Lake 60010
Deer Park, IL, Lake 60010

OK   Cancel

Pick List of Matches for "60" – North America Region

3. Scroll the list if necessary and highlight your selection.

4. Click **OK**. Note that the pick list won't appear if this option is turned off (go to File menu > *Application Settings* > **Geocoding).**

3.5.12 Canadian Postal Codes

(The PC*MILER Canadian Postal Code data add-on module is required.) Six-digit Canadian postal codes can be entered as stops. The codes are always alphanumeric in the format "**ANA NAN**" where "A" represents an alphabetic character and "N" represents a numeric character. Entering any valid Canadian postal code will invoke a search for the corresponding city and province name, and these will be entered as a stop along with the postal code.

> **Example:**   If you enter: **K7L 4E7**
>   PC*MILER will return: **K7L 4E7 Kingston, ON**

For help with Canadian postal codes, you need to enter at least 3 digits.
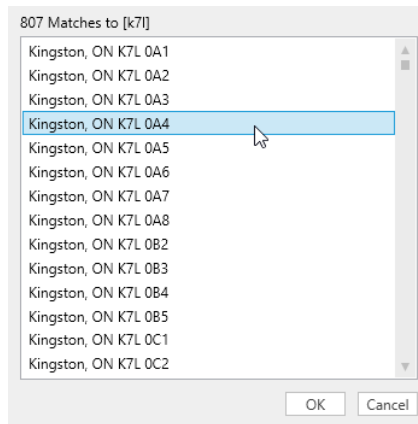
Canadian Postal Code Help

3.5.13 SPLC Entry *(North America only)*

If the SPLC add-on data module is installed, a SPLC can be entered as a stop for any location in North America that has a SPLC assigned to it. SPLCs may be six or nine digits in length. SPLC data used in PC*MILER products is owned, maintained and copyrighted by the National Motor Freight Traffic Association, Inc.

To enter a SPLC:

1. Select *"SPLC"* from the drop-down list to the left of the *City* field.

2. Type your entry and click **Add Stop** or press **Enter**.

> **NOTE:** If you enter a SPLC when *"SPLC"* has not been selected in the drop-down list, you'll get an error message. **When *"SPLC"* is selected, you won't be able to enter other types of locations.**

3.5.14 SPLC Help

If you need help finding the correct SPLC for a particular location, a pick list of SPLC can be invoked:

1. First **make sure that "SPLC" is selected in the drop-down** to the left of the *City* field.

2. Type at least the first two digits of the SPLC.

3. Click **Add Stop**.

A pick list will be generated unless this option is disabled in Application Settings (File menu > *Application Settings* > **Geocoding**).
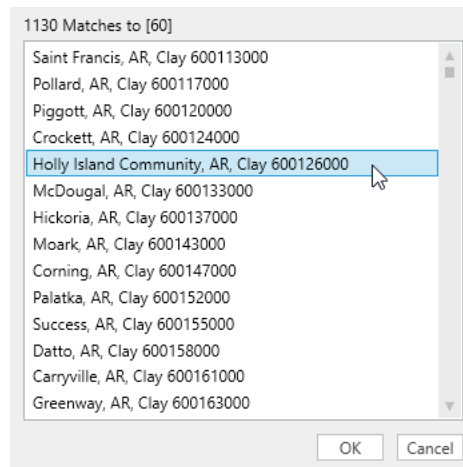
SPLC Help

3.5.15 Border Crossings *(U.S. only)*

U.S. state border crossings can be entered as stops on a route using the PC*MILER border crossing naming convention. Border crossings have the following syntax:

!XXYY Name, XX

where **XX** is the two-letter abbreviation of the state that is first in alphabetical order, **YY** is the abbreviation of the state that is second in alphabetical order, and **Name** is the route name of the route that crosses the border.

In cases where the road name is different on either side of the border, the road name used is the one that lies within the state first in alphabetical order.

To quickly locate all possible border crossings between two states, use the [*] wildcard character.

>   **Example:** For Pennsylvania/New Jersey border crossings, enter: **!njpa*, nj**

26 Matches to [!njpa*, nj]

NJPA Calhoun Street Bridge, Trenton, NJ, Mercer 08618
NJPA Delaware Road, Phillipsburg, NJ, Warren 08865
NJPA I276, Burlington, NJ, Burlington 08016
NJPA I676, Camden, NJ, Camden 08102
NJPA I76, Gloucester City, NJ, Camden 08030
NJPA I78, Phillipsburg, NJ, Warren 08865
NJPA I80, Columbia, NJ, Warren 07832
NJPA I95, Trenton, NJ, Mercer 08628
NJPA Lower Free Bridge, Trenton, NJ, Mercer 08611
NJPA NJ12, Frenchtown, NJ, Hunterdon 08825
NJPA NJ179, Lambertville, NJ, Hunterdon 08530
NJPA NJ413, Burlington, NJ, Burlington 08016
NJPA NJ73, Palmyra, NJ, Burlington 08065
NJPA NJ90, Pennsauken, NJ, Camden 08110

OK   Cancel

Pick List of NJ/PA Border Crossings

NOTE: A pick list will only be generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this setting is turned on.

3.5.16 Highway Junctions *(North America only)*

PC*MILER allows you to access highway junctions between major road types in the United States, Canada, and Mexico. (Note, however, that there are some highway junctions which are truck-inaccessible. These junctions won't be recognized as stops.)

The format for junction names is: the first route name is the lower numbered one, the second route name is the higher numbered one, and the route names are followed by the abbreviation of the state in which the junction is located.

> **Example:** **+I 469 IN 37, IN**

In cases where two junctions by the same highway pair occur within the same state, the junctions are designated by a location direction (N, S, E, W) relative to the location of the other junction.

> **Example:** **+US231 IN 66W, IN** is one mile west of **+US231 IN 66E, IN**

The best way to enter a highway junction is to invoke a pick list of matches. Type a plus sign (**+**) followed by a comma and the state abbreviation.

> **Example:** For highway junctions in Indiana, enter: **+, in**
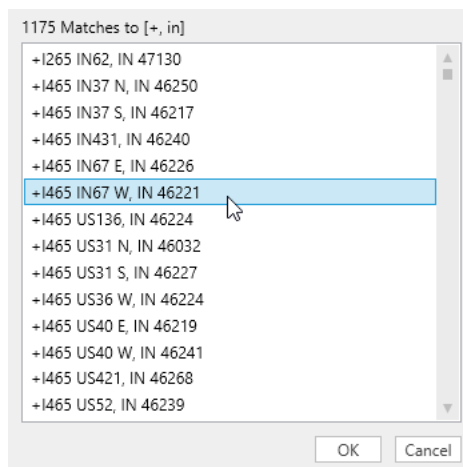
Pick List of Highway Junctions in Indiana

> **NOTE:** A pick list will only be generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this setting is turned on.

3.5.17 Latitude/Longitude Points

There are several ways to enter latitude/longitude points as stops on a route in PC*MILER.

Copy and Paste a Lat/Long From the Map:

1. Pass your cursor over the map, you'll see its lat/long position tracked in the status bar in the lower left corner of the map window.

   TIP: It's easier to copy lat/longs accurately at higher zoom levels.

2. With the lat/long you want to enter displayed in the status bar, right click the map and choose *Copy Latitude/Longitude* from the menu.

3. Click in a route window's *City* field and paste (**Ctrl-V** or *Paste* in the right mouse menu).
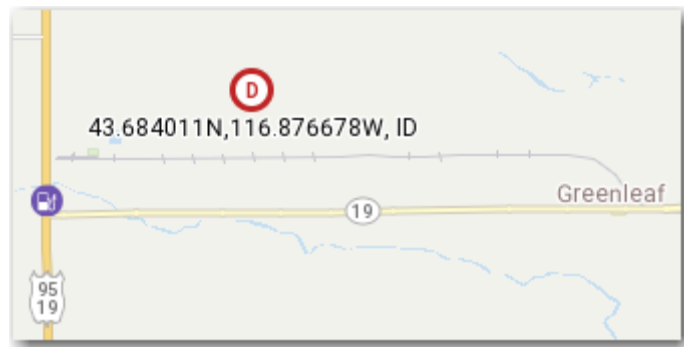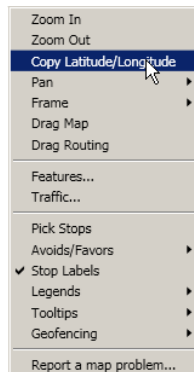
Right Mouse Map Menu *Lat/Long Point as a Destination on the Map*

Pick a Lat/Long From the Map:

1. Select the Routes tab > *Pick Stop on Map* button, OR right click the map and select *Pick Stop.*

2. Click on the point you want to enter.

   TIP: It's easier to pick a lat/long accurately at higher zoom levels.

Enter a Lat/Long Directly in the Route Window:

You can enter a lat/long directly in the *City* field in a route entry window, using a **degrees minutes seconds direction** format (e.g. **0401750N,0742131W**) or **decimal degrees** (e.g. **40.123N,100.333W**) as shown below.

Degrees-Minutes-Seconds Format:

In degrees-minutes-seconds format the latitude and longitude are each 8-character strings in the following format:

Characters **1-3**   specify the degrees (be sure to include leading zero if required)
Characters **4-5**   specify the minutes
Characters **6-7**   specify the seconds
Character   **8**   **N**, **n**, **W**, or **w**, with N's for latitude and W's for longitude

Latitude and longitude must be separated by a comma, with or without a space.

Example: dddmmssN,dddmmssW

Decimal Degrees Format:

In decimal degrees format, latitude and longitude are strings of up to 8 characters representing a decimal number with up to 3 decimal places. No leading zeros are required. The decimal point counts as one of the characters. Latitude and longitude must be separated by a comma, with or without a space.

Example: dddd.dddN,dddd.dddW

Converting Between Formats:

To convert from degrees-minutes-seconds to decimal degrees use the following formula: **dddmmssN** $\rightarrow$ **ddd** + **mm/60** + **ss/3600**.

Import Lists of Lat/Longs:

See section 3.16.5.

3.5.18 Latitude/Longitude With Street Address

(PC*MILER/Streets must be licensed and installed.) For more precise geocoding and directions, latitude/longitude points can be combined with street addresses as in the image shown below. This functionality geocodes the lat/long to the nearest point on the particular street in the address, rather than simply to the nearest street, as would be the case for a lat/long by itself. If the lat/long is more than .5 miles from the street in the address, an error message will be returned.

The minimum input when using this combination should include the lat/long plus a street name. Including an address will provide more precise geocoding.

NOTE: The **Highway & Streets** route option must be turned on in the Route Options dialog or the current route profile. This option is selected by default with PC*MILER|Streets, PC*MILER|Energy or PC*MILER|TripDirect installed.
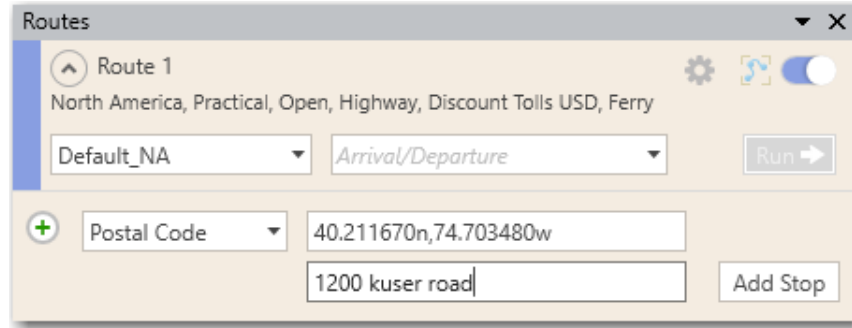
Stop Entry Using a Latitude/Longitude with an Address

3.5.19 Truck Stops *(U.S. and Canada only)*

Truck stops can be entered as stops on a route like other places in the PC*MILER database. The syntax for a truck stop starts with an "at" symbol [@], then the truck stop name, and the state or province in which the truck stop is located.

To generate a pick list of truck stops in a particular state, use the [@] symbol, a comma or space, and the state/province abbreviation.

Example: For truck stops in Georgia, enter: **@, ga**

To speed up a search for a known truck stop, use the first letter of the name.

Example: For truck stops in Georgia beginning with "C", enter: **@c, ga**
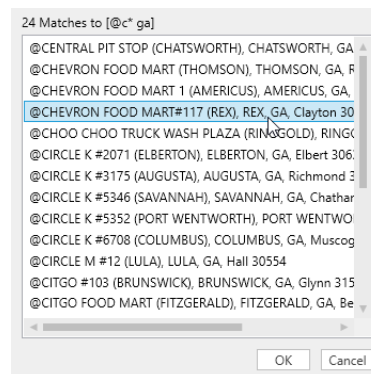
Pick List of Truck Stops in Georgia

NOTE: To search for fuel stops and prices at major diesel fuel providers, see section 3.13. To search for truck stops within a radius or along a route using the POI search tool in a route window, see section 3.12. A pick list will only be

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generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this option is turned on.

3.5.20 Highway Exits *(U.S. only)*

Interstate-to-Interstate exit numbers can be entered as stops, including Interstate exits leading to non-Interstate highways.

To generate a pick list of highway exits in a particular state, enter "**^**" (**Shift-6**) followed by a comma and state abbreviation.

> **Example:** To list exits in New Jersey, enter: **^, nj**

You can also enter an exit directly. For example, you could type "^I 80 E x273, pa" to enter Exit 273 off Interstate 80 East in Pennsylvania. No spaces are necessary, but the east/west designation must be included.

> **Examples:** **^I-90 w x35, ny   ^I 90w x35, ny   ^I-90wx35, ny**

TIP: You can search for highway exits within a radius or along a route using the POI search tool in a route window – see section 3.12.

NOTE: A pick list will only be generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this setting is turned on.

940 Matches to [^, nj]
^Alfred E. Driscoll Bridge N X127, NJ
^Alfred E. Driscoll Bridge S X127, NJ
^Atlantic City Expressway X12, NJ
^Atlantic City Expressway X17, NJ
^Atlantic City Expressway X28, NJ
^Atlantic City Expressway X33, NJ
^Atlantic City Expressway X38, NJ
^Atlantic City Expressway X41, NJ
^Atlantic City Expressway AC Airport, NJ
^Atlantic City Expressway E X1, NJ
^Atlantic City Expressway E X12, NJ
^Atlantic City Expressway E X14, NJ
^Atlantic City Expressway E X17, NJ
^Atlantic City Expressway E X2, NJ

OK   Cancel
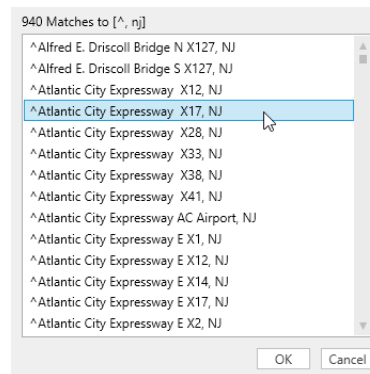
Pick List of Highway Exits in New Jersey

3.5.21 CAT Scale Weigh Stations *(U.S. and Canada only)*

CAT Scale weigh station locations may be entered as stops on a route. To bring up a pick list of all CAT weigh stations in a particular state, enter a pound sign followed by a comma and the state abbreviation.

Example: **#, nj**

13 Matches to [#, nj]

#CAT Scale # 1226 Pilot Travel Center, Clinton, NJ, Hunterdon
#CAT Scale # 1379 Penn-Jersey Truck Stop, Phillipsburg, NJ, V
#CAT Scale # 1478 Flying J Travel Plaza, Carney's Point, NJ, Sa
#CAT Scale # 19 Pilot Travel Centers, Carney's Point, NJ, Saler
#CAT Scale # 243 TA Columbia, Columbia, NJ, Warren 07832
#CAT Scale # 25 Love's Country Store, Bordentown, NJ, Burlin
#CAT Scale # 250 Pilot Travel Center, Mahwah, NJ, Bergen 07
#CAT Scale # 308 Tullo Truck Stop, South Kearny, NJ, Hudson
#CAT Scale # 46 Pilot Travel Center, Bloomsbury, NJ, Hunterd
#CAT Scale # 490 Sunoco Truck Stop, Carney's Point, NJ, Sale
#CAT Scale # 614 TA Bloomsbury, Bloomsbury, NJ, Hunterdo
#CAT Scale # 778 TA Paulsboro, Paulsboro, NJ, Gloucester 08
#CAT Scale # 835 Petro Stopping Center, Bordentown, NJ, Bu

Pick List of CAT Weigh Stations in New Jersey

To find CAT weigh stations within a specified radius of a location or along a route, use the POI search tool (see section 3.12). CAT Scale weigh stations are represented on the map by a cat icon.

NOTE: A pick list will only be generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this setting is turned on.

3.5.22 State Weigh Stations *(U.S. only)*

State weigh stations can be entered as stops on a route. To bring up a pick list of weight stations in a particular state, enter a dollar sign (**$**) followed by a comma and the state abbreviation.

Example: **$, id**

You can search for state weigh stations within a radius or along a route using the POI search tool in a route window – see section 3.12.

NOTE: A pick list will only be generated if **Provide Pick List** is enabled in the Application Settings dialog (File menu > *Application Settings* > **Geocoding**). By default, this setting is turned on.
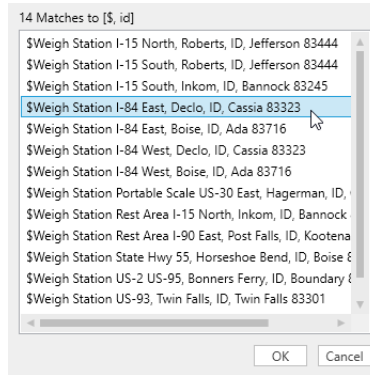
Pick List of State Weigh Stations in Idaho

3.5.23 Energy Land Survey Addresses

Please see Chapter 14, *Using PC*MILER/Energy.*

3.5.24 Custom Places

Please see section 3.15.

3.5.25 Entering An Arrival or Departure Time

Please see Chapter 5, *Using ETA/ETD and Traffic Data.*

3.5.26 Loaded/Empty Stop Designation

To designate a stop as arriving empty or loaded:

1. In the route window, right click a stop on the stop list.

2. Uncheck **Loaded**. Select this option again to toggle it back on.
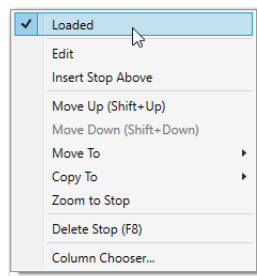
Right Mouse Menu Off a Stop

3.5.27 Picking Stops From the Map   🖐

> **TIP:** Pass your cursor over the map and notice how its lat/long position is automatically tracked in the status bar (lower left corner of the map window).

Stops can be entered directly from the PC*MILER map window by pointing and clicking with the mouse. If the selected point is on a road, the place name will be entered; otherwise, a latitude/longitude position will be entered.

To pick a stop, follow the steps below. It's easier to grab the location you want at closer zoom levels.

1. Select the Routes tab > *Pick Stop on Map* button under *Stops*; or select *Pick Stops* from the right mouse menu off the map.

2. In the map window, the cursor will now be in the shape of a hand. Click on the target location to add it as a stop in the active route window.

3. Alternatively, in the map window's right mouse menu select *Copy Latitude/Longitude* to copy the lat/long displayed in the status bar below, then paste into the *City* field of a route window (**Ctrl-V** or right click > *Paste*).

> **NOTE:** There are some highway junctions which are truck-inaccessible. These junctions won't be recognized if you try to enter them as stops.

3.5.28 Input Errors

One of several error messages might be returned when entering stops. The most common one is "No matching city found". If you encounter an error message, you should try the following:

*   Check that you separated the city name and state abbreviation with a comma or space, and check for typos and spelling errors.
*   Make sure that the stop type to the left of the *City* field matches your input. If entering a SPLC, make sure that "*SPLC*" is selected.
*   Get spelling help (see section 3.5.9).
*   Use the exact postal code or get ZIP/postal code help (see section 3.5.11).
*   See *Appendix D* for a list of valid state/province/estado abbreviations.

In all cases, the ZIP/postal code takes precedence over the city and state/province/estado name. Certain suburbs or small towns may not have their actual names in the database, but rather the name of the larger nearby city. In these cases, the ZIP or postal code for the smaller community will have to be entered to achieve correct results.

3.5.29 Duplicate City Names and County Designations

In the PC*MILER database, there are several thousand instances of towns in the same state, province or estado that share the same name. For example, in the U.S. state of Pennsylvania, there are two towns named Hamlin: one in Wayne County and one in Lebanon County. Another example is the towns of Londonderry in the United Kingdom: one is in Londonderry and one is in North Yorkshire.

In certain circumstances, duplicates can be separately identified by means of their differing postal codes. However, some duplicate towns do not have postal codes assigned to them. You can identify your desired stop by the county listing in the town name. In the database, the county name follows the state abbreviation (e.g. **Hamlin, PA, Wayne**). It appears in the route window after a stop has been entered, in small letters after the city name and state abbreviation.

If you are not sure which city is the stop you want, first go to File menu > *Application Settings* > **Geocoding** and make sure that **Provide Pick List** is checked. Then enter the city name and state/province/estado abbreviation. When you click **Add Stop**, a pick list will provide the possible choices in the database along with county names. The order in which locations are listed in the pick list is based on such factors as population and geographic centrality. The most densely populated cities that match your entry will be at the top of the pick list. Select the correct city from the pick list and click **OK** to enter it as a stop.

If you know the county in which the duplicate city is located, you can enter that exact city in the stop entry field. Do so by entering the city and state, followed by a comma and the county name as in any of these examples:

<div style="text-align:center">

hamlin, pa, wayne   **hamlin,pa, wayne**
hamlin, pa,wayne   **hamlin,pa,wayne**

</div>

> **TIP:** Another way to see the county name: zoom to the town on the map and place your cursor over it without clicking – the full name of the town, with its county, will appear in a tooltip.

In Canada, duplicate city names are found in the same provinces. PC*MILER identifies the town by assigning a county to it in the same way that the county name follows a U.S. city name. For a list of Canadian counties in the PC*MILER database, see *Appendix C*.

3.5.30 Editing the Stop List

All options related to editing the stop list are found in the Routes tab under *Stops*. Several editing options are also available in a right mouse menu off any stop name on the stop list in a route window.

Here are the editing options in the Routes tab, with the right mouse menu option noted where available:

Editing Option	Button/Shortcut	Option Description
Add Stop at End		Type a location in the location entry fields and click this button to add the stop at the end of the stop list.
Insert Stop Above	**F7**	Click to insert a stop above the highlighted stop; or **right mouse click** on the highlighted stop and choose *Insert Stop Above* from the menu.
Edit Stop		Click to edit the highlighted stop, or **right mouse click** on the highlighted stop name and choose *Edit* from the menu. When done editing, click **Add Stop** to add the edited stop back to the same position on the list.
Delete Stop	**F8**	Click to delete the highlighted stop; or **right mouse click** the stop name and choose *Remove* from the menu.
Delete All Stops	**Alt+F8**	Click to delete all stops from the currently active route window.
Frame Stop on Map		Click to frame the highlighted stop on the map; or **right mouse click** on the stop name and choose *Zoom to Stop* from the menu.
Pick Stop on Map		Click to activate this option. Then pick a stop from the map: in the map window zoom in to the target location, point the cursor to a town, address, intersection, or lat/long on the map, then click to add this place as a stop.
Move Stop Up	**Shift+↑**	Move the highlighted stop up on the list, or **right mouse click** on the stop name and choose *Move Up*.
Move Stop Down	**Shift+↓**	Move the highlighted stop down on the list, or **right mouse click** on the stop name and choose *Move Down*.
Reverse Stops		Click to reverse the order of stops in the currently active route window.

3.5.31 Moving and Copying Stops

Stops on the stop list can be copied or moved from one route window to another, or moved to a different position in the same window.

To copy a stop to another route window:

1. Left click the stop name while holding down the **Ctrl** key.
2. Drag the stop onto the stop list in the target window.
3. Let go when the stop is in the desired position on the list.

or

1. Right click the stop name.
2. Select **Copy To >** and select a route window.
3. The stop will be copied to the end of the stop list in the target window.

To move a stop to another route window:

1. Left click the stop and drag it to a different route window.

or

1. Right click the stop name.
2. Select **Move To >** and select a route window.
3. The stop will be moved to the end of the stop list in the target window

To move a stop to a new position in the same window:

1. Left click the stop and drag it to a different position on the stop list.

or

1. Right click the stop name.
2. Select **Move Up** or **Move Down**.
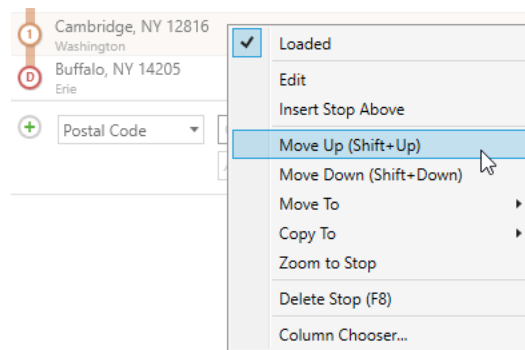
Right Mouse Menu Off a Stop

3.5.32 Zoom To a Stop On the Map

There are three ways to zoom to a stop entered in a route window:

1. Double-click the stop name;

2. Right mouse click on the stop name and select *Zoom to Stop;* or

3. Click the stop name then click the *Frame Stop on Map* button in the Routes toolbar under *Stops*.

NOTE: If PC*MILER|Streets data is installed and you're trying to find an address, you can place your cursor, without clicking, on any road segment on the map to see a tooltip containing the street name and address range of that segment.

3.5.33 Reversing the Order of Stops

To reverse the order of all stops on the stop list, select the *Reverse Stops* button in the Routes toolbar under *Stops*.

This option can be useful in combination with the route optimization feature (see section 3.10 below). For example, you might need to make multiple pickups and you want to start at the farthest one on the route and end up at some other location for delivery. Enter the delivery location first, then enter your pickup points. Next, optimize your route keeping the first and last stops the same. After optimizing, reverse the order of stops. This will put your farthest pickup point first on the list, and your delivery point last, with an efficient route in between.

3.6 Running a Route

Mileage, Time and Cost Calculations for a Generated Route

For a route to be generated, there must be a valid origin and at least one valid destination entered in the active route window. To generate a route, you can:

- click **Run** in the active route window;
- press the **F10** key; or
- select the Routes tab > *Run*.

Active routing options are listed at the top of the route window, under the route name. See Chapter 10 to change routing options.

PC*MILER off-the-shelf route option defaults are:

- **For North America:** Practical, Borders Open, Highway Only*, Use Ferry Distances, Tolls Discount - US$**

  * Defaults to Streets if PC*MILER/Streets, PC*MILER/Energy and/or TripDirect is installed
  ** With PC*MILER/Tolls installed

- **For All Other Regions:** *(PC*MILER/Worldwide and DTOD only)*
  Practical, Borders Open, Highway Only*, Use Ferry Distances
  * Except if PC*MILER/Streets is installed for the active region

When processing is finished, the route will be drawn and framed on the PC*MILER map, and mileage, cost, and time estimates by trip leg will appear to the right of each stop on the list. If an arrival or departure time was entered, the ETA at each stop will also be shown. From left to right, the columns are:

- **Time Zone** – Displays the time zone for each stop. See section 5.1 on how time zones are set and reported.

- **Tolls** – *(PC*MILER/Tolls required)* At each stop, shows toll costs for the trip leg from the previous stop, with the total toll cost for the trip at the bottom.

- **Cost** – At each stop, shows the estimated cost of the trip leg from the previous stop, including tolls if PC*MILER|Tolls is installed. Trip costs are calculated by multiplying PC*MILER's default cost per mile by the number of miles. The cost per mile settings can be customized in the Application Settings – see section 10.1 and 10.1.7.

- **Stop Duration** – *(PC*MILER/Tolls required)* This column is populated if a stop duration was entered in the HOS Manager.

- **Drive Time** – At each stop, shows the estimated driving time for the trip leg from the previous stop. Cumulative driving time is shown in the bottom row.

- **Miles** – At each stop, shows the distance for the trip leg from the previous stop. Cumulative distances for the trip are shown in the bottom row.

- **ETA/ETD** – If an arrival or departure time was entered, this column shows the departure time at the origin (this time is an estimate if an arrival time was entered) and estimated arrival time(s) at each stop.

3.6.1 Resizing a Route Window

If the columns are crowded after running a route, try adjusting the column order or eliminating columns using the Column Chooser (see section 3.6.3).

You can also float the window and then resize it. Click the gear button and select *Float*. Select *Dock* to return the window to its default position.
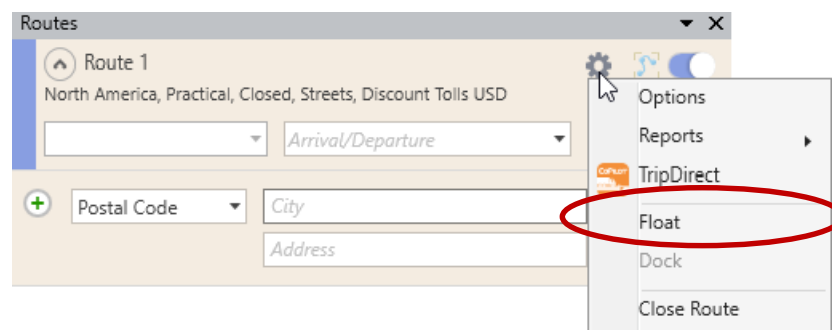
3.6.2 Warnings in Route Windows

When PC*MILER generates any type of warning regarding a routing issue, the circle that represents the stop related to the warning will turn solid red. Place the cursor over the red circle without clicking to see a tool tip that briefly describes the reason for the warning. Generate a Detailed or Driver's Report to see more details.
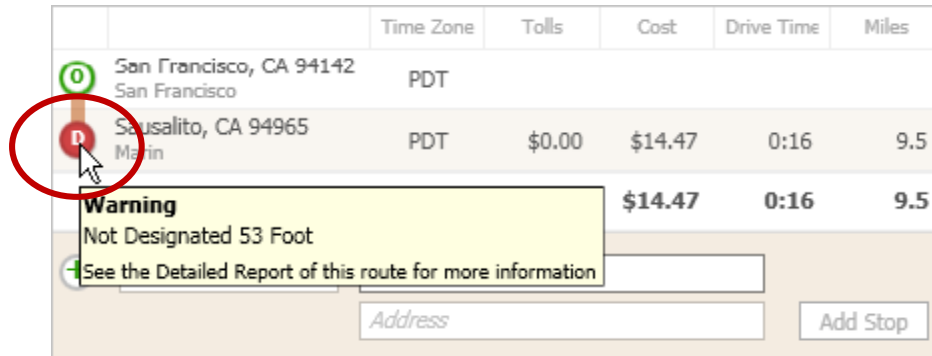
Warning Indicator with Tooltip in the Route Window

3.6.3 Column Chooser

The columns in any route window can be hidden and the column order can be changed using the Column Chooser. To access this feature, right click any stop on the stop list in a route window, then select *Column Chooser…* in the right mouse menu.

In the Column Chooser dialog, all available columns are listed and displayed columns are checked. (Note that the **ETA/ETD** column only displays if an arrival or departure time has been entered for a route.) Uncheck any column to hide it.
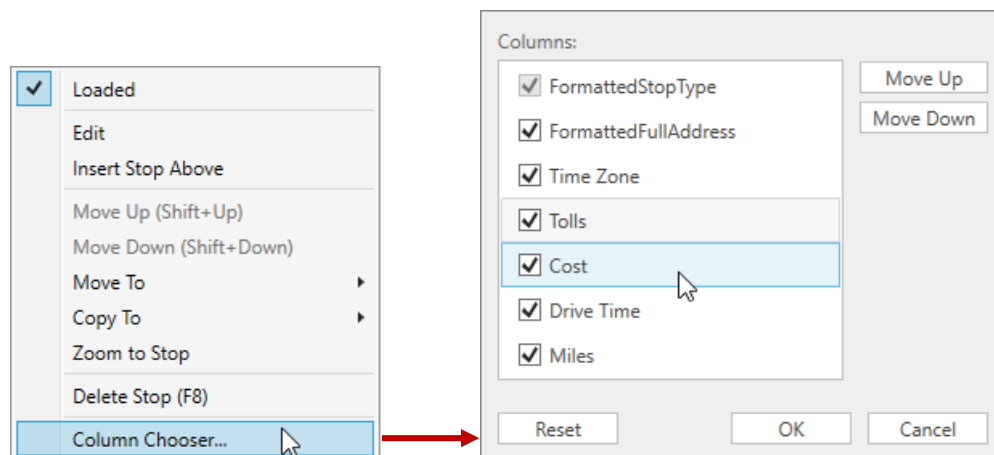
Right Mouse Menu Off a Stop

Column Chooser Dialog

To change the column order, click on a column name and then click **Move Up** or **Move Down**. As the column name moves up the list, it will be moved to the left in the route window, and vice versa. Click **Reset** to restore the default column order.

NOTE: The Column Chooser is also available in reports – right click any column header to access it.

3.6.4 Route Framing on the Map

- To automatically frame each route after it is run, select the Map tab > *Frame > Auto Frame Routes* (this option is turned on by default).

- To frame one route, select the Routes tab > *Frame* or the Map tab > *Frame One Route >* and select a route.

- To frame all generated routes, select the Map tab > *Frame > All Routes*.

3.6.5 Copy and Paste the Mileage Report

After a route is generated, the results in the route window can be copied and pasted into a text editor such as Microsoft Word. With your cursor inside the route window, press **Ctrl + C**. Then open the text editor and press **Ctrl + V**. The example below is in a WordPad file. The widths of the data columns have been adjusted by changing the position of the tabs in those paragraphs.

Route 1 : 08540 Princeton, NJ to 90021 Los Angeles, CA : No Stops

Miles: 2,753.4 Time: 42:37 Cost: $3,686.59

Truck Config: Weight: 80,000lbs Height: 13ft 6in Length: 48ft 0in Width: 96in Axles: 5

North America, Practical, Borders Open, Highway Only, Ferry Distance, Discount Tolls USD

		Time Zone	Tolls	Cost	Time	Miles	ETA/ETD
O	Princeton, NJ 08540	EDT					Dep 5/10 7:00 AM (EDT)
D	Los Angeles, CA 90021	PDT	$151.43	$3,686.59	42:37	2,753.4	Arr 5/13 1:00 PM (PDT)
T			$151.43	$3,686.59	42:37	2,753.4	

Mileage, Time and Cost Data Pasted Into WordPad

3.7 Working with Multiple Routes and Windows

You may want to route through different locations while keeping the routes you already generated open. Up to eight route windows can be open simultaneously.

The active route window will be highlighted. When there are hidden or partially hidden routes open, a scroll bar will appear on the right side of the Routes pane.

Each open route will be drawn in a different color in the map window. Routes are identified by name and color in the Route Legend, and their corresponding route color appears on the left side of each individual route window. (If the Route legend is not visible, select the Map tab > *Legends* > *Route.*)

To adjust the layout of windows and reports, use the Windows toolbar on the Ribbon.

3.8 Duplicating a Route for Easy Comparison

To duplicate a route either before or after it is run, select the Routes tab > *Duplicate*. This option makes it easy to compare different route types for the same route.

3.9 Saving and Retrieving Trips

Routes generated in PC*MILER can be saved for later retrieval, either before or after they are generated. To save a route:

1. Select the Routes tab > *Save* > *Save Route As.*

2. In the standard Windows® Save Route dialog, choose the folder where you want your route file to be placed, and assign a file name and type to the file. There is no limit to the length of a file name.

3. Click **Save**.

The route type "**.r21**" will be selected by default. When you save a file with the .r21 extension, route options will be saved together with the route, but **saved route files do not retain mileage, cost and time information**. You will need to rerun the route to see this information.

NOTE: When saved route files from previous PC*MILER versions are opened as trips, they are automatically converted to the current version.

IMPORTANT: The *file name* you assign when saving a route is different from the *route name*. To give the route a unique *route name*, click the gear button > *Options* or Routes tab > *Options* and make an entry in the **Route Name** field at the

top of the dialog, then click **Save**. A route not named in this way will open with the default name ("Route 1", "Route 2", etc.), which will also be displayed in the Route legend on the map and in reports.
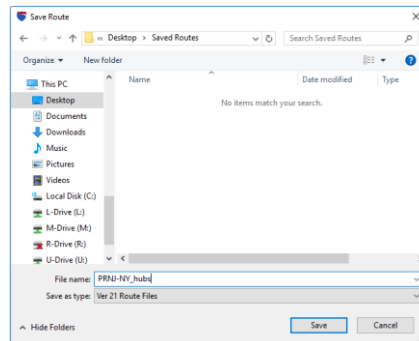
Save Route Dialog

To save sets of points in text format for batch processing using PC*MILER|BatchPro, select the route type "**.in**". Files saved with the extension ".in" do not include any route options.

To open a previously saved .r21 route file:

1. Select the Routes tab > *Open.*

2. Select your saved file from the **File Name** drop-down.

3. Click **Open**.

3.10 Stop Optimization

PC*MILER can optimize the order of stops in the active route window to minimize the total time (when using Practical routing), the total distance (when using Shortest routing), total toll distance (when using Toll Discouraged routing), and distance of the National Network (when using State + National Network routing). Optimizing stops provides the optimal stop order, keeping the origin the same or, optionally, keeping both the origin and destination the same.

To optimize stops on a route:

1. Select the Routes tab > *Optimize > Optimize Stops* or press **Alt+F10** on your keyboard to bring up the Optimize Route dialog.
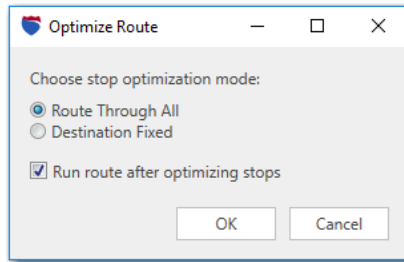
Optimize Route Dialog

2. Choose an option:

- **Route Through All:** Stops will be optimized in any order, with only the origin remaining fixed. The route must have at least three stops.

- **Destination Fixed:** Keeps the origin and destination the same. The route must have at least four stops.

- **Run route after optimizing stops:** Automatically generates the route when optimization is finished.

3. Click **OK.**

NOTE: You need at least three stops to optimize with **Route Through All** and four stops using **Destination Fixed**.

3.11 Location Radius

PC*MILER includes a Location Radius search tool to assist with rate determination and trip planning. This tool enables you to find all cities and/or postal codes within a specified radius around any location. To search for POIs, including custom places, see section 3.12 below on searching from within the route window.

To use the Location Radius feature:

1. Select the Routes tab > *Location Radius* then follow the steps below.

2. Enter a location in the **City** field. The location can be a city/state, postal code, latitude/longitude, or custom place. If PC*MILER|Streets is installed, an address can also be entered.

3. Use the check boxes to select which types of places to include in your search: **Cities**, **Postal Codes**, or both.

4. Enter a **Radius**.

5. Click **Find** to search. The list below will be populated with the search results.
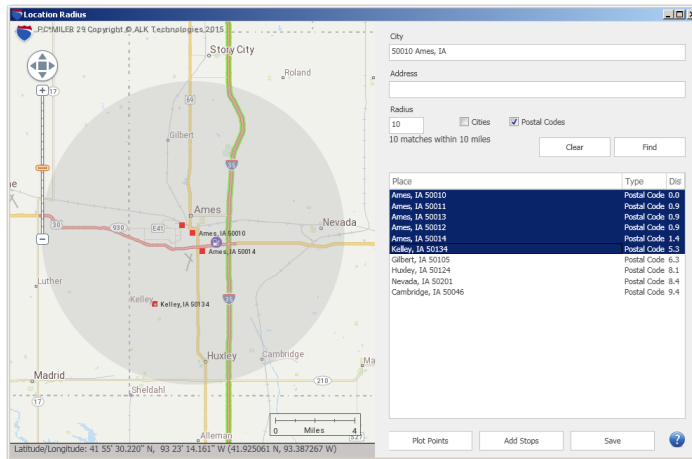
Postal Codes Within 10 Miles of Ames, IA

Selecting, Saving and Plotting Locations

Places on the search results list can be added to the active trip as stops, plotted on the map, or saved to a text file. To select locations on the list:

1. Click a location to highlight it.

2. To select multiple places, hold down the **Ctrl** key then click on additional places; OR hold down the **Shift** key and click a second place on the list, everything between the two places will be highlighted. (To select all places, highlight the first place on the list, then hold down the **Shift** key and highlight the last place, scrolling down if necessary.)

3. With your places selected, you can:

    ▪ Add them as stops in the active route window – click **Add Stops**.

    ▪ Save them to a text file – click **Save**.

    ▪ Plot them on the map – click **Plot Points**. Plotted points will appear as small red squares.

    ▪ Copy them to the Windows clipboard for pasting into another application – highlight your selection and press **Ctrl+C** on your keyboard.

To clear the search from the picklist and map, click **Clear**.

NOTE: The maximum number of matching places that can be displayed after you execute the search is 15,000. In some cases you may need to specify a smaller radius to get a complete list of matches.

3.12 POI/Custom Place Search *(U.S. & Canada only)*

PC*MILER enables you to search for points of interest (POI) and custom places in the United States and Canada from a route window, either within a specified radius around a location or along a corridor on a route.

Optionally, the search can target specific POI categories and can include a key word to look for. Categories include truck stops and services, parking and rest areas, intermodal ramps, highway exits, airports, schools and facilities, hotels/motels, emergency/medical, and custom places. (For more on custom places, see section 3.15. For more on POI, see section 11.14.)

Searching Within a Radius Around a Location

To search for POIs within a radius of a location, follow these steps:

1. Either enter a location in the route window *City* field or select a stop on the stop list, then select **Place of Interest** from the stop type drop-down. If one or more stops have been entered and you don't specify a location for the search in the *City* field, PC*MILER will search around the previous stop.
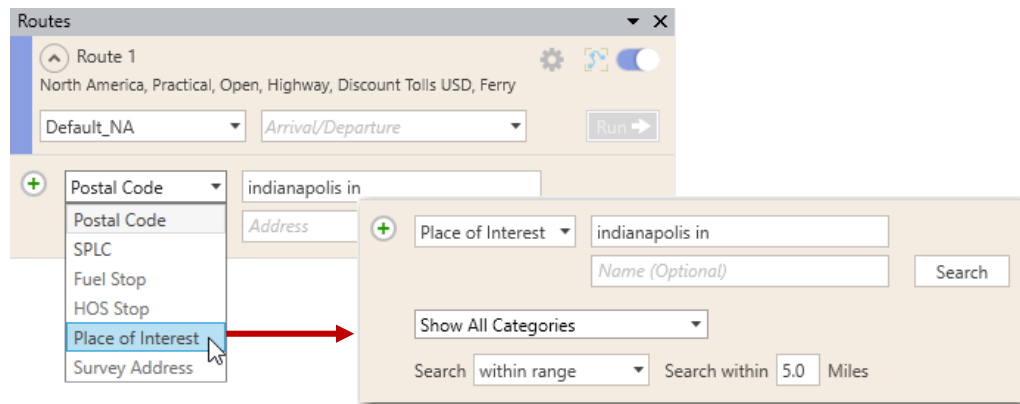
Beginning a POI Search in the Route Window

2. (Optional) To narrow your search, below the *City* field enter a word or name to search for in the *Name* field.   For example, you could enter "inn" and all POIs with a name that includes "inn" will be found.

3. In the **Search within** field, specify a radius. The default here is 5.0 miles.

4. (Optional)   In the categories drop-down, uncheck the categories that you don't want to include in the search. If it's easier, clear the list of check marks by unchecking **Show All Categories** and then check the ones you want. **NOTE:** "Custom" includes only places that were created using the default category; "Custom Place" includes all other custom place categories.

5. Click **Search**. A pick list of POIs will be created and displayed on the map.*

6. To zoom to any POI on the map, highlight it on the pick list. Click **OK** or double-click to enter the selected POI as a stop.
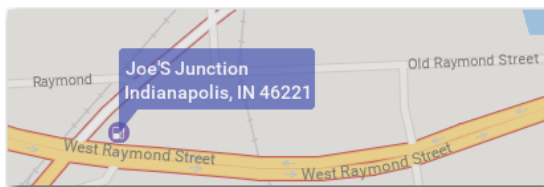
7. The POI you select will be entered as a stop. It can be edited, deleted or moved on the list like any other stop on the trip.

POI Added to the Stop List

*   Fuel prices and amenities information is available with a PC*MILER|Streets license.

Searching for POIs Along a Route

(PC*MILER/Streets must be installed and "Highway and Streets" must be enabled in the Route Options dialog or active route profile.) To search for POIs along a trip leg between two stops, a route must be generated <u>before</u> the search.

1. First enter and run a route.

2. Right click a stop on the route and choose *Insert Stop Above.*

3. Select **Place of Interest** from the stop type drop-down.
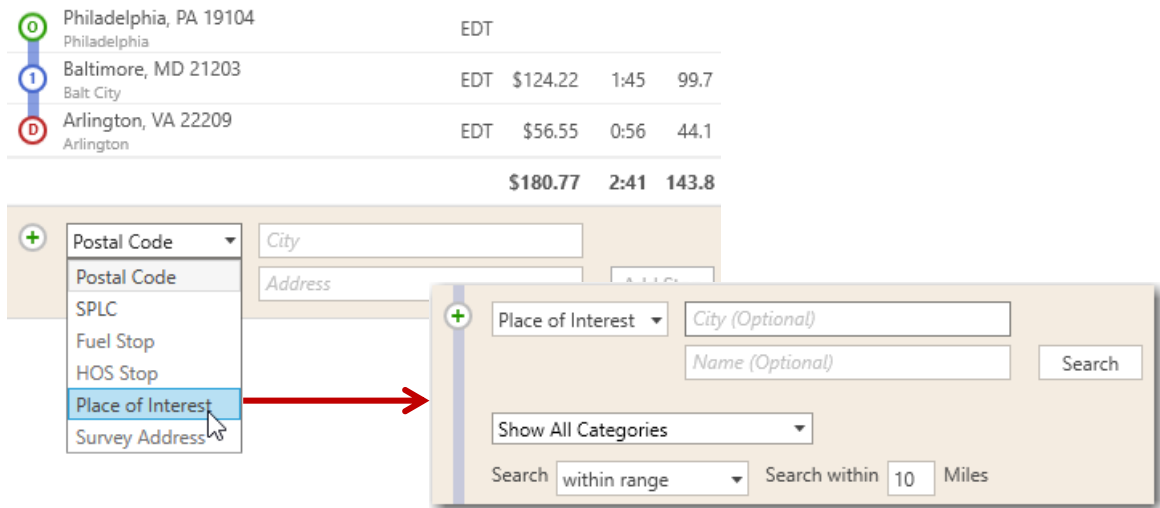
4. Select **along the route** from the **Search** drop-down. The *City*, *Name* and *Search within* fields will be disabled when you select this option.
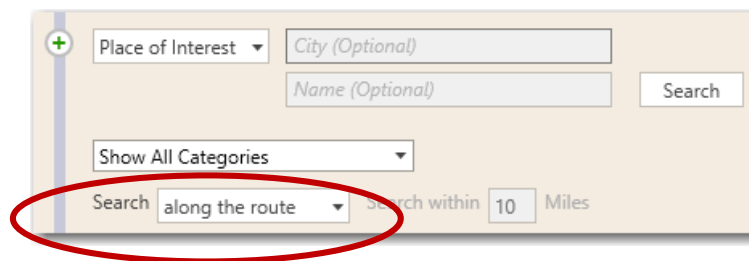
5. (Optional)   In the categories drop-down, uncheck the POI categories that you don't want to include in the search. If it's easier, clear the list of check marks by unchecking **Show All Categories** and then check the ones you want. **NOTE:** "Custom" includes only places that were created using the default category; "Custom Place" includes all other custom place categories.

6. Click **Search** to create a pick list and see the POIs on the map.

7. To zoom to a POI on the map, highlight it on the pick list. To enter a POI from the pick list as a stop, either double-click it or select it and click **OK**.

8. The POI can be edited, deleted or moved on the stop list like any other stop on the trip.

POI Found Along Route and Added to the Stop List

3.13 Searching for Fuel Stops and Fuel Prices *(U.S. & Canada only)*

(PC*MILER/Streets must be installed and "Highway & Streets" must be enabled in the Route Options dialog or active route profile. An Internet connection is required to access updated fuel prices.)

PC*MILER lets you search for fuel stops along a route and provides live retail diesel prices where available in the U.S. and Canada. To enable an automatic real-time fuel price feed, this option must be turned on in the File menu > *Application Settings* > **Fuel Prices** tab. By default this setting is enabled with a 60-minute interval, and it can be edited by the user.

NOTE: Fuel prices for stops in Canada are priced in Canadian dollars per liter. A fuel price of $0.00 on the pick list means that current price data is not available.
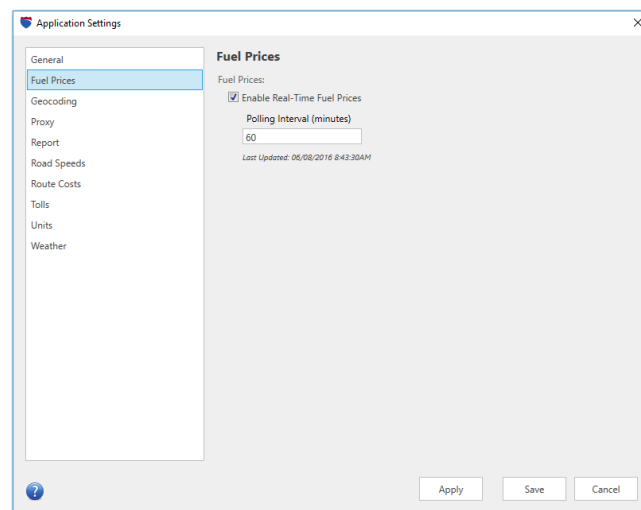
Fuel Prices Enabled in the Application Settings Dialog

To search for fuel stops and prices, a route must be generated first and you must insert a stop above one of the stops on the route. Follow the steps below:

1. Make sure the Fuel Prices option is checked in the File menu > *Application Settings* > **Fuel Prices** tab.

2. Enter stops and generate a route.

3. Press the **F7** key or right click the stop and choose *Insert Stop Above*.

4. Select **Fuel Stop** from the stop type drop-down.

5. Enter a **Distance from the previous stop**. PC*MILER will search along the route from this point until the next stop.

6. (Optional) To narrow the search, in the categories drop-down uncheck any categories that you don't want to include. If it's easier, clear the list of check marks by unchecking **Show All Categories** and then check the ones you want.

7. Click **Search** to create a pick list of fuel stops with fuel prices where available.   Amenities at each stop are shown in the pick list, along with the distance from the origin of the trip segment. Fuel stops will be plotted on the map as well. To zoom to a stop, highlight it on the pick list. To enter a location on the pick list as a stop, highlight it and double-click or click **OK**.

NOTE: Fuel prices won't be displayed if all the values in the results pick list are $0.00.

Results of a Fuel Stop Search

3.14 Hours of Service (HOS) Management *(U.S. only)*

NOTE: PC*MILER|Streets must be licensed and installed to use the HOS Manager, and the **Highway & Streets** option must be selected in the Route Options dialog or current route profile. And though not required, a PC*MILER|Traffic license can significantly enhance reported travel times and the timing of applicable driver breaks and rest stops.

NOTE Also: When one or more HOS-enabled routes are open, Drag Route mode is not available for any route until the HOS route(s) are closed.

PC*MILER's HOS Manager provides the option to incorporate the requirements of the U.S. Federal Hours of Service (HOS) regulations into route calculations. Users can enter the driver's available remaining hours of service and, optionally, expected stop times at each stop along a route. When the route is generated, the HOS Manager will insert rest stops along the route at time intervals that meet the HOS requirements.

Stop durations can also be set in the HOS Manager without enabling HOS breaks.

The rest stops that PC*MILER selects can be customized as needed. When you choose to edit a suggested rest stop, PC*MILER will search for alternate rest stops/fuel stops, backtracking along the route within a time window of about one hour. This backtracking logic avoids a possible violation of HOS regulations due to traffic or other unforeseen conditions that would cause the driver to continue moving forward on the route past the time when a rest stop is due.
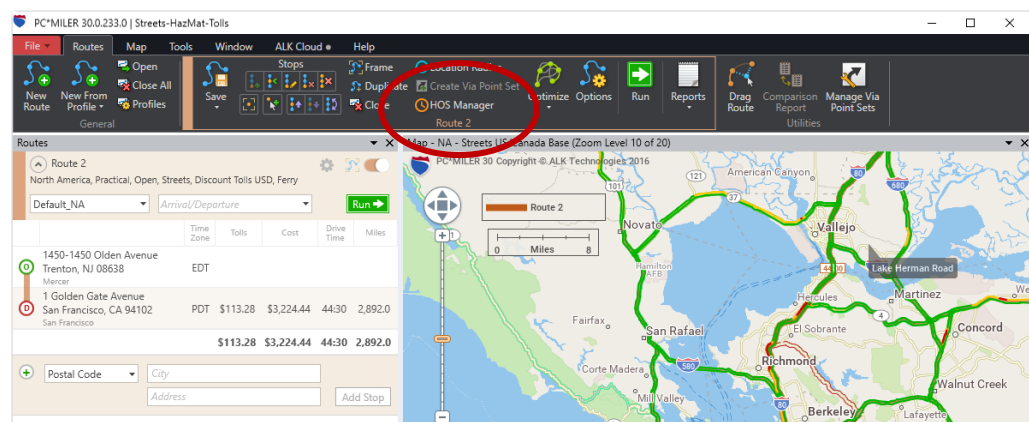
Accessing the HOS Manager from the Routes Tab

To generate a route that includes HOS stops, follow the steps below:

1. First enter and run a route with all the route options set the way you want them. (If a route is run using the HOS Manager and then a change is made to

the route options or route profile, you will need to enter all your HOS options again and re-run the route.)

2. Select the Routes tab > *HOS Manager.*

HOS Manager Window

3. In the HOS Manager, check **Insert HOS Driver Breaks**.

4. In the **HOS Rule Type** drop-down, select your company's schedule – **US Federal 60/7 Long Haul** or **US Federal 70/8 Long Haul**.

5. Enter the driver's <u>driving hours remaining</u> until he/she needs to take a 30-minute rest break and 10-hour end-of-work-day break in the boxes under **Available Driving Hours at Origin**.

6. Enter the driver's <u>duty hours remaining</u> until he/she needs to take a 10-hour end-of-work-day break under **Available Duty Hours at Origin**.

7. Under **Available Cycle Time Duty Hours at Origin**, enter the driver's number of on-duty hours remaining until the next 34-hour break must be taken.

8. (Optional)   Stop durations affect the time estimates used in route calculations. This option can be used with or without enabling HOS breaks. Stop durations are reported and counted towards the total trip time in the Detailed and Driver's reports. In the route window, if an arrival or departure time was entered, the ETA/ETD column accounts for stop times but the estimated drive time column does not.

Check **Include Stop Duration** to enable the settings below for each stop:

Stop Duration: Enter a number of hours at each stop in hh.hh format (e.g. "1.25" would equal 1 hour and 15 minutes).

Status: Uncheck if the duration of the stop is not On Duty time.

Loaded/Empty: Uncheck Loaded if vehicle arrives empty.

Type: Select **Pickup**, **Dropoff**, **RestStop** or **FuelStop**.

9. Click **Save** to generate a route with HOS breaks inserted.

Stop List in a Route Window with HOS Rest Stops Inserted

10. After processing is finished, the rest stops that PC*MILER inserted into the trip will appear on the stop list. All stops will be numbered in order, with the rest stops numbered in light blue circles.

11. Now you have the option to either **Accept** each inserted stop, or **Change** it to an alternate rest stop. If you click Accept next to all the inserted stops, the route won't need to be rerun.

12. Click **Change** next to any inserted stop to initiate a search for an alternate rest stop. You'll be given the option to narrow down the search: in the drop-down on the left, you can optionally change the stop type from **HOS Stop** to **Fuel Stop** or **Place of Interest**; in the drop-down on the right, unchecking one or more stop type categories will narrow the search further.
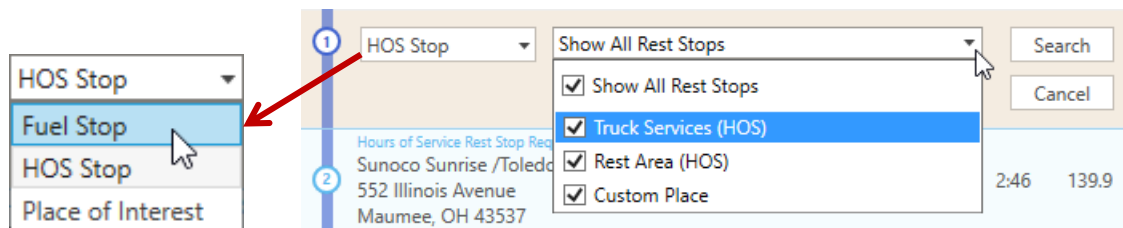
13. Click **Search** to generate a pick list of alternate stops along this route segment. The pick list will include columns that show amenities where available, the drive time and distance from the origin of the trip, and a fuel price where retail price data for diesel fuel is available. (Fuel prices require an active Internet connection. If a fuel price is listed as $0.00, it is because the current price data is not available.) Note that the drive time to an HOS Stop on the pick list is an estimate that may vary slightly from the more accurate times that were calculated in the route window for the same stop.

44 results			
Stop	Time	Distance	Fuel Price
Pilot Travel Center #281 2786 Salt Springs Rd, Girard, OH 44420 Phone: (330)530-8500	06:41:00	395.7	$2.56
Mr. Fuel #732 (Pilot) 2840 Salt Spring Road, Girard, OH 44420 Phone: (330)530-4024	06:42:00	395.7	$2.55
Pilot Travel Center #3 1150 N. Canfield Niles Rd., Austintown, OH 445' Phone: (330)505-3532	06:45:00	398.6	$2.56
TA-Youngstown #58 5400 Seventy Six Dr, Youngstown, OH 44515 Phone: (330)793-4426	06:45:00	398.4	$0.00
Fuel Mart			

Pick List of Alternate Rest Stops

NOTE: To delete the HOS stops: Open the HOS Manager and uncheck **Insert HOS Driver Breaks**, all HOS stops will be deleted from the trip without affecting the original stops.

14. To zoom to any rest stop on the map, highlight it on the pick list. When rest stops are displayed after a search, all other POIs will be temporarily hidden.
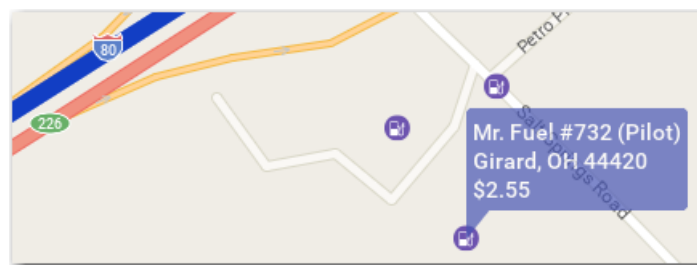
Alternate Rest Stop

15. To choose an alternate from the list, select it and click **OK**. The new stop will be accepted and the trip will re-run automatically. Click **Cancel** to either start another search or cancel this process and **Accept** the rest stop supplied by the HOS Manager.

Summary of HOS Rules Implemented in PC*MILER

The table below summarizes the U.S. government's Hours of Service regulations that have been incorporated into PC*MILER's HOS functionality:

Hours of Service Rules (HOS) for Property Carrying Drivers in the U.S. – PC*MILER 30	
11-Hour Driving Limit	May drive a maximum of 11 hours after 10 consecutive hours off-duty.
14-Hour Duty Limit	May not drive beyond the 14th consecutive hour after coming on duty, following 10 consecutive hours off-duty. Off-duty time does not extend the 14-hour period.
Rest Breaks	May drive only if 8 hours or less have passed since end of driver's last off-duty or sleeper berth period of at least 30 minutes. Does not apply to drivers using either of the short-haul exceptions in 395.1(e). [49 CFR 397.5 mandatory "in attendance" time may be included in break if no other duties performed]
60/70-Hour Duty Limit	May not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.

For a complete summary of Federal HOS regulations go to:
https://cms.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations

For more detailed coverage of HOS rules for drivers, see:
https://cms.fmcsa.dot.gov/regulations/title49/part/395

NOTES on Using the HOS Manager

When using the HOS Manager, note the following:

- PC*MILER may select and insert rest stops that occur along a route up to one hour <u>before</u> the HOS requirement would go into effect, to avoid violations due to traffic or another unforeseen event. For example, if a driver is scheduled for a stop at 3:00, PC*MILER would in most cases favor a stop at 2:10 versus one estimated to occur at 2:50.

- Remember, the hours that PC*MILER returns for a trip are estimates that may not reflect a variety of factors that can influence driving times. When you are manually inserting an HOS stop (either editing a stop returned by the HOS Manager, or inserting a stop into a route without using the Manager), the drive time that appears on the pick list when "**HOS Stop**" is selected from the stop type list in the route window may vary slightly from the time calculated when the trip was run.

- When changing an HOS rest stop, all POIs other than rest stops will be temporarily disabled – i.e. they won't be visible on the map in the areas surrounding the route.

- If all stops on a route are outside the United States, the HOS Manager will be disabled.

- If you delete an HOS stop, PC*MILER will rerun the route and insert the original stop recommendations. To delete all HOS stops, uncheck **Insert HOS Driver Breaks** in the HOS Manager.

- When a route is saved that includes rest stops inserted by the HOS Manager, the rest stops will be saved but any custom settings in the Manager under **Available Driving Hours** and **Available Duty Hours** won't be saved along with the route. In other words, when the saved route is open, the HOS stops will be there but if you open the HOS Manager you'll see the default available hours (8, 11 and 14 hours).

- An arrival or departure time can be added to the trip after HOS rest stops have been inserted, the route will rerun automatically.

3.15 Custom Places

3.15.1 Adding Custom Place Names to the Database

PC*MILER gives you the capability to assign your own custom names to an unlimited number of locations in the PC*MILER database, and optionally to assign them to custom categories. Follow the steps below.

1. Select the Tools tab > *Add Places*; or to pick a location from the PC*MILER map select the Tools tab > *Pick Places on Map* then click on the desired location.

2. (Optional) In the Add a Place dialog, click **New** to create a new category of custom places.

3. (Optional) Enter a unique **Name** for this category.

4. (Optional) From the drop-down **Pin** list, choose an icon to represent this category on the map. (If none is chosen, the generic blue circle will be used.)
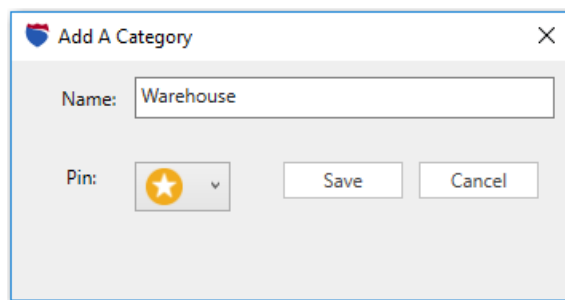
5. (Optional) Click **Save** to save the new category.

6. (Optional) In the Add a Place dialog, make a selection in the **Category** drop-down. If a category is not selected, the custom place you are creating will be in the generic "Custom" category.

7. In the Add a Place dialog, enter your custom name in the **Name** field (the same name cannot be used more than once).

8. Enter the PC*MILER location (real name) in the **Location** and (optionally) **Address** fields. The location can be in any format that is valid for stop entry.

9. Click **Save** to save the new custom place name to the PC*MILER database.

NOTE on Duplicate Names: Any custom name can only be assigned once. If the name already exists as a custom place in the database, you will see a warning and the Save option won't be available.
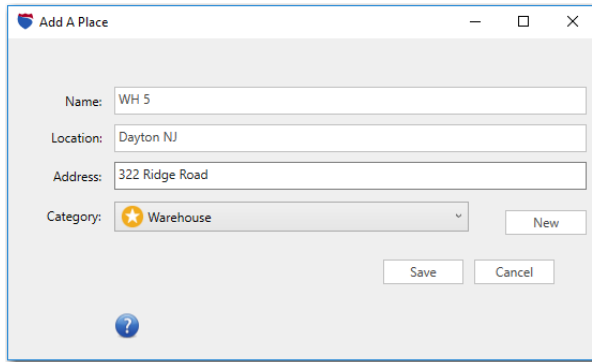
Saving a Custom Place

Once a custom place is saved, you can enter it as a stop on a route: in the route window, type the custom name into the *City* field.

NOTE: Custom place names are sensitive to spacing – for example, the name "01586,GM" is not the same as "01586, GM" *(PC*MILER/Worldwide required to enter stops in regions other than North America).*
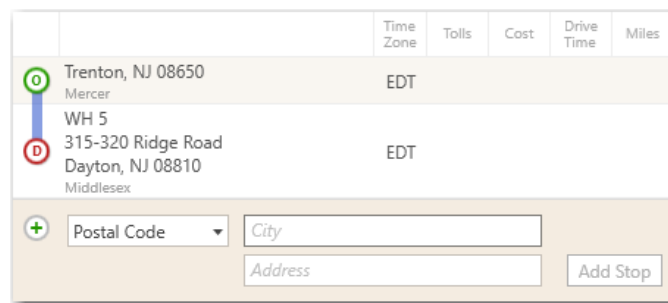
Custom Place Entered as a Stop

To view or edit custom places, press **F2** or select the Tools tab > *Manage* (see section 3.15.2 below).

To view or edit custom categories:

1. Select the Tools tab > *Categories.*

2. Click **Edit**.

3. Make your edits to the **Name** or **Pin**.

4. Click **Save**.
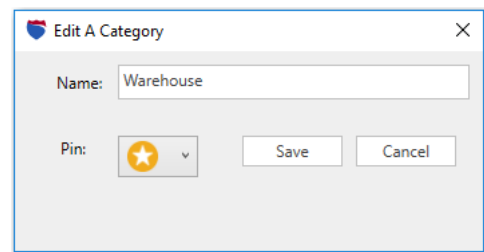
Editing a Custom Place Category

3.15.2 Using the Custom Place Manager

To view, edit or delete custom places, select the Tools tab > *Manage*. All custom places in the database are listed in the Custom Place Manager. To sort any column, click the column header.
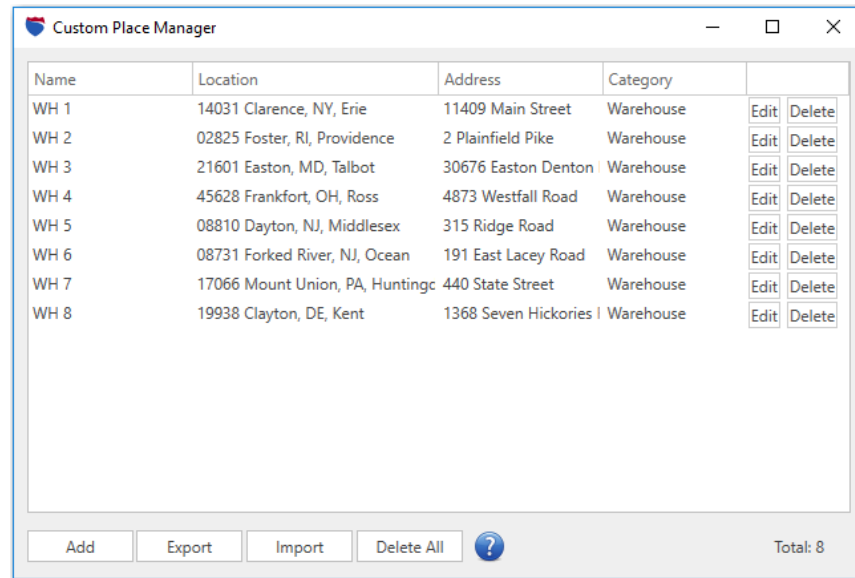
Custom Place Manager
(Address data shown above can be entered only if PC*MILER/Streets data is installed)

To edit a custom place, click the **Edit** button for that place in the last column. Make the desired changes and click **Save** to save your edits.
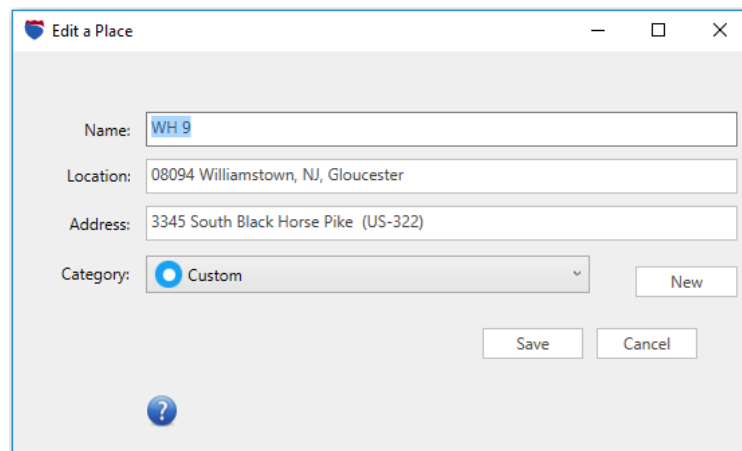
Edit a Place Dialog

To delete a place, click its **Delete** button. To delete all places on the list, click **Delete All**. A prompt will ask you to confirm if you mean to delete all places. To

Export the list of places, see section 3.15.4 below. To **Import** custom places, see section 3.15.5.

Click the "X" in the upper right corner to close the Custom Place Manager and save your edits.

> **IMPORTANT:** It is strongly suggested that you regularly back up important PC*MILER files such as custom places. See section 12.5 for simple instructions.

3.15.3 Creating Custom Latitude/Longitude Points

A custom name can be assigned to a latitude/longitude point in the PC*MILER database by using the Add a Place dialog (section 3.15.1 above). For example, you could type "**Home Office**" in the **Name** field, and "**40n,100w**" in the **Location** field.

Note that PC*MILER tracks the latitude and longitude position of your cursor as it passes over the PC*MILER map (watch the status bar in the lower left corner of the map window).

3.15.4 Exporting Custom Places

	A	B	C	D	E	F
1	Name	Zip	City	State	Address	Category
2	Warehouse-OH	45628	Frankfort	OH	4834 Westfall Road	Custom
3	Warehouse-MD	21601	Easton	MD	30778 Easton Denton Road	Custom
4	Warehouse-NY	14031	Clarence	NY	11409 Main Street	Custom
5	Warehouse-NJ	8731	Forked River	NJ	191 Lacey Road	Custom
6	Warehouse-PA	17066	Mount Union	PA	400 State Street	Custom
7	Warehouse-DE	19938	Clayton	DE	1007 Seven Hickories Road	Custom
8						

Custom Places Exported to a Text File (Column Formatting Adjusted)

All custom places listed in the Custom Place Manager can be exported into a tab-delimited **.txt** text file. This feature can be used to import custom places from an older version of PC*MILER, see section 3.15.5.

To export custom places from the Custom Place Manager, follow these steps:

1. Select the Tools tab > *Manage.*

2. In the Custom Place Manager, click **Export**.

3. In the Export window, select a file type in the **Save as type** drop-down. For a comma-delimited value file choose "**.csv**", or choose "**.txt**" to save as a comma-delimited text file.

4. Assign a file name.

5. Select a target location where the export file will be saved.

6. Click **Save** to create the export file.

3.15.5 Importing Custom Places

NOTE: See section 3.5.17 for the correct way to format latitude/longitude points. See section 3.5.1 for all other stop entry formats that are accepted by the Import Custom Place Wizard.

TIP: Did you know that the Import Custom Place Wizard can be used as a batch geocoding tool to clean up your data? If you have a list of customer locations that include street addresses and/or other information, you can import those locations to confirm that they match locations in the PC*MILER map database. (PC*MILER|Streets is required to process address data.) The original input file does not need to include custom place names but does have to be correctly formatted – see Step 1 below.

NOTE Also: Importing a file containing more than 4,000 places may take a very long time and is not recommended. Consider dividing a large input file into smaller files for importing.

Using the Import Custom Place Wizard, you can import sets of custom places which were created in an environment independent of PC*MILER. During the import process, PC*MILER provides the option to 1) enter the whole set of imported places as stops on a route, or 2) save the imported places as custom places for future use.

The Import Custom Place Wizard first tries to match each record in the input file to a place or address range in the database, converting the records to a format that PC*MILER can use. The input file must be a text file with columns delimited by a tab or other character such as a comma. Here are several lines from a sample text file of custom places that are suitable for importing:

Place·Name	→	PostCode	→	State/Country	→	City	→	Region¶
Place·A	→	35217	→	AL	→	Birmingham	→	NA¶
Place·B	→	35034	→	AL	→	Brent	→	NA¶
Place·C	→	23661	→	VA	→	Hampton	→	NA¶
Place·D	→	29401	→	SC	→	Charleston	→	NA¶
Place·E	→	75001	→	FR	→	Paris	→	EU¶

Sample Text File, Tab Delimited

The import process includes five basic steps, covered on the following pages:

Step 1. **Setting Up a Correctly Formatted Input File**
Step 2. **Open the Input File in the Wizard**
Step 3. **Select and Preview Input**
Step 4. **Confirm Matches**
Step 5: **Add Places to a Route Window or the Custom Place Manager**

STEP 1: Set Up a Correctly Formatted Input File

The first step is to ensure that your input file is correctly organized and formatted. Making the effort to properly organize the input file can make a big difference in how efficiently the locations in the file are processed.

The input file must be a text file with columns delimited by a tab or other character such as a comma. If the original file is a text file, try opening it in Excel, formatting as necessary, and then saving it again as a tab-delimited .txt file

To successfully add places to the database, at minimum the input file must include a location column.

The required location for each place must be either a latitude/longitude, postal code, or city and state/province/country abbreviation. (PC*MILER|Worldwide or DTOD Data must be installed for countries outside North America.)   Other location information can be included in additional columns. As you will see in Step 3, you can tell PC*MILER to ignore columns in the input file that contain data that can't be imported.

As an example, from left to right your input file might include:

- **Place Name** – A custom place name (required). If the file does not include place names and you are importing places for the purpose of data matching, you can insert a column with any appropriate custom name.

- **Address Line 1** – A location address including a street number and street name. PO Box numbers are not valid input and should be removed. PC*MILER|Streets is required for address data to be accepted.

- **Address Line 2** – Secondary address information such as suites, floors, apartments, units, building names, etc. Not accepted by PC*MILER.

- **City** – The city name.

- **State/Province** – A two-letter state/province/estado abbreviation, the name should not be spelled out (e.g. "ON" is correct, "Ontario" won't be accepted).

- **ZIP/Postal Code** –

  o U.S. addresses can be a ZIP or ZIP+4 Code (use a dash with ZIP+4, e.g. 12345-1155). PC*MILER will only read in the first five digits and will ignore the last four.

  o Canadian postal codes should include spaces, do not use dashes (e.g. G1A 1B1, the format is ANA<space>NAN where "A" stands for "letter" and "N" stands for "number").

- **Country** – Not usually needed, but should be in its own column.

- **Region** – *(PC*MILER/Worldwide or DTOD Data must be installed)* A region is only needed if locations are outside North America. Region names should be spelled out as they appear in the Application Settings dialog > **General** tab.

Example File:

Place Name	Address Line 1	Address Line 2	City	State/Province	ZIP/Postal Code	Country
Warehouse1	4 Moore Street	First Floor	Princeton	NJ	08540	US

STEP 2: Open the Input File in the Custom Place Wizard

1. To begin, select the Tools tab > *Import* to open the Import Custom Place Wizard.
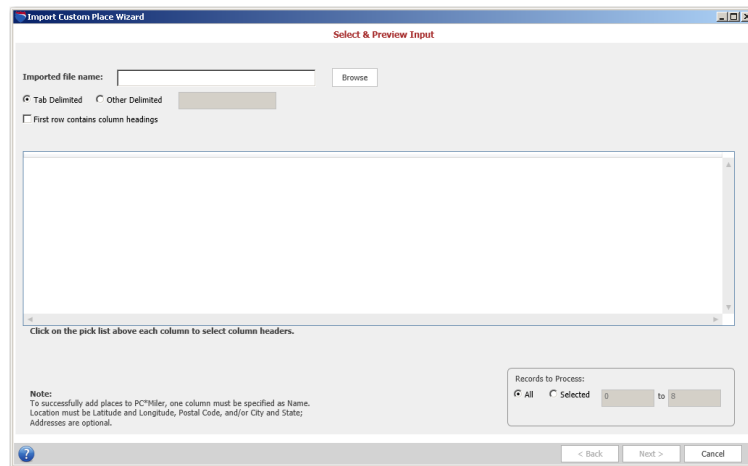
Import Custom Place Wizard – Initial View

2. In the Wizard, select **Tab Delimited** if the input file is tab-delimited text (recommended). Otherwise, select **Other Delimited** and enter a delimiter in the box to the right. This setting tells the Wizard where a new column should begin in the input file. Most commonly, the delimiter is either a tab or a comma.

3. Click **Browse** and navigate to the drive and directory where your data file is located. Be sure to select the correct file type in the drop-down, then select the file to be imported and click **Open**.
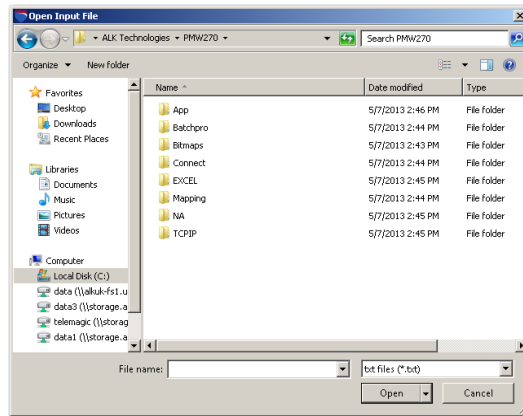
*Open Input File Dialo*g

STEP 3: **Select and Preview Input**

Now you'll see the data from the input file, organized into columns. Initially, all column headers are labeled **Skip**, meaning PC*MILER will skip over that column without importing the data in it.

For each column containing data you want to import, use the drop-down menu at the top to assign a new column header; or if the first row of the input file includes appropriate headers, check **First row contains column headers**.
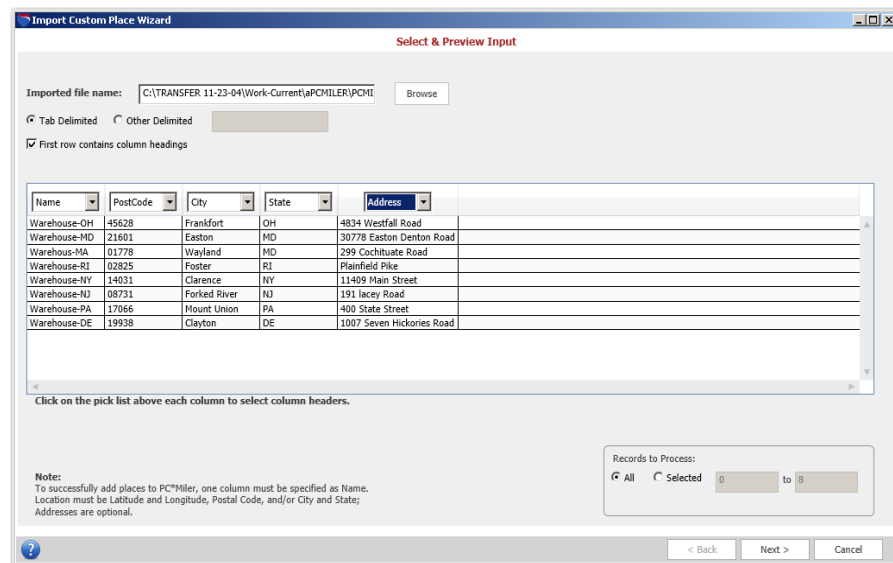
Import Custom Place Wizard – Select and Preview Input
*(Address data shown above can be imported only if PC*MILER/Streets data is installed)*

To successfully import places, there must be at least one location column. The location must be a **LatLong** (latitude/longitude), **PostCode** (postal code), and/or **City** and **State** (state/province/country abbreviation) with an optional **Address**. Other available headers are: **Region** (used only with PC*MILER|Worldwide or DTOD Data), **Description** and **Category**.

TIP: The "**Category**" header can be used to assign a map icon of your choosing to a set of custom places. Simply create a custom category (Tools tab > *Categories*) and make sure the category name in your input file exactly matches the custom category name.

Each of the headers can be applied to only one column, with the exception of **Skip**. Label a column **Skip** if the data in it should not be read (e.g. memos or descriptions) or if it is blank.

To adjust column widths in the table for better visibility, place your cursor between two column headers. When the cursor changes to an arrow, hold down the left mouse button, drag the margin to the desired width, then let go.

The options under **Records to Process** determine how many and which rows of data in the table will become custom places. Select **All** to have all the data processed, or **Selected** to process only some of the records. If you choose **Selected**, enter the range of records to be processed.

With the columns and input selection set, click **Next** to continue.

TIP: If you want to import a file that has different types of locations (postal code, city and state, and/or latlong) on different rows, and/or different combinations of types (such as postal code and state), first use the **=citytolatlong()** function in PC*MILER|Spreadsheets to convert those types consistently to LatLong, then import that file specifying a Name column and a LatLong column as the only location. See the PC*MILER|Spreadsheets *User's Guide* for instructions on how to use the =citytolatlong() function.

ADDITIONAL NOTES: The more information you include, the more certain it is that a unique match will be found. Import Custom Places will import a file that has city and state combined into a single column (label this column "City"), or zip code, city and state combined into a single column (label this column "Zipcode"). A county name may optionally be included at the end of either one. A space should separate the ZIP code from the city, a comma should separate the city from the state, and a comma should separate the state from the county. For example, any of the following are acceptable:

City
Princeton
Princeton, NJ

Princeton, NJ, Mercer

ZipCode
08540
08540, NJ
08540 Princeton, NJ
08540 Princeton, NJ, Mercer

STEP 4: Confirm Matches

When all records have finished processing, the Confirm Matches screen will display the processed records along with results data and output options.
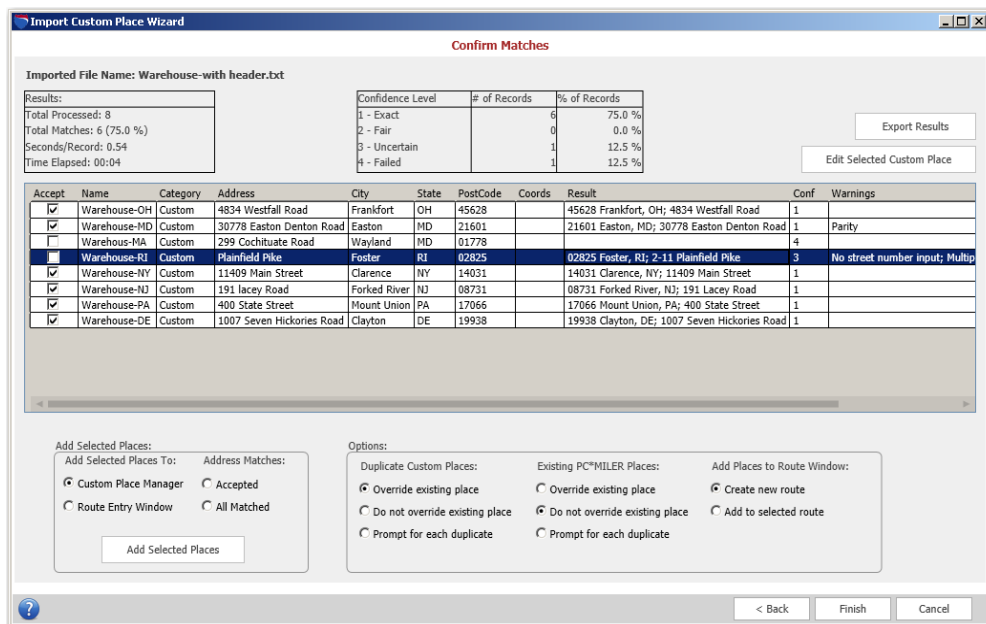
Import Custom Place Wizard – Confirm Matches

Results:

- **Total Processed:** The total number of records processed.

- **Total Matches:** The total number of records that were successfully matched with a location in the PC*MILER database.

- **Seconds/Records:** The average time spent on processing each record.

- **Time Elapsed:** The time elapsed since the start of the record matching process.

Confidence Level:

There are four possible levels of confidence in the accuracy of the data matching that can be returned for each record:

1 Exact – An exact match was made. For street addresses, trust is 95% or greater AND if address is outside the range listed in the database, the top match is within 100 address units of input address*; OR for any other match level if there are multiple matches they are all within .1 air miles of each other. * For example, "100 Main Street" was input and the best match in the database is "150-250 Main Street".

2 Fair – Inexact match but unique result (i.e. there is only one match). For street addresses, trust is 85% or greater AND if address is outside the range listed in the database, the top match is within 500 address units of input address*; OR for any other match level if there are multiple matches they are all within .5 air miles of each other.
* For example, "100 Main Street" was input and the best match in the database is "450-550 Main Street".

3 Uncertain – Inexact match and there is more than one match in the database. For street addresses, trust is 50% or greater.

4 Failed – Match not found. Trust is below 50% for street addresses.

of Records:

This column displays the total number of records which fall into each of the above categories.

% of Records:

This column shows the percentage of all records that fall into each category.

In the **Accept** column, accepted records will be checked to indicate that they were successfully matched with a location in the PC*MILER database with either an Exact or Fair confidence level. Locations that were not accepted will have an error message in the **Error(s)** column that briefly describes the reason for the error. Check marks can be manually entered or deleted in the Accept column.

The **Conf** (Confidence) column shows the confidence level of each record's match (described above). The **Match** column displays the record in the database that was matched to the input location.

STEP 5: Add Places to a Route Window or the Custom Place Manager

Once the validity of all the Accepted matches has been confirmed, you are ready to add the imported places to a route window or the Custom Place Manager. You only need to make a few option selections, described below.

Add Selected Places:

Choose whether output should be added to the **Custom Place Manager** (i.e. the PC*MILER database) or a **Route Entry Window**. Check **Accepted** to only add the accepted names, or **All Matched** to include all matches except those in the "Failed" category.

Options:

Here, if you selected to save the imported places to the Custom Place Manager, choose whether to automatically overwrite any duplicate custom place names or PC*MILER place names that already exist in the database. If **Do not override existing place** or **Prompt for each duplicate** is selected, a prompt will pop up when a duplicate is detected and processing won't proceed until there is an interaction. If you are adding the output to a route window, under **Add Places to Route Window** choose whether to open a new route window or add them to the currently active window.

When ready, click **Add Selected Places** to send the output to the target route window and/or the Custom Place Manager. Click **Export Results** in the upper right corner to create a text file containing the confirmed matches.

3.15.6 Editing Custom Place Records

To edit or verify a record, highlight it in the Results window and click **Edit Selected Custom Place** in the upper right corner of the Confirm Matches screen. In the Edit Match window, you'll see all matches that were found in the PC*MILER database for that location listed and displayed on a map.
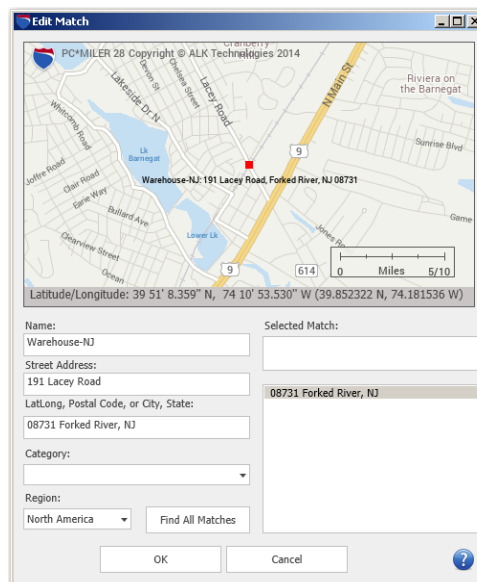
Edit Match Window

The map in this window is set to "Box Zoom" mode. To zoom to a match on the map, hold and drag a box around it with the left mouse button.
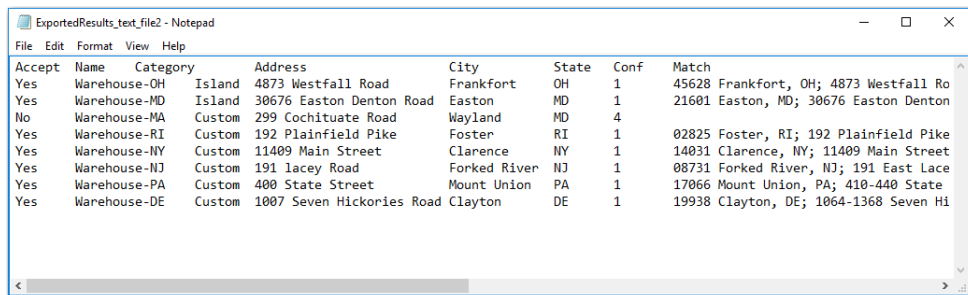
Under the map, the fields on the left show the name and data included in the highlighted record. These fields can be edited. On the right, all matches are listed and the **Selected Match** field shows the complete record in the PC*MILER database for the match that is highlighted on the list.

To search for a wide range of possible matches, you can enter the first few characters of a faulty postal code or city/state name and then click **Find All Matches**. For example, type "085" in the **LatLong, Postal Code, or City, State** field to get a list of all postal codes that begin with "085". (Note that if there is an address in the **Street Address** field, you should delete it before performing the search for best results.)

Click **OK** to exit the window and save your edits, or **Cancel** to cancel the edits.

3.15.7 Exporting Results to a Text File

After your custom places have been imported and Accepted matches confirmed (Step 5 above), you have the option to export the results to a text file: click **Export Results** in the upper right corner of the Wizard.

Results Exported to a Text File (Format Edited)

3.15.8 Converting Custom Place Files from a Previous Version

Custom places that were saved in the previous version of PC*MILER can be transferred and converted to PC*MILER Version 30. First you will need to export the custom places into a text (.txt) file using the Custom Place Manager in PC*MILER 29. The .txt file you created can then be imported into Version 30 – see section 3.15.5 above.

IMPORTANT NOTE: Don't try to simply copy your old custom places from the previous version to the new version. PC*MILER won't recognize the older custom places unless you go through the process described above.

Least Cost Routing

Costing has always been an important use of PC*MILER. Among ALK customers there has been a growing interest in using PC*MILER to help with the trade-off of toll costs, costs per mile, and costs per hour in determining a "least cost" route.

In response to the needs of our customers, ALK began to research the relevant costing issues using several cost factors (typical miles per gallon, cost per gallon, fuel cost per mile, other cost per mile, and labor cost per hour for an 18-wheeler) and found that:

- a slower (less "practical") route is the least-cost route 58% of the time, regardless of diesel price, provided the truck can still make its delivery window and its pickup window for its next load;

- if the least-cost route is chosen, there is the potential to save 0.6/% - 0.9% in costs, on average[1];

- when diesel prices are high, the least-cost route is more likely to be a "shorter" route compared to when diesel prices are low; and

- the absolute amount of savings from choosing a least-cost route is insensitive to diesel price.

Of the 90 origin/destination pairs used in ALK's study[2], the O/D with the largest difference in cost, regardless of diesel price, was Chicago, IL to Washington, DC. At a fuel price of $2.71/gallon, the savings if the "least cost" route was chosen would be $79, or 7.8% [3]:

Chicago, IL to Washington, DC							
Route	Miles	Hours	Cost				
			Total	Tolls	Fuel	Time	Maint
Prac	697.1	11.60	$1,010	$147	$315	$465	$84
Prac|Toll	776.8	12.90	$961	$0	$351	$517	$93
Short	689.9	12.10	$994	$115	$312	$485	$83
Short|Toll	700.1	13.23	$931	$0	$316	$531	$84
Least-cost difference	3.0	1.63	-$79	-$147	$1	$66	$0

Would a customer in the above scenario actually save $79 in cost if they chose the "least cost" route? That would depend on a lot of factors that are external to the route:

- where the driver is in their hours of service cycle

- the delivery time window for the truck and driver's current load

- the pickup time window for the truck and driver's next load

- alternative opportunities to match a different truck and driver to the next load (for a dispatcher of company drivers) or to choose a different next load (for an owner-operator)

On the basis of all the above findings, ALK has developed a new Least Cost routing feature that considers user-specified values for miles per gallon, cost per gallon, fuel cost per mile, other costs per mile, labor cost per hour, and stop costs – and includes a parameter for a greenhouse gas emission estimate.

Least Cost routing generates a series of alternative routes with distance, time and cost estimates, and lets the dispatcher or driver (or an external system, such as a truck dispatch optimization system) choose an optimal route, considering factors such as those cited above that are external to the route. If PC*MILER|Tolls is installed, toll costs are factored in as well.

Reference Notes:

1 - These results are for 48' equipment. It is expected that the potential savings for 53' equipment will be lower, due to fewer opportunities for legal alternative routes.

2 - The O/D pairs used for the study connect the centers of the 10 largest metro areas in the U.S.

3 - Sources of "average" data used in the study were default values for drivers paid by the hour, along with values from a recent American Transportation Research Institute (ATRI) study (*An Analysis of the Operational Costs of Trucking*), the U.S. Energy Administration, and typical miles per gallon for an 18-wheeler.

4.1 Using Least Cost Routing

To calculate Least Cost routing, follow the steps below:

1. In a new route window, enter an origin and at least one destination, then run the route – click **Run** or press **F10**. If there are any time/cost settings that need to be specified, they can be entered in the Application Settings dialog – see section 10.1.7.

2. Select the Routes tab > *Optimize* > *Least Cost Routing*. A separate window will open that displays the possible routes on a map and the calculated totals for each route below the map. The most efficient calculated totals for distance, costs, hours and tolls will be highlighted in yellow below the map.
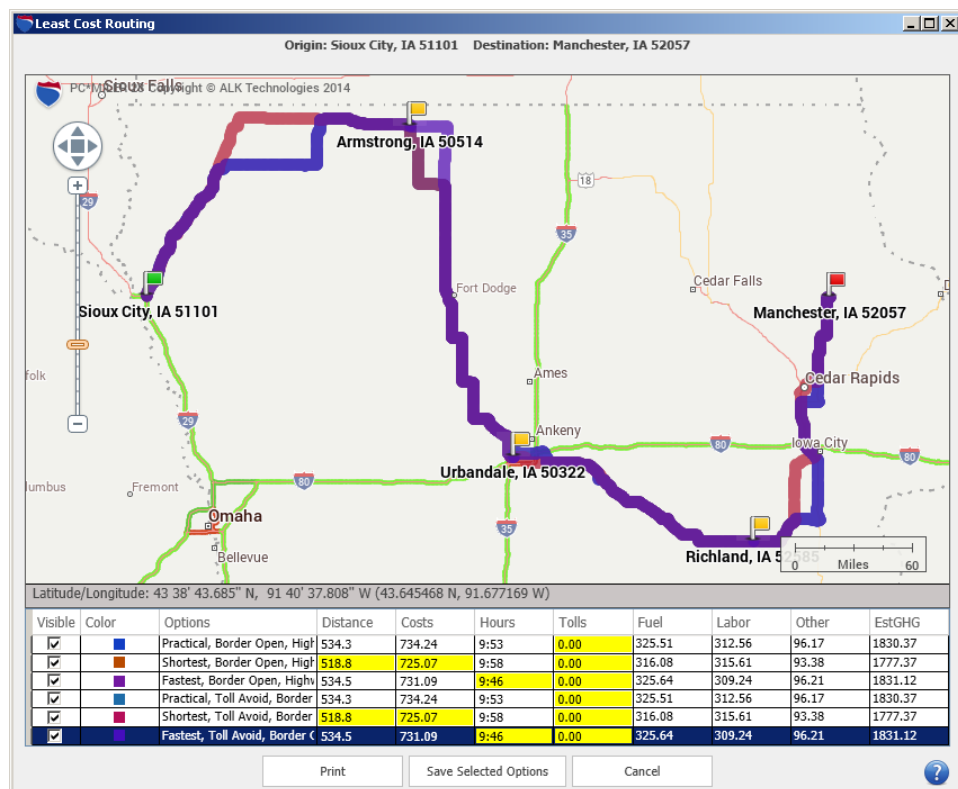
Least Cost Options Window

Internally, PC*MILER calculates six route types for Least Cost routing, but if the total cost is the same for two or more of these routes, not all routes will be displayed. Route types that PC*MILER calculates for every route are: Practical, Practical - Toll Discouraged, Shortest, Shortest - Toll Discouraged, Fastest, and Fastest - Toll Discouraged.

Note that setting a governor (maximum) road speed as a Route Option or option in a route profile can alter the route calculated using the Fastest route type. A lower

governor speed could result in a shorter route distance and more lower classed roads being used (see section 10.1.6 for road classifications).

To hide a route on the map, uncheck it in the **Visible** column.

To use one of the generated routes, highlight it and click **Save Selected Options**. The calculated totals will appear in the route window, replacing the original route.

Click **Print** to print the Least Cost route calculations in a Comparison report.

Route	Type	Origin	Destination	Miles	Cost	Hours	Tolls	Fuel	Other	Labor	Est. GHG
1	Practical	Macon, GA 31201	New York, NY 10001	948.9	1429.83	15:19	72.00	623.14	180.30	554.39	3511.11
2	Shortest	Macon, GA 31201	New York, NY 10001	870.7	1490.46	16:31	155.45	571.79	165.44	597.77	3221.76
3	Fastest	Macon, GA 31201	New York, NY 10001	927.2	1482.70	14:59	155.45	608.85	176.16	542.23	3430.56
4	Practical, Toll Avoid	Macon, GA 31201	New York, NY 10001	952.5	1422.03	15:21	60.00	625.49	180.98	555.56	3524.32
5	Shortest, Toll Avoid	Macon, GA 31201	New York, NY 10001	870.8	1474.30	17:43	96.00	571.82	165.45	641.03	3221.95
6	Fastest, Toll Avoid	Macon, GA 31201	New York, NY 10001	949.2	1414.50	15:13	60.00	623.31	180.35	550.84	3512.03

Least Cost Comparison Report

Using Time-Based Routing

In recent years, ALK Technologies has become aware that a number of our customers are interested in considering time of day, day of the week, and time zones when calculating and reporting routes, distances, travel times, and toll costs. Up to and including Version 30, PC*MILER default routes, distances, travel times and toll costs are calculated based on:

- average road speeds by state/province, urban/rural, and class of road;

- height, length, width, and weight restrictions that apply during the majority of the commonly traveled seasons of the year, days of the week, and times of day;

- seasonal roads being open during shipping and receiving seasons, but not to through traffic;

- and peak-period toll costs for the most recently updated quarter of the release year.

These fundamental routing criteria work well for the many purposes of our users, and will always be foundational to ALK's industry-leading PC*MILER products.

The time-based feature enhancements described in this chapter were added in PC*MILER Version 25 and now offer more precise travel time estimates to those users who are interested. PC*MILER capabilities related to time-based routing allow users to:

- specify a departure or arrival date and time for more realistic transit times;

- calculate truck-specific toll costs based on the time of day *(PC*MILER/Tolls must be installed)*;

- and calculate more accurate transit times based on industry-leading historical and real-time traffic data *(a subscription to PC*MILER/Traffic and an Internet connection are required)*.

Time-based routing can be run with or without the use of traffic data to increase the precision of travel time calculations.

When time-based routing is used, ETA/ETD information appears in the route window, Detailed Route Report, and Driver's Report.

5.1 Route Generation With ETA/ETD

Optional Arrival/Departure and **Travel Speed Settings**
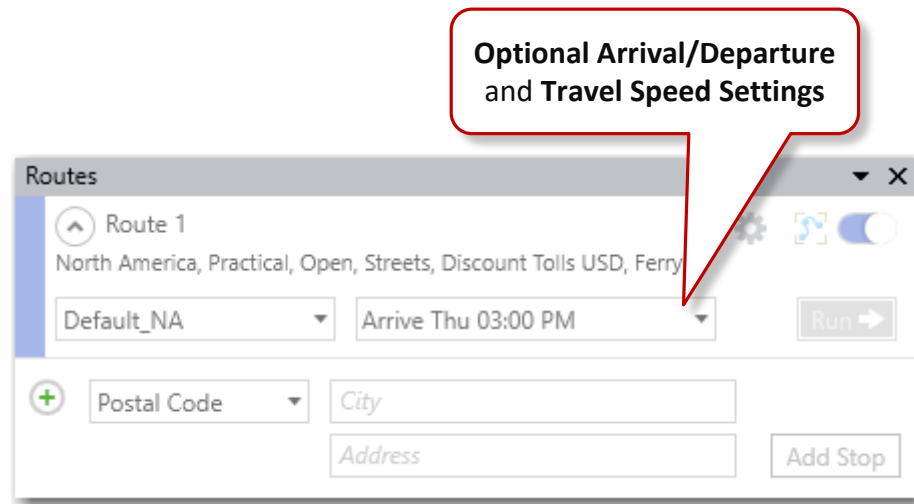
Time-Based Routing Options in the Route Window

> **NOTE:** The *Arrival/Departure* options can also be set in the Route Options dialog (see section 10.4).

PC*MILER's optional time and date settings enable you to generate routing that calculates estimated times of arrival (**ETA**) and departure (**ETD**) based on user-specified departure or arrival input. An ETA is calculated for every stop and toll plaza on the route *(PC*MILER/Tolls must be installed to access toll information)*. Follow the steps below to generate time-based routing.

1. (Optional) Select the File menu > *Application Settings* > **Units** to select a **Time Zone** and change the **Time Format.** The time format is AM/PM by default, and the default time zone is Local time (conforms to the time at each stop). The time zone setting affects ETA/ETD reporting but not how travel times are calculated. Click **Save** to save changes.
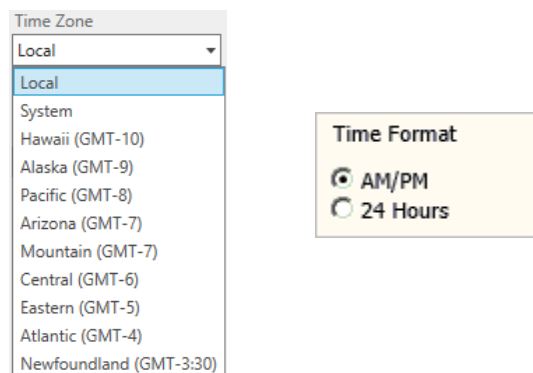
- **Local:** Reported ETA/ETD will conform to the time zone where each stop or toll plaza is located (applies in all world regions).

- **System:** ETA/ETD at stops and toll plazas will be reported based on the time zone setting on the host computer.

- **Specific:** *(Available only for North America and Europe regions)* Select a time zone by region. Options will reflect the currently active world region. ETA/ETD at all stops and toll plazas will be reported using this time zone.

2. In a route window, click the *Arrival/Departure* drop-down before or after entering stops and select your options:
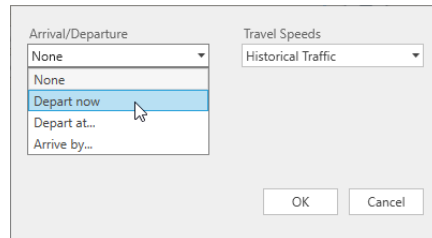
- **Arrival/Departure**

  Select **Depart now** for the trip's time of departure at the origin to be the current time, **Depart at…** to set a departure day/time at the trip's origin, or **Arrive by…** to set the target arrival time at the trip's last stop.

- **Day/Date**

  Select either **Specific Date** or **Day of the Week**. To enter a date, either type it in the text box or click the calendar and select a date. To specify a day of the week, click the drop-down list.
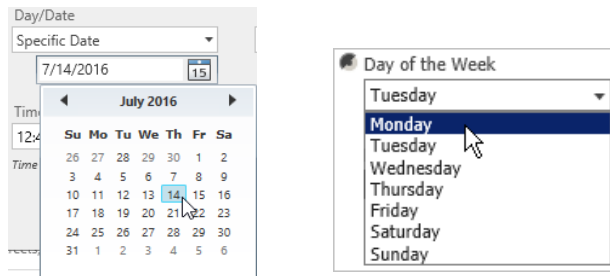
- **Time of Day**

  This is the targeted local time at the arrival/departure location. Type in a time (select the hour first, then the minutes, to overwrite) or use the arrows.
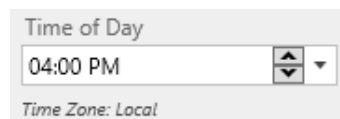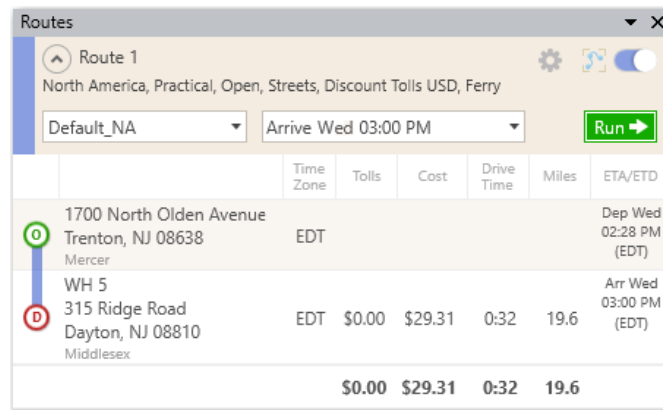
- **Travel Speeds**

  If PC*MILER|Traffic is licensed, use this drop-down to apply traffic speeds instead of PC*MILER's average road speeds by road class. See section 5.2

below on the effect of Traffic data on route calculations. See section 10.1.6 to view or customize PC*MILER average road speeds.

3. Click **OK** to close the *Arrival/Departure* drop-down.

4. With two or more stops entered, click **Run**. Estimated arrival and departure times at all stops on a route will be calculated. If a target Arrival time was entered, the necessary ETD from the origin to meet that target will be shown.

   ETA/ETD calculations do not include break times or stop times. To add stop times or Hours of Service rest break stops to a route, see section 3.14.

Generated Route with a Target ETA

5.2 Using Traffic Data *(U.S. and Canada only)*

NOTE: A subscription to PC*MILER|Traffic must be purchased to access traffic data in PC*MILER, and you must have an Internet connection to use these features.

ETA/ETD estimates can be generated with or without using traffic data, and historical traffic data can be applied to time estimates without entering an ETA/ETD. Using traffic data will increase the precision of time estimates.

If you choose not to activate traffic data, travel times and ETA's will be calculated based on PC*MILER's average road speeds by class of road in each state/province. (To view or customize these road speeds, select the File menu > *Application Settings* > **Road Speeds**.)

To enable the use of Traffic data, select a traffic option in the **Travel Speeds** drop-down: *Real-time Traffic* if *Depart Now* is selected under **Arrival/Departure**, or *Historical Traffic* if one of the other Arrival/Departure options are selected (including *None*).

Traffic data is collected by road segment. With Traffic enabled, travel times and ETA's will be calculated based on **historical** or **real-time** traffic data, depending on the arrive/depart setting.

"Historical" data reflects how average traffic patterns affect road speeds on the road segments used by the generated route. An "average" pattern is created using a historical time slice: 7 days in a week, with each day divided into 15-minute time slices. "Real-time" data is just that: current traffic patterns that are fed into the system in real-time.

If *Depart now* is selected, Real-time traffic data will be used for the first 15 miles and Historical data will be used for the remainder of the route. This is because after 15 miles of driving, conditions will have changed and they are more likely to resemble historical conditions than current conditions. Other *Arrival/Departure* settings always use Historical data.

The Traffic data feed can be displayed on the map – see Chapter 6.

5.2.1 Use Traffic Data By Default

To use traffic data by default, select the Routes tab > *Options* > **Arrival/Departure** and select the available traffic option under **Travel Speeds**. Then save this setting to the Default route profile: select the gear button > *Save Options as Default Profile*. Or choose *Save Options as New Profile* to save a new route profile to use regularly.
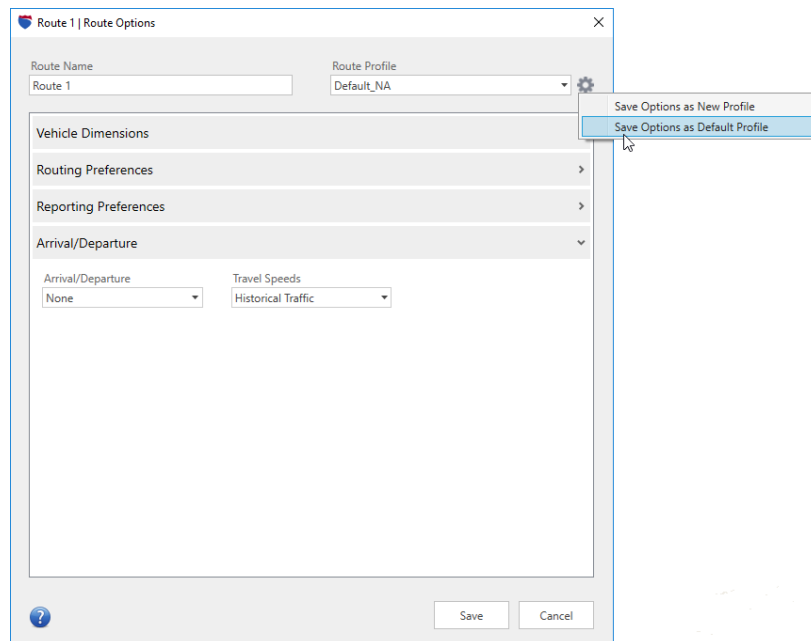
Saving Route Options to a Route Profile

5.3 ETA/ETD in Reports

Estimated arrival and departure times at all stops on a route are shown in the mileage report in the route window after the route has been generated. These times appear in the **ETA/ETD** column to the far right. This column is inactive when an arrival or departure day/time has not been entered.

ETA/ETD information also appears in the far right column of the **Detailed Route Report** if a day/time was entered for the route (the report may need to be scrolled to the right – see section 9.3 for a detailed description of this report). This column will show the estimated times of arrival at every stop and toll plaza on the route. If a target arrival time was entered, the estimated departure time from the origin will be shown. If a departure time was entered, that time will be shown at the origin.

In the **Driver's Report** (see section 9.5), if a route was run using real-time traffic data, a **Delay** column will appear just to the right of the **Time** column. The "delay" time identifies delays caused by the current traffic conditions on the first 15 miles of the trip.

5.4 "Special Restrictions" in Routing and Reports

Time-based routing integrates road restrictions that are active only during specific times. These restrictions are enabled when you select an arrival or departure time for a trip – PC*MILER will route around roads that have time-based restrictions.

These special restrictions may include roads that are closed in one or more directions; have a temporary closure in one or more directions (construction/natural disaster); have a restriction on a particular truck configuration (weight, hazardous material) in one or both directions; have a special speed limit in effect; or have a particular lane closed or allowed.

For example, the CO-82 highway from Aspen, CO to Buena Vista, CO is closed in winter; so if an arrival or departure time during the winter season is entered, PC*MILER will route around I-82. (Note that the roads the alternate route takes may vary depending on whether the Highway Only route option is active in the route's options or profile. Using local streets in routing generally provides a route that is closer to the original one – in this case the spring, summer and fall route.)

Choosing to override **Size and Weight Restrictions** in the Route Options dialog or a route profile will override these time-based restrictions, along with all other restrictions. Where a route travels on a restricted road, warnings will appear in the route window (a red circle, hovering over it provides a brief description), and in the Detailed and Driver's reports.

The information provided in warnings will be formatted as follows:

Days of the Week: SMTWTFS. Any days during which the restrictions don't apply appear as a dash, e.g. S-T-TFS.

Hours: XX:XX AM – XX:XX PM, or XX:XX – XX:XX if 24 Hours ("military time") is selected in the File menu > *Application Settings* > **Units** tab.

Months: Includes the three-letter abbreviation of all valid months.

Days: Date range in every month from X-Y, e.g. 7-10.

Weeks: Week range in every month from X-Y, e.g. 1-2.

Special Restriction Override Warning in Route Window and Driving Directions –
Highway CO-82 from Aspen to Buena Vista, Colorado

5.5 Setting Road Speeds

To change PC*MILER's default road speeds to more closely conform to actual speed estimates for your vehicles, select the File menu > *Application Settings* > **Road Speeds**. See section 10.1 on changing application settings.

5.6 Setting a Governor Speed

Using a governor speed limit can help you more accurately calculate ETA's in PC*MILER, publish ETA's from PC*MILER to customers with more confidence, and calculate a more accurate HOS-planned route if desired.

A governor speed limit can be set when you create a route profile, or as an option for an individual route (Routes tab > *Options* > **Routing Preferences**). See section 10.3.2 for a description of this option.

5.7 Time-Based Toll Cost Reporting

*(PC*MILER/Tolls license required)* Prior to Version 25, PC*MILER calculated toll costs based exclusively on peak hour rates while factoring in vehicle dimension settings that affect those rates. Beginning in Version 25, when an arrival or departure time is entered for a route, truck-specific toll costs can be calculated even more precisely because time-of-day variations are factored into toll rates when and where they occur, including peak and non-peak tolls.

See Chapter 7, *Getting Toll Costs,* for more on generating routes with toll costs.

NOTE: Toll costs are always calculated in the local time as the planned route crosses the toll booth. By default, the date/time of the toll collection is also reported in that local time. To change this setting, select the File application menu > *Application Settings* > **Units** and use the **Time Zone** option to choose either *System* (your computer's time) or a specific time zone. The date/time of the toll collection will then be reported in the time zone you specified. Note that ETA/ETD displayed for each stop in a route window will also be affected by this setting change.

PC*MILER|Traffic gives users the option to purchase access to real-time and historical traffic data for roads throughout the U.S. and Canada for more precise time-based routing, as described in Chapter 5. This data can also be used to display historical, typical or real-time traffic patterns in the PC*MILER map window. (See Chapter 11 for more on using the map window.)

NOTE Also: The traffic display options described in this chapter do not affect how traffic data is used when calculating ETA/ETD on a route.

Real-Time Traffic Display Showing Level of Congestion –
Lincoln Tunnel, New York, NY

PC*MILER's traffic display feature lets users instantly visualize traffic data on the map in any location throughout the continental United States to help with route planning, analysis, and diagnostics. *(A PC*MILER|Traffic license and an active Internet connection are required.)*

NOTE: An active Internet connection is required for the display of real-time traffic patterns and subsequent updates to historical traffic data. If you aren't connected to the Internet and request a real-time traffic display, you won't see any traffic flows on the map.

6.1 Traffic Display Options

To display traffic on the map, select the Map tab > *Show Traffic* or *Traffic…* in the right mouse menu off the map window. The Traffic Display window can be left open and moved around the screen.
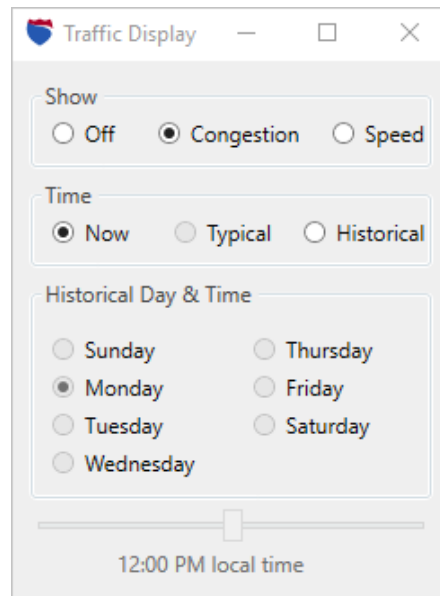
Traffic Display Window

To turn on the display, select either **Congestion** or **Speed** at the top of the Traffic Display window. Options in this window are:

Show

Congestion: Show the amount of congestion relative to Typical (see *Time* options below).

Speed: Show absolute traffic speeds.

Off: Turn the traffic display off.

Time

Now: Display real-time data (Internet connection required).

Historical: Display past traffic patterns. The Historical option displays average traffic based on patterns created using a historical time slice: 7 days in a week, with each day divided into 15-minute time slices. The Historical display depends on the day and time selected below.

Typical: This option pertains only to road speeds (not congestion) and represents road speeds that are typical when there is no traffic congestion.

Historical Day & Time

Using the radio buttons and slider bar or arrows, indicate a day of the week and time of day for the display of historical data.

6.2 Traffic Display on the Map
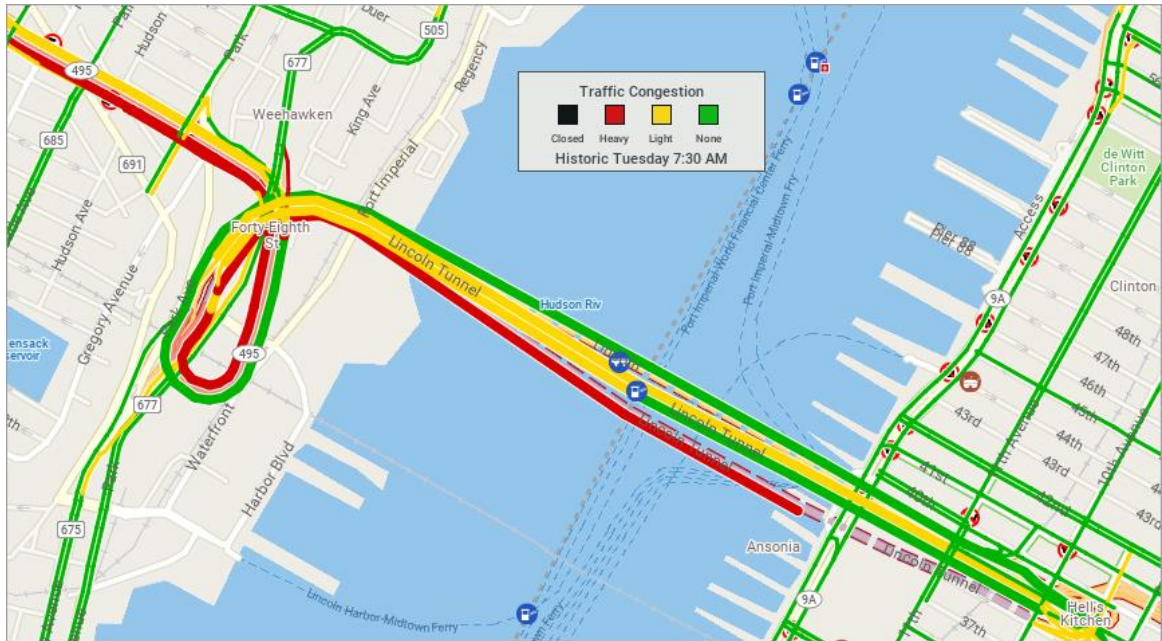
Historical Display for Tuesday 7:30 AM – Lincoln Tunnel, New York, NY

With Traffic licensed and enabled (Map tab > Show Traffic), traffic patterns are drawn on the map at zoom levels 6-20. Traffic does not appear at zoom levels less than 6.

The Traffic legend shown on the map will correspond to the setting in the Traffic Display window. In the example above, Historical Congestion patterns are drawn and the Traffic Congestion legend shows the colors used.

Real-time traffic displays these legends:

Traffic Legends – Real-time Display

Historical traffic legends display the day of the week and time setting:

Traffic Legends – Historical Display

In the Road Speeds legend, speeds are in miles per hour by default. This setting can be changed to kilometers – go to the File menu > *Application Settings* > **Units** tab.

NOTE: If you are working with a real-time display, it may take anywhere from a few seconds to a minute or so for the display to update, depending on the speed of your Internet connection and when updated traffic information becomes available.

If ALK's PC*MILER|Tolls add-on module was purchased with PC*MILER, you can generate accurate, up-to-date toll costs for U.S. and Canadian lanes with these costs integrated directly into the routing database and reported turn-by-turn per trip. Toll costs appear in the Detailed Route Report, State/Country Distance Report, and Comparison Report, and tolls can be reported in the currency of choice – either U.S. or Canadian dollars – using the current conversion rate.

Accurate toll cost calculations can optimize productivity in multiple departments of your organization by assisting in the routing, rating, and reconciliation processes. Now you can determine whether it's more cost-effective to take a toll route, or a non-toll route with a few additional miles, before routing a vehicle.

PC*MILER|Tolls generates truck-specific toll costs for toll roads, bridges, tunnels, and border crossings for U.S. and Canadian toll authorities. The data that PC*MILER|Tolls provides includes:

- Both cash and discount toll program transactions.
- Range (ticket) and barrier (coin drop) data in addition to two-way tolls, one-way tolls, and tolls that vary by direction.
- Quarterly toll data updates to ensure accuracy when calculating toll costs throughout the year. (PC*MILER|Tolls users receive notification by email when quarterly updates are available, or may use *Check for Updates* in the Help tab to ensure they have the most current data.)
- Time-of-day variations factored into truck-specific toll rates when and where they occur, including peak and non-peak tolls, if time-based routing is active in the route window. (See Chapter 5 for a detailed description of how to use time-based routing.)
- Toll rates for smaller 2-axle vehicles when automobile routing is generated.
- Future expected changes to toll rates included as available.
- Thirty-five (36) toll discount programs throughout the U.S. and Canada (states in which each program apply are listed below).

GENERAL NOTES on TOLL RATES: Unless vehicle dimension settings are customized in the Route Options dialog or using a route profile, PC*MILER|Tolls calculates toll costs for an 80,000 pound, 5-axle vehicle. Reported toll amounts are accurate and up-to-date, but not always exact due to several factors: first, several – though not many – toll roads have rates that are based on weight (for example, the Detroit-Windsor Tunnel charges a set rate per 100 lbs. gross weight in both directions); second, some toll charges (in various states) are time-of-day driven, and in this case, tolls will be calculated using the highest (peak) rate unless

PC*MILER's time-based routing is used; and third, future and proposed toll rates are incorporated into the database where appropriate and these rate changes may occasionally be cancelled at the last minute.

Also note the following: if the user does not specify a departure/arrival date, the computer's system date is used as the date of departure to determine the effective toll rates for the trip (which include any rate changes that become effective during the trip). However, this is not true for the time of day. If the user does not specify a time of departure/arrival, the base rate for the date (i.e. highest rate) is used without reference to the system time.

States/Provinces Where Each Discount Program Applies:

SPECIAL NOTE: The "EZPass-MA", "EZPass-NJ", or "EZPass-WV" options apply to those who purchased the EZPass service in Massachusetts, New Jersey, or West Virginia. The reported rates for these programs have the extra discount that applies already subtracted. Those who purchased the EZPass service outside Massachusetts, New Jersey, or West Virginia should choose the "EZPass" option when calculating toll costs.

Discount Program	Valid In		Discount Program	Valid In
407 ETR Transponder	ON Canada		I-Pass	IL
A25 Transponder	QC Canada		K-Tag	KS
A30 EXPRESS Transponder	QC Canada		Laredo Trade Tag	TX
BreezeBy	OR		LeeWay	FL
Cruise Card	GA		MACPASS	NS Canada
Downbeach Express Pass	NJ		NC Quick Pass	NC
E-Pass	TX		NEXPRESS TOLL	MI ON Canada
E-Pass Canada	NS Canada		Palmetto Pass (PAL PASS)	SC
ExpressPass	NY, ON Canada		Peach Pass	GA
EXpressToll	CO		PikePass	OK
EZ Tag	TX		Quickpass	BC Canada
EZPass	DE, IL, IN, ME, MD, MA, NH, NJ, NY, NC, OH, PA, RI, VA, WV		RiverLink*	IN, KY
EZPass-NJ	NJ		StraitPASS	PEI Canada
EZPass-WV	WV		SunPass	FL
FasTrak	CA		TollTag	LA, TX
GeauxPass	LA		TReO	BC Canada
Good To Go	WA		TxTag	TX
GO-PASS	CO		Wabash Pass	IN

* RiverLink is new in 2016 and applies to three bridges from Louisville into Indiana. According to the tolling authority, these bridges will be completed in late 2016 when

RiverLink will become an active program. Until then, the toll amount for RiverLink will be 0 (zero).

The following discount programs have been discontinued in the database:

Discontinued Program	State	Versions Available	Version Discontinued	Reason
C-Pass	FL	24-28	29	Adopted SunPass
FAST LANE	MA and all EZPass facilities	21-28	29	Only EZPass is used now
Smart Tag	VA	21-28	29	Only EZPass is used now
NEXUS	NY, ON	27	28	Discontinued
I-Zoom	IN	21-26	27	Replaced by EZPass
B-Pass	NB	17-25	26	Toll discontinued
M-Tag	MD	17-23	24	Replaced by EZPass
NH Tokens	NH	17, 18	19	Replaced by EZPass
O-Pass	FL	21-23	24	Absorbed into SunPass
Ready Toll	OH	17, 18	19	There is no discount associated with this program, it's simply a "debit card" used to pay tolls
Transpass	ME	17- 23	24	Replaced by EZPass

SPECIAL NOTE: Toll costs on the New York State Thruway for "5-axle 48' Trailer" and "5-axle 53' Trailer" vehicles are accurately reported. The N.Y. Thruway lists separate toll rates for these vehicle types and PC*MILER|Tolls has been calibrated to report the correct rate depending on the routing option selected. If the Vehicle Dimension length is set to 53' in the active route profile or as a route option, the corresponding 5-axle 53' Trailer toll cost will be reported.

NOTE Also: Some toll exits in the U.S. and Canada have recently become "electronic only" (cashless). The way to pay for these tolls is either by electronic toll payment method or Pay By Mail. Pay By Mail is for those who don't have the electronic discount program – their license plates get photographed and a bill is mailed to the owner. Commonly referred to as "video tolling" or "video billing", the rates for this payment method are higher to cover processing costs.

See *Appendix H* for a list of electronic-only toll roads.

All Pay By Mail and video toll rates are considered as "Cash" in PC*MILER toll rate calculations.

7.1 Turning On Toll Cost Calculation *(U.S. and Canada only)*

(PC*MILER/Tolls must be licensed and installed.) Toll costs can be calculated along with mileage, cost and time estimates when you generate a PC*MILER route with at least an origin and a destination using any available route type or option, including Hub routing.

To turn on toll cost reporting for the current route, select the Routes tab > *Options* > **Reporting Preferences** and make sure the **Show Toll Costs in Reports** option is checked; or for multiple routes, make sure this option is enabled in a route profile (see section 10.2). This option is turned on by default when PC*MILER|Tolls is installed.

To turn off the use of discount programs in toll calculations or to exclude reporting tolls related to individual discount programs, go to the File menu > *Application Settings* > **Tolls**. Click **Deselect All** to turn off discount programs, or uncheck the ones that you don't want applied, then click **Save**.
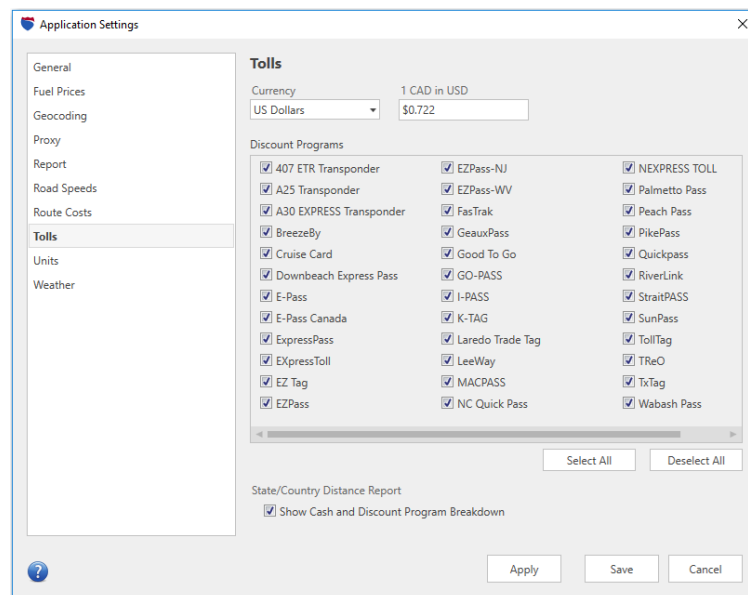
Application Settings Dialog, Tolls Tab

To switch to Canadian dollars as the currency for toll calculations, use the **Currency** drop-down list. The US Dollar/Canadian Dollar conversion rate can be customized by typing over the default rate.

NOTE: Settings in the **Tolls** tab not only affect PC*MILER, but also determine which discount programs will be in effect with the use of PC*MILER|Connect, PC*MILER|Spreadsheets, or PC*MILER|BatchPro to calculate tolls.

When toll calculations are enabled, you'll see a **Tolls** column in the route window. Toll fees are listed for each leg (not cumulative). For total cumulative toll costs, run a State Summary Report or Comparison Report (see sections 9.4 and 9.7).

Toll Calculation by Trip Leg in the Route Window

The default Tolls settings are:

- Toll calculation is enabled.
- Discount programs are applied.
- All discount programs are selected.
- Tolls are calculated in US Dollars.
- The Version 30 default conversion rate is USD/CAD = $1.00/$1.29

7.2 Customizing Toll Costs By Weight and Axle

Jurisdictions in the U.S. and Canada that have toll roads class their toll rates either by vehicle weight or by a vehicle's number of axles. Setting custom **Vehicle Dimensions** route options in PC*MILER enables toll cost reporting based on vehicle weight and number of axles.

The available toll rates by axle are from 2 (two axle dual rear wheel vehicles only) up to 14 axles, including multi-trailer rates and automobile routing. For toll rates categorized by weight, each toll road authority publishes its own definition of weight classes, and PC*MILER categorizes and reports these toll rates based on the published weight category and range provided.

For those who are new to the arena of toll cost reporting, the jurisdictions that charge toll costs by weight and those that charge by axle are identified below. This information is important to know if you intend to use PC*MILER to generate toll costs that are customized by weight and axle.

- **Jurisdictions Charging Tolls by Vehicle Weight:** MI, NJ, ON, PA

- **Jurisdictions Charging Tolls by Axle:** AK, AL, BC, CA, CO, DE, FL, GA, IL, IN, KS, LA, MA, MD, ME, MI, MN, MO, NB, NC, NE, NH, NJ, NS, NY, OH, OK, OR, PA, PEI, QC, RI, SC, TX, UT, VA, VT, WA, and WV

To enter the weight and/or number of axles for a vehicle either before or after stops have been entered for a route, select the Routes tab > *Options* > **Vehicle Dimensions** tab. Alternatively, a route profile can be created or edited with the options described below – see section 10.2.

Route Options Dialog, Vehicle Dimensions Tab

Only the weight, axle number and multiple trailer settings in this tab affect toll cost reporting. Enter these parameters as follows:

Weight

For all regions and truck types, weights of 1500 – 156,748 lbs. or 681 – 71,099 kgs. may be entered. See section 10.5.2 for more on vehicle weight. The default weight setting for all regions is **80,000 lbs**.

Axles

Select a number from the drop-down. The default is 5 axles. Note that 2 axle includes two axle dual rear wheel vehicles only.

Multiple Trailer (MT)

Check this option if the vehicle is a long combination vehicle with multiple trailers. (See Important Note below.)

> **IMPORTANT NOTE:** Twin trailers with 7 or more axles are not allowed on the Massachusetts Turnpike east of Exit 14. If you enter 7 or more axles and check "**Multiple Trailer (MT)**", PC*MILER will return a $0 toll rate for that section of roadway without a warning.

When done, click **Save** to apply vehicle dimension edits and then generate your route. PC*MILER will calculate the appropriate route and report the corresponding toll costs according to the vehicle dimensions you set.

If custom information is not entered in the **Vehicle Dimensions** tab, the default values will be used. The default values are based on a typical Class 8 vehicle with a weight of 80,000 lbs./36,287 kg. and 5 axles.

7.3 Time-Based Toll Cost Reporting

Prior to Version 25, PC*MILER calculated toll costs based exclusively on peak hour rates while factoring in vehicle dimension settings that affect those rates. Beginning in Version 25, when an arrival or departure time is entered for a route, truck-specific toll costs can be calculated even more precisely because time-of-day variations are factored into toll rates when and where they occur, including peak and non-peak tolls.

See Chapter 5, *Using ETA/ETD and Traffic Data,* for more on generating time-based routing.

> **NOTE:** Toll costs are always calculated in the local time as the planned route crosses the toll booth. By default, the date/time of the toll collection is also reported in that local time. To change this setting, select the File application menu > *Application Settings* > **Units** and use the **Time Zone** option to choose either *System* (your computer's time) or a specific time zone. The date/time of the toll collection will then be reported in the time zone you specified. Note that ETA/ETD displayed for each stop in a route window will also be affected by this setting change.

7.4 Tolls and Plaza Names in the Detailed Route Report

Toll costs are shown by trip leg in the Detailed Route Report. To generate this report, select the Routes tab > *Reports* > *Detailed Report* or press **F5** on your keyboard. For more on this report, see section 9.3.

To assist users in toll cost reconciliation, toll plaza names have been added to the database. Some plazas listed in this report have multiple sub-plazas at the same location, but PC*MILER assigns one name to all of them.

Abbreviated plaza names appear in the Detailed Route Report in a "Toll Plaza" column. If the Toll Plaza column is blank, either the agency does not have a transponder program or the agency has a transponder program but the toll plaza abbreviations used on that agency's invoices could not be determined at this time.

The format of the plaza names is as follows: the agency abbreviation, the entry plaza abbreviation, and the exit abbreviation. In cases where the entry and exit plazas are the same (barrier toll), the plaza abbreviation will be shown only once.

NOTE: If a Toll Discouraged route is run with toll calculation disabled and the route needs to use a toll road, the Detailed Route Report will still report toll miles and the associated cost for that leg of the trip.

Detailed Route Report

7.5 Toll Information in the State/Country Report

The PC*MILER State/Country Report shows total toll costs at each stop, by state, and by trip if any tolls were calculated. To generate this report, first run a trip, then press the **F6** key or select the Routes tab > *Reports* > *State/Country*.

To have this report include a breakdown of toll costs by the type of discount program applied, go to the File menu > *Application Settings* > **Tolls** and check **Show Cash and Discount Program Breakdown**, then click **Save**. This can be done before or after the Report is generated. Discount program information will appear in the state/country summary section at the bottom of the report, in the Tolls column as shown below.

State/Country Report Showing Toll Discount Breakdown (Print Preview)

NOTE: If a Toll Discouraged route is run with toll reporting disabled in the Route Options dialog or the active route profile and the route needs to use a toll road, the State/Country Report will still report toll miles and the associated cost for that leg of the trip.

7.6 Getting Toll Totals in the Comparison Report

The PC*MILER Comparison Report calculates total toll amounts, along with mileage and estimated time and cost, for two or more trips. To generate this report, click the **Comparison** button on the toolbar or press **F4** on your keyboard.

The two routes shown below in a sample report are identical except that the Toll Roads Discouraged route option was turned on for the bottom route (see section 10.3.2 or 10.4).

Toll Total for Each Trip

Route	Type	Origin	Destination	Distance	Cost	Hours	Tolls	Fuel	Other	Labor	Est. GHG
Route 1	Practical, Borders Open, U...	Dayton,...	Blooming...	745.7	956.79	12:1	129.01	241.66	149.14	436.98	2554.65
Route 1 -...	Practical, Toll Avoid, Borde...	Dayton,...	Blooming...	791.1	919.76	13:3	20.00	256.39	158.23	485.15	2710.36

Comparing Toll Costs in the Comparison Report

NOTE: This feature requires a purchased license for PC*MILER|Weather and an Internet connection, and is only available in the PC*MILER user interface. If PC*MILER is integrated with other systems, access to Weather features is available with an ALK Maps license.

With an installation of PC*MILER|Weather, PC*MILER users can visualize predicted weather patterns across the U.S. and Canada on the map through the use of radar, precipitation, and general alert layers. Additionally, a Weather Alerts Report is available that summarizes predicted weather alerts for a route.* This feature enables users to identify where a planned route is scheduled to pass through a predicted weather alert zone. Weather data is provided by Environment Canada (EC), U.S. National Weather Services (NWS) with data from the U.S. National Oceanic and Atmospheric Administration (NOAA), and AerisWeather.

* IMPORTANT: The predicted weather information provided should not be construed to mean that significant and/or hazardous conditions will occur, it should only serve as a notice that the event described is possible.

Weather alerts and weather patterns on the map reflect **current** conditions, which are updated every 30 minutes or less. Therefore, conditions that trigger an alert at the time a planned route is generated may not trigger that alert if the route is run again at a later time.

Weather reporting is enabled by default if PC*MILER|Weather is licensed and installed. To enable/disable weather reporting, select the File menu > *Application Settings* > **Weather** and check/uncheck **Enable Weather**.
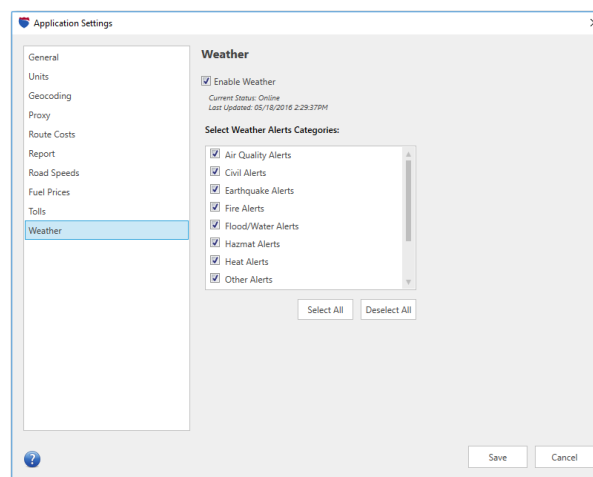
PC*MILER|Weather Features Enabled

You will see the *Current Status* of the connection to the weather feed and the date and time when the data was *Last Updated* below the **Enable Weather** check box. Weather data is refreshed each time the PC*MILER application is started, and then at 30-minute intervals or less until the application is closed.

If the Weather data feed is offline for any reason, the *Current Status* will show an error message.

Under **Select Weather Alerts Categories**, any weather alert categories that you don't want to receive alerts for or see on the map can be disabled. Uncheck an alert category to disable it.

8.1 Weather Display on the Map

To display weather data on the map, select the Map tab > *Weather* > and check one or more options (**Radar Layer**, **Cloud Layer**, or **Weather Alerts**). You will immediately see the type(s) of data you selected being drawn on the map.

Radar Layer – Displays current precipitation events using a gradation of colors that indicate rain and snow. This data does not contribute to the generation of alerts, it is a visual aid only.

Cloud Layer – Displays current patterns of precipitation (cloud formations) as they are received from AerisWeather. This data does not contribute to the generation of alerts, it is a visual aid only.

Weather Alerts – Displays colored polygons showing areas where a predicted weather alert has been issued by the U.S. National Weather Service or Environment Canada.
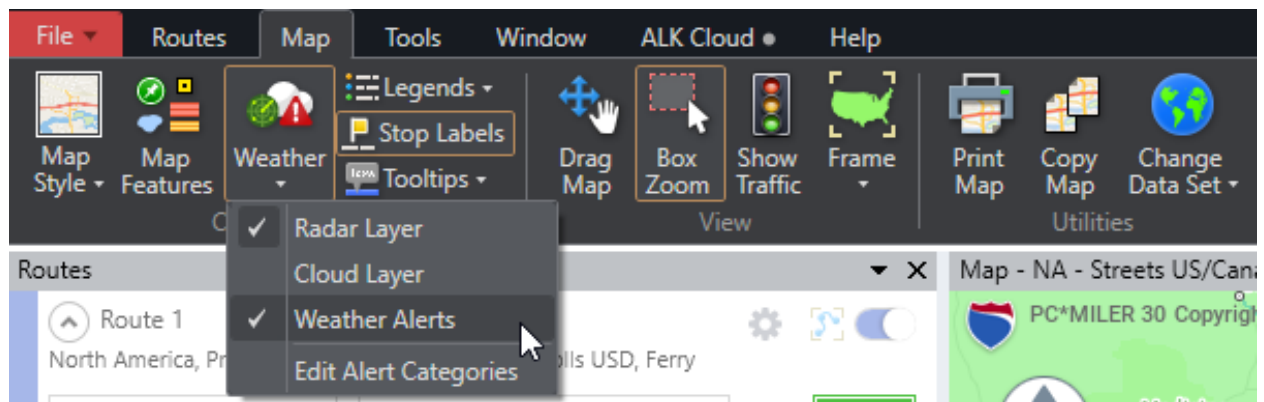
Weather Menu, Map Toolbar

Cloud and Radar Layers Enabled
(Precipitation patterns provided by Aeris Weather)

Radar Layer Enabled
(Weather patterns provided by Aeris Weather)

8.2 Alerts Legend & Tooltips on the Map

To see an Alerts legend on the map, select the Map tab > *Legends* and check **Weather Alerts**. To see a descriptive tooltip for an alert zone, place your cursor over a colored polygon on the map.

For the types of conditions included in each alert category, see *Appendix K*.

Tooltip for an Alert Area on the Map
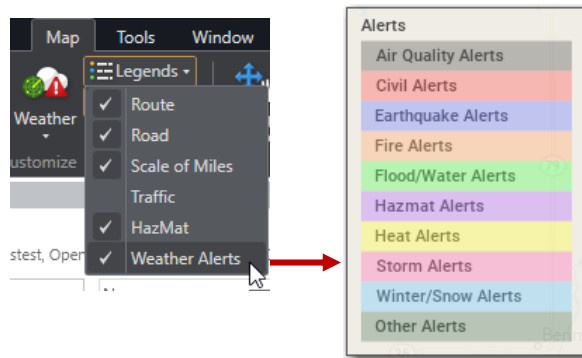
Turning on the Alerts Map Legend

8.3 Weather Alerts on Planned Routes

For weather alerts to be generated in the route window when you run a route, there are three requirements:

- Your PC must have an active Internet connection;
- The **Enable Weather** option must be turned on in the Application Settings dialog, or the **Enable Weather Analysis** option must be turned on in the Route Options dialog (see section 10.4); and
- An **Arrival/Departure** time must be set for the trip (see section 5.1).

When alerts are enabled as described above, a warning will appear on the stop list in the route window for any leg of the trip that travels through an active alert zone. Be aware that, because alerts are time sensitive and this feature requires you to set an arrival/departure time, an alert that appears on the map when a route is run may have expired by the time the destination is reached.
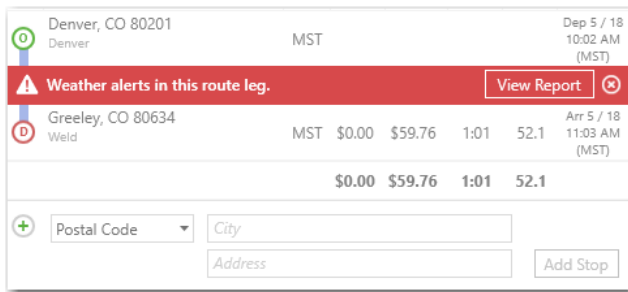
Weather Warning on a Route
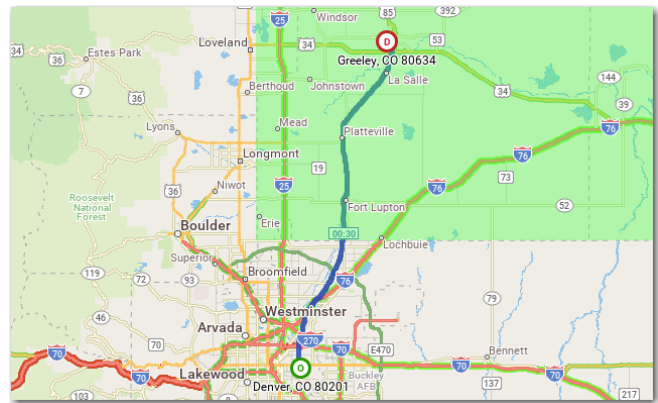
Affected Area on the Map

8.4 Weather Reports

Three ways to generate a Weather Report:

- Select the Routes tab > *Reports > Weather Report.*
- Click "View Report" in the route window when an alert is displayed.
- (Print only) Select the File menu > *Print Report > Weather.*

Weather reports provide detailed descriptions of all alerts generated along the route. For each alert, this report includes from left to right: the route leg, alert type, calculated entry and exit time into/out of the affected area, effective time, expiration time, and the certainty, severity, and urgency ratings.

Double-click an alert in a report to zoom to that area on the map. Remember that the alerts in the report may not include all areas on the map where weather warnings (shaded polygons) are in effect along the route. This is because the alert shown on the map may have expired by the time the planned route is due to travel through it. As shown in the report, each alert has a time window and expiration time.

Accessing a Weather Report and Alert Zone on the Map

Generating Reports

In addition to the mileage, time and cost information that is returned when a route is run, there are several additional route reports that PC*MILER can generate: Mileage, Detailed Route, State/Country, Driver's, Road Type, and Comparison. If PC*MILER|Weather is installed, a Weather Report is also available.

9.1 Report Windows

When a report is generated, it opens in a separate pane. You can control the location of reports within the PC*MILER application window using the *Report Location* and *Layouts* buttons in the Window tab.
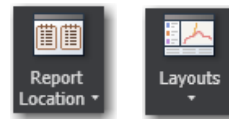
To float an individual report in its own window, right click the report title in the tab at the top of the report, then select "**Float**". To dock it, right click the report title again and select "**Dock**".

State/Country			Route	Miles	Hours	Interchange	Leg Miles	Leg Hours	Total Miles	Total Hours
Origin: 15295 Pittsburgh, PA, Allegheny 0.00										
PA		South	Grant St	0.3	0:00	+ Grant St Ramp	0.3	0:00	0.3	0:00
PA		Keep right	Ramp	0.4	0:01	+ Ramp I-376	0.7	0:02	0.7	0:02
PA		East	I-376 - Penn-Lincoln Pkwy	6.9	0:06	+ I-376 Exit 78A	7.6	0:08	7.6	0:08

Display Options for a Report Window

9.2 Mileage Report

When a route is run, mileage, time and cost information is returned in the route entry window. A Mileage Report can be printed that summarizes this information and also includes cumulative miles by trip leg and greenhouse gas estimates. Select the File menu > *Print Report > Mileage*.

This report won't appear on-screen, printing it is the only way to generate it.

9.3 Detailed Route Report

Four ways to generate a Detailed Route Report after running a route are:

- Select the route window gear button > *Reports > Detailed.*
- Select the Routes tab > *Reports > Detailed.*
- Press the **F5** key.
- (Print only) Select File menu > *Print Report > Detailed.*

Detailed Route Report

This report includes direction of travel, roads, interchanges, times and distances, stops, and toll costs (if PC*MILER|Tolls is installed and toll calculation is turned on). The report displays additional information depending on the options selected when the route was run.

> **TIP:** You can double-click a line in this report to zoom into that route segment on the map.

The columns from left to right in the Detailed Route Report give you the following information for each route segment: state/country, toll or free road, direction of travel, route (with exit number where available), distance, driving time, interchange point, cumulative distance and time for the trip leg, and cumulative distance and time for the whole trip. For each stop on the route, the on-duty status and duration is shown. (The default for these values is on-duty and 0 hours. Stop times and on-duty status can be set in the HOS Manager, see section 3.14.)

If PC*MILER|Tolls is installed and toll calculations are enabled, leg toll costs and the corresponding toll plazas will be shown in two columns on the far right.

NOTE: Due to the way PC*MILER identifies locations and calculates routes and distances, occasionally a toll barrier won't be reported in the Detailed Route Report. When this happens anywhere on a route, an alert will appear at the very bottom of the report stating that this has occurred. You can then check all route segments marked with a dollar sign to find the omission.

If ETA/ETD information was entered, there will be an additional **Stop Time** column to the far right. This column shows the estimated time of arrival at every stop and toll plaza on the route. If a target arrival time was entered, the estimated departure time from the origin will be shown. If a departure time was entered, that time will be shown at the origin. The column header for the Stop Time column will reflect the currently selected time zone (to set the time zone, go to the File application menu > *Application Settings* > **Units**).

A dollar sign (**$**) to the left of the directional column marks segments that are toll roads. Alerts such as height, weight, 53-Foot restrictions, and geofence warnings are noted where they exist, appearing before the pertinent road segment in the report. (See section 1.6.4 for more on 53-Foot restrictions in reports.)

At the point where a route begins to use a road segment that travels through a geofenced area, a warning like this will appear that includes the name of the road, the name of the geofence set, and the name of the individual geofence:

Warning * US-1 * : New Jersey : NewBrunswickNJ

If one of the Hazardous Material route types was used (PC*MILER|HazMat installation is required), the Detailed Route Report will include a **Restriction** column on the far right. Any restricted road segments on the route will be labeled with the appropriate hazmat restriction type in this column. PC*MILER uses these route segments in its calculations only if no other alternative is possible, or the alternative is extremely impractical. Routes designated as preferred for hazardous materials will <u>not</u> be indicated in the report.

Detailed Route Report With HazMat Restriction Column

9.4 State/Country Report

Four ways to generate a State/Country Report after running a route are:

- Route window gear button > *Reports* > *State/Country*
- Routes tab > *Reports* > *State/Country*
- Press the **F6** key
- (Print only) File menu > *Print Report* > *State/Country*

Route 1 : 18505 Scranton, PA to 50318 Des Moines, IA : No Stops
Miles: 1,017.1   Time: 16:15   Cost: $1,184.11
Truck Config: Weight: 80000lbs   Height: 13ft 6in   Length: 48ft 0in   Width: 96in   Axles: 5
North America, Practical, Borders Open, Use Local Streets, Discount Tolls USD, Ferry Distance

Stop	Leg Miles	Total Miles	Leg Cost	Total Cost	Leg Hours	Total Hours	Leg Tolls	Total Tolls	Leg Est.GHG	Total Est.GHG
18505 Scranton, PA, Lackawanna	0.0	0.0	0.00	0.00	0:00	0:00	0.00	0.00	0.0	0.0
50318 Des Moines, IA, Polk	1017.1	1017.1	1184.11	1184.11	16:15	16:15	68.28	68.28	3484.4	3484.4

State/Country	Total	Toll	Free	Ferry	Loaded	Empty	Toll($)
IA	173.2	0.0	173.2	0.0	173.2	0.0	0.00
IL	162.9	7.0	155.9	0.0	162.9	0.0	4.50
						Cash	4.50
						EZPass	4.50
						I-PASS	4.50
IN	152.7	107.6	45.1	0.0	152.7	0.0	29.28
						Cash	29.30
						EZPass	29.28
OH	236.1	218.9	17.2	0.0	236.1	0.0	34.50
						Cash	43.25
						EZPass	34.50
PA	292.1	0.0	292.1	0.0	292.1	0.0	0.00
US	1017.1	333.5	683.5	0.0	1017.1	0.0	68.28
TOTAL	1017.1	333.5	683.5	0.0	1017.1	0.0	68.28

Toll Costs and Applied Discounts

State/Country Report with Toll Information (Print Preview)
(PC*MILER|Tolls installation required for toll cost calculation)

The State/Country Report generates a table that summarizes mileage by state, province, or country traveled. It lists leg and total miles, cost, and time estimates in columns from left to right. Leg and total toll costs will also be shown if PC*MILER|Tolls is installed and toll calculation is turned on. The last two columns show leg and cumulative greenhouse gas estimates in pounds or kilograms of carbon dioxide equivalent per gallon/liter of fuel. A breakdown of the route by state/country and category is at the bottom of the report.

If PC*MILER|Tolls is installed and toll calculation is turned on, a breakdown of toll costs by the type of discount program applied is also available. Go to the File menu > *Application Settings* > **Tolls** and check **Show Cash and Discount Program Breakdown**, then click **Save**. You'll see the discount breakdown in the **Toll($)** column in the summary section.

9.4.1 Order of States in the State/Country Report

In the State/Country Report, states and countries are displayed in alphabetical order by default. To display them in the order they occur along the route as in a driver log, go to the File menu > *Application Settings* > **Repor**t and choose **Route** under **State/Country Report Order**.
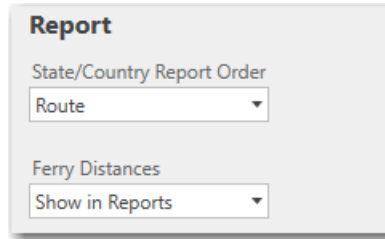
9.5 Driver's Report (Driving Instructions)

Three ways to generate a Driver's Report after running a route are:

- Route window gear button > *Reports* > *Driver's*
- Select the Routes tab > *Reports* > *Driver's*
- (Print only) File menu > *Print Report* > *Driver's*

The Driver's Report provides easy-to-read detailed driving instructions with turn directions and distance between turns, and driving times that include the duration of each stop if durations were defined. This report includes all alerts that appear in the Detailed Route Report.

If the route was run using real-time traffic data and the departure time for the trip is within 15 minutes of the current time, the **Delay** column just to the right of the **Time** column identifies delays caused by the current traffic conditions on the first 15 miles of the trip.

Driver's Report (Print Preview)

9.6 Road Type Report

Three ways to generate a Road Type Report after running a route are:

- Route window gear button > *Reports* > *Road Type*
- Routes tab > *Reports* > *Road Type*
- (Print only) File menu > *Print Report* > *Road Type*

The Road Type report provides a distance breakdown by PC*MILER road category for the active trip. See section 10.1.6 for descriptions of road types. This report does not include total mileage per route. If PC*MILER|Energy is licensed and installed, the Energy Roads category will be included..

18505 Scranton, PA to 50318 Des Moines, IA : 1 Stop
Miles: 1,032.7   Time: 16:09   Cost: $1,524.40
Truck Config: Weight: 80,000lbs   Height: 13ft 6in   Length: 48ft 0in   Width: 96in   Axles: 5
North America, Practical, Borders Open, Highway Only, Ferry Distance, Discount Tolls USD

Stop	Leg Miles	Interstate	Interstate - No Ramps	Divided	Primary	Ferry	Secondary	Ramp	Local	Toll Road
Scranton, PA 18505	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Toledo, OH 43601	472.3	464.8	0.0	0.0	2.2	0.0	0.0	4.1	0.0	146.1
Des Moines, IA 50318	560.4	554.4	0.0	0.4	2.5	0.0	0.0	4.4	0.0	207.0
Total	1032.7	1019.2	0.0	0.4	4.7	0.0	0.0	8.5	0.0	353.1

Road Type Report (Print Preview)

9.7 Comparison Report

Three ways to generate a Comparison Report when two or more generated routes are active:

- Routes tab > *Comparison Report*
- **F4** key
- (Print only) File menu > *Print Report* > *Comparison*

The Comparison Report lists the total mileage, cost and time estimates for all open routes. To create this report, select the Routes tab > *Comparison Report* or press **F4** on your keyboard **when two or more generated routes are active**.

Columns from left to right show trip totals for miles, estimated cost, estimated hours, toll costs (if PC*MILER|Tolls is installed and toll calculation is turned on), estimated fuel cost, estimated cost of labor, estimated miscellaneous costs, and estimated greenhouse gas emission (these last four columns are not shown in the resized report window below). Values that affect cost, time, toll and greenhouse gas estimates are set in the File menu > *Application Settings* dialog.

Comparison Report, Practical vs. Shortest Routing (Print Preview)

NOTE: The Comparison Report lists only the origin and destination of each route. If there are stop-off points in one route and no stop-offs in another, the mileage discrepancy between these routes could be large. Check the stops in the route window if you see differences in mileage that are larger than expected.

9.8 Weather Report

(PC*MILER/Weather license and an Internet connection are required.) Weather Reports are available if Weather features are enabled – see Chapter 8.

9.9 Font Size and Page Layout

To see a preview of how the report will look when it is printed, check **Show Print Preview** in the upper left corner of the report. The Print Preview view will be displayed along with a toolbar for editing the page layout and font size. Place your cursor over any button on the toolbar to see a tooltip that briefly describes what that button is for.

To change the font size in the active report, use the *Font Size* drop-down on the toolbar. For adjustments to the page layout, there are six buttons that control formatting (portrait vs. landscape) and magnification.
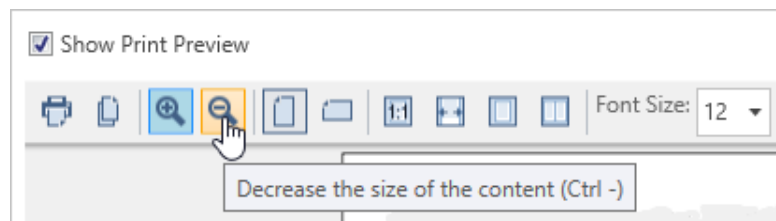
To hide columns or change their position or width, right click on any column header in a report and click on "**Column Chooser**". See section 3.6.3 on how to use the Column Chooser.

9.10 Printing Reports

All PC*MILER reports can be printed. To print a report, first check **Show Print Preview** in the upper left corner.

A toolbar for editing will display and you'll be able to see what the printed copy will look like. To print, do one of the following:

1. Click the **Print** button (upper right corner);

2. Click the Print icon on the toolbar; or

3. Press **Ctrl+P**.

To directly print a report without first generating it in its own window, select the File application menu > *Print Report* > and choose a report type.

9.11 Saving and Copying Reports

PC*MILER reports can be saved to disk – choose *Save Report to File* from the File application menu. In the Save Report dialog, select the folder where the file will be saved and enter a file name in the **File Name** field. Click **OK** to save.

In addition, PC*MILER reports can be copied to the clipboard for use with other Windows® programs such as Microsoft® Word. To copy and paste a report:

1. Select the report in the Reports window.

2. Check **Show Print Preview** in the upper left corner.

3. In the toolbar that displays, click the Copy icon.

4. In the application you are copying to, press **Ctrl+V** to paste.

NOTE: With some reports you may get better results if you save the report as a .CSV (comma separated value) file and then import that file into your target application. This may be especially true for the Detailed Route report with its many columns. To save the active report, select the File application menu > *Save Report to File* and select ".csv" as the file type.

$\mathbf{P}$C*MILER chooses routes by minimizing a cost equation that combines distance, certain factors times distance, and certain fixed factors. A PC*MILER user can choose between versions of the equation and numerical values by setting different route options.

General options such as route type, vehicle dimensions, and hazmat* designations affect which route is chosen. Cost/time, road speed and tolls* route options affect time/cost and toll data that is returned when a route is generated, but do not affect which route is chosen. *(* These options are available only if the related data modules have been purchased and installed.)*

Route types and options can be changed using the **Application Settings**, **Route Profiles**, and **Route Options** dialogs.

10.1 Application Settings

The application settings described in the following sections 10.1.1 – 10.1.11 affect all PC*MILER route calculations and determine the behavior of some features in the application. Application settings have a global effect on routes, maps and/or reports, and are likely to be changed infrequently.

Choose File menu > *Application Settings* to open the Application Settings dialog. Select a category on the left to see its options on the right. Click **Apply** to save your edits and keep the dialog open, or **Save** to save changes and close the dialog.
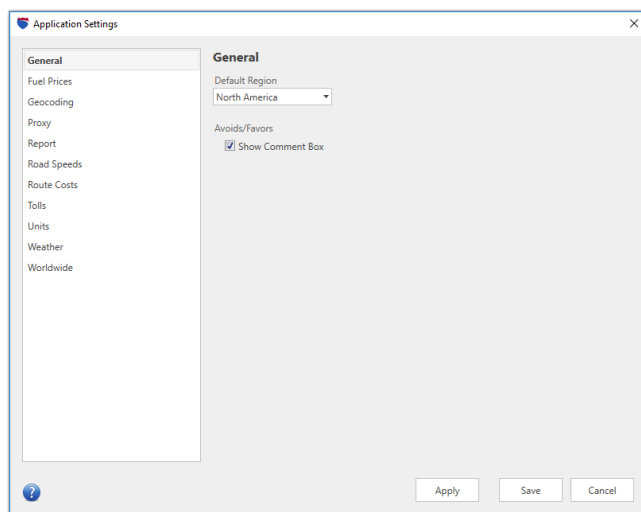
Application Settings Dialog

10.1.1 General

Default Region
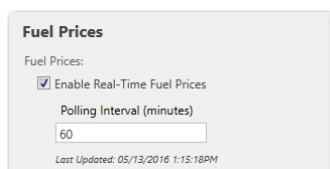
North America is the only available region with the base version of PC*MILER.

If PC*MILER|Worldwide or DTOD Data is installed, North America is the default region and other regions can be selected: click the down arrow and select a region from the drop-down. Available worldwide regions are: **Africa**, **Asia**, **Europe**, **Middle East, Oceania** and **South America**. The active region is displayed at the top of each new route window.

Avoids/Favors

Uncheck *Show Comment Box* to disable the comment box that pops up each time an avoid/favor designation is created on the map. This option is on by default.
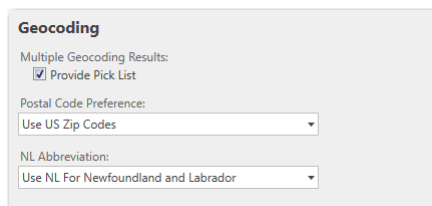
10.1.2 Fuel Prices

*(An installation of PC*MILER|Streets and an Internet connection is required.)* This option enables a real-time fuel price feed that pulls in current diesel fuel prices at the entered **Polling Interval**. The fuel feed is enabled by default with a refresh every 60 minutes. Users can enter a different polling interval or uncheck the option to disable it. Fuel prices are shown in a pick list of matches when the user searches for Fuel Stops in a route window – see section 3.13.

10.1.3 Geocoding (Stop Entry Processing)

Multiple Geocoding Results

The *Provide Pick List* option is checked by default. During stop entry, this option provides a pick list of postal codes if there is more than one instance of the entered location in the database. The order in which locations are listed in the pick list is based on such factors as population and geographic centrality, putting the most

densely populated cities at the top. When this option is not checked, PC*MILER will select the first match that is found in the database.

Postal Code Preference
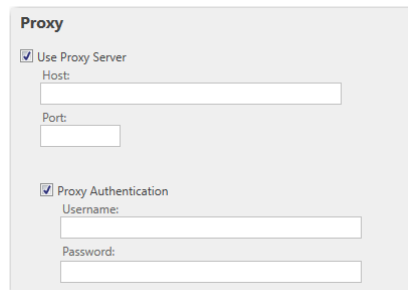
Use the drop-down to select how PC*MILER handles Mexican and U.S. locations that have the same postal code:

- *Use Default US Zip Codes:*
  This option is selected by default. The default U.S. ZIP code will be returned. Mexican codes cannot be entered.
- *Use Default Mexican Zip Codes:* The default Mexican postal code will be returned. U.S. codes cannot be entered.
- *Use Default US and Mexican Zip Codes:* The default U.S. ZIP code will be returned. However, Mexican codes can be entered with "EM" as the state abbreviation; for example, "50510, EM".

NL Abbreviation

Choose whether to *Use NL For Newfoundland and Labrador* in Canada (this option is selected by default) or *Use NL For Nuevo Leon* in Mexico.
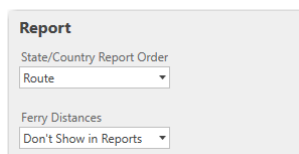
10.1.4 Proxy

See section 2.7, *Proxy Setup for Internet Access.*

10.1.5 Report

State/Country Report Order

Choose whether State/Country reports will have states/countries listed in *Route* order as in a driver log, or *Alphabetical* order by state/country. *Alphabetical* is the default setting.

Ferry Distances

The *Show in Reports* option includes ferry distances in mileage and cost calculations. The setting does not affect the actual route on the map and travel time is not affected. Note that the "Total" column of the State/Country report always includes ferry distances, even if this option is turned off. By default, *Show in Reports* is selected.

10.1.6 Road Speeds

NOTE for PC*MILER|Energy Users: If PC*MILER|Energy is installed, an "Energy" road class will be listed in the Road Speeds tab. Energy roads can be customized by state.

Vehicle Type

Truck is the default vehicle type. Choose *Automobile* to view or change the road speeds used in van/automobile route calculations.

NOTE: When PC*MILER|Traffic data is used for a route, it will override these road speeds. Also note that setting a governor (maximum) speed in the Route Options dialog or current route profile will override any speeds set here that are above the governor speed.

PC*MILER time estimates for a route are computed by summing up the estimated time traveled on each road segment on the route, plus an added stop-off time for each stop along the route if stop durations were set in the HOS Manager.

Each PC*MILER road class has two average road speed parameters assigned to it, one for **Rural** and one for **Urban**. Spreading the estimated average speed over the various road classes gets a more accurate estimate of the total time traveled based on the quality of the road used. See descriptions of road classes below.

To enter your own custom road speeds, first select a jurisdiction from the pick list of jurisdictions, then enter your new road speed(s) for each road class. To apply your edits for one jurisdiction to all jurisdictions, click **Update All Road Speeds**. Click **Apply** to apply your edits to the currently open route, or **Save** to save them for future use.

Road speed changes will affect time and cost estimates in route calculations. To restore all road speeds to the PC*MILER default settings, click **Reset All to Default**.

To see PC*MILER default road speeds for jurisdictions in all world regions, see *Appendix F*.

PC*MILER ROAD CLASSIFICATIONS

Interstate Highways	• The primary function of these roads is to move high volumes of vehicular traffic over medium to long distances at high speeds • Can be accessed only via access ramps
Major Highways	• Major arteries that move heavy volumes of traffic at moderate speeds • Can be limited access in some areas but may also offer access from local roads • Usually have a barrier or median that prevents movement between lanes of opposing traffic • Medians may have crossovers that are part of the normal traffic pattern • Left turns are often restricted, both off of the highway and onto the highway • Usually multi-lane • Many but not all U.S. highways are in this class
Primary Highways	• Move significant volumes of traffic at moderate speeds • Most state roads fall into this class
Secondary Roads	• These roads move moderate volumes of traffic over short to moderate distances • Carry vehicles from local roads to higher class roads
Ramp	• A connecting road leading on or off of a main road or highway
Local Roads	• Function is to provide access to homes and properties
Ferry	• Ferry routes (boarding/exit time not included)
Energy	• Roads that lead in or out of well sites and other facilities *(requires a PC*MILER/Energy license and installation)*

10.1.7 Route Costs

Route Costs

Greenhouse Gases	22.20	*(lbs/gallon)*
Fuel Cost per Gallon	$2.10	

	Loaded	Empty
Miles per Gallon	6.48	6.48
Fuel Cost per Mile	$0.32	$0.32
Other Cost per Mile	$0.20	$0.20
Labor Cost Per Hour	$35.85	$35.85

PC*MILER calculates a total cost for each generated route. This cost estimate is determined by multiplying a dollar amount per mile by the number of miles. In the Route Costs tab, the trip costs that go into the dollar amount per mile have been broken out into fuel costs, labor costs, and "other" maintenance or miscellaneous costs. For information purposes only, a greenhouse gas emissions value is also included.

You will see these values reflected in the columns of the Comparison report. The greenhouse gas estimate also appears in the State Distance Distance report.

Editing the Route Costs options will affect the trip costs shown in the route window and in reports when a trip is generated.

Greenhouse Gases

Enter the pounds per gallon or liter emissions as CO_2 equivalent, or use the default values. Leg and total greenhouse gas (GHG) emission estimates appear in the State/Country Report, and a total GHG estimate appears in the Comparison Report. The default settings* for all world regions are:

- Per Gallon: 22.20 lbs.
- Per Liter: 5.86 lbs.

* These default settings are based on values for North America that were provided by the U.S. Environmental Protection Agency (EPA). For more information, see http://www.epa.gov/otaq/climate.

Fuel Cost Per Gallon (or Liter)

(To switch between gallons and liters, use the Application Settings *Units* tab, see section 10.1.9.) All world regions have the same default value for fuel cost, depending on the unit of measure, as follows:

- Per Gallon: $2.10
- Per Liter: $0.55

Miles (or Kilometers) Per Gallon (or Liter)

(To switch between miles and kilometers, use the Application Settings *Units* tab, see section 10.1.9.) Default values are:

- Miles Per Gallon (Loaded or Empty): 6.48
- Kilometers Per Gallon (Loaded or Empty): 10.43
- Miles Per Liter (Loaded or Empty): 1.71
- Kilometers Per Liter (Loaded or Empty): 2.75

Fuel Cost Per Mile (or Kilometer)

These fields are for reference only and not editable. Values are based on the Fuel Cost Per Gallon/Liter and MPG/MPL, and are used to calculate the fuel cost total that appears in the Comparison Report.

> **IMPORTANT:** The PC*MILER fuel costs that are calculated when you run a route may vary slightly from what you would get by simply multiplying the fuel cost per mile/kilometer times the number of miles. This is normal and expected, because PC*MILER calculations use internal values that have greater precision than the values you see on your screen. For example, a trip between two street addresses in Boynton Beach and Doral in Florida is 67.1 miles, with a fuel cost of $.43/mile. PC*MILER will calculate a total fuel cost of $28.81 for the trip rather than $28.85 (67.1 times .43).

Other Cost Per Mile (or Kilometer)

Default values for miscellaneous costs are:

- Other Cost Per Mile (Loaded or Empty): $.20
- Other Cost Per Kilometer (Loaded or Empty): $.12

Labor Cost Per Hour

The default value is:

- (Loaded or Empty): $35.85

10.1.8 Tolls

(PC*MILER/Tolls must be licensed and installed.)

Currency

Sets the US Dollar/Canadian Dollar currency conversion rate. This option can be edited. The default rate is $1.00 USD/$1.29 CAD.
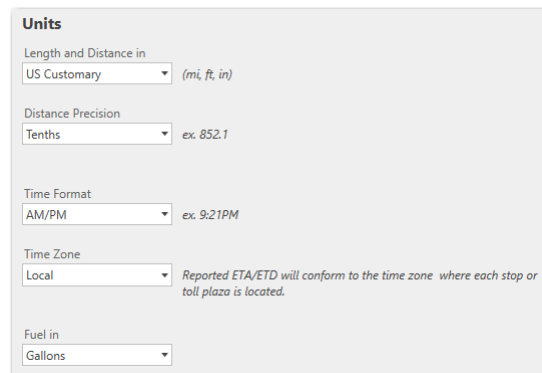
Discount Programs

All available toll discount programs are listed and enabled by default. To disable all discount programs, click **Deselect All**, or uncheck the programs to exclude. (To completely disable toll cost calculations, turn off *Show Toll Costs in Reports* in the Route Options or Profile Options dialog > **Reporting Preferences** tab.)

State/Country Distance Report

This option generates a breakdown of toll costs by discount program in the State/Country Distance Report and is unchecked by default.

10.1.9 Units

Length and Distance in

Select the units of measure to use for route calculations and reports – *US Customary* (miles, feet, inches) or *Metric* (kilometers, miles). Affects trip costs, average road speeds, and distance calculations shown in reports and route windows. The default value is *US Customary.*

Distance Precision

Choose how many decimal points will be calculated and displayed for distances – *Tenths*, *Hundredths,* or *Thousandths.* Affects distance calculations in route windows and all reports that include mileage. The default value is *Tenths.*

Time Format

Choose whether times of day should be displayed in *AM/PM* or *24 Hours* ("military") format; e.g. 3:20 PM or 15:20. This setting affects reported ETA/ETD. The default value is *AM/PM*.

Time Zone

Options are *Local*, *System*, or a specific time zone. This setting affects reported ETA/ETD. It does not affect how dates/times are calculated. See section 5.1, *Route Generation With ETA/ETD*. The default value is *Local*.

Fuel in

Select *Gallons* or *Liters* for fuel reporting. Affects trip costs and distances shown in reports and route windows. The default value is *Gallons*.

10.1.10 Weather
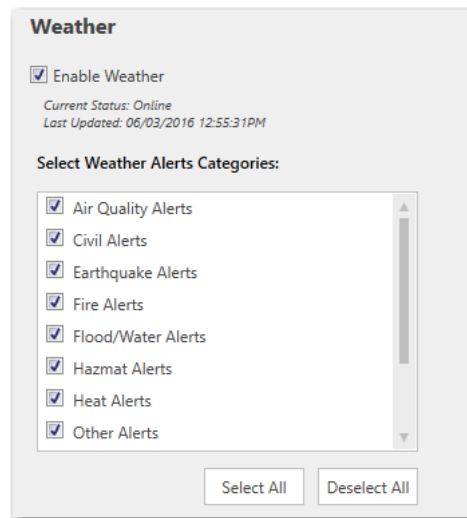
(PC*MILER|Weather must be licensed and installed, and an Internet connection is required for weather reporting.)

Weather

The *Enable Weather* setting enables/disables all weather reporting. The current online/offline status and time of the last weather update is displayed under the check box. When enabled, weather conditions are updated at least every 30 minutes. To see weather conditions on the map, select the Map tab > *Weather* in the PC*MILER application window.

Select Weather Alerts Categories

Select which categories of weather alerts will be received. Affects warnings in route windows, map displays, and weather reports. See *Appendix K* for the alert types included in each category.

See Chapter 8, *Weather Information and Alerts* for descriptions of all the Weather features available with a subscription to PC*MILER|Weather.

10.1.11 Worldwide
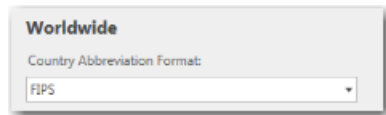
Country Abbreviation Format

(PC*MILER/Worldwide or DTOD Data must be licensed and installed.) When entering stops on a route in a region other than North America, worldwide country abbreviations can be entered using either FIPS 2-character, ISO 2-character, ISO 3-character, GENC 2-character or GENC 3-character codes. Select a format that will be used from the drop-down. FIPS codes are accepted by default. For a list of worldwide country abbreviations in different formats, see *Appendix D.*

10.2 Using Route Profiles

VERY IMPORTANT! Please Be Aware. When using a route profile, the profile must be selected for a route **before all other options**. A route profile overrides any other option set for the route, including an ETA/ETD.

PC*MILER's route profiles enable you to create and save comprehensive sets of custom routing options and quickly apply them to a route. Using profiles can help ensure that your frequently used options are correctly and consistently used when generating routes. A profile can be applied to individual routes, or globally to all new routes using a Default profile. Route profiles can be created, edited, deleted, and designated as favorites, with the exception of the Default profile which can be edited but not deleted.

To begin working with route profiles, select the Routes tab > *Profiles* to open the Manage Profiles dialog:
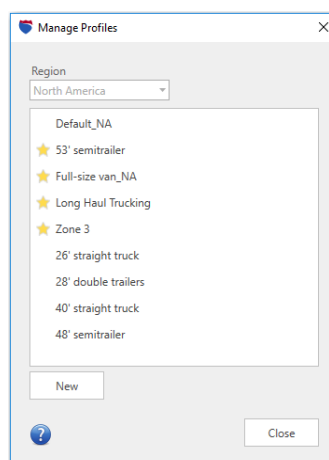
Manage Profiles Dialog

Off the shelf, PC*MILER applies a Default profile to each new route that includes options suitable for 48 foot semi-trailer trucks in North America and provides several other sample profiles suitable for different vehicle types. The default 48 foot options are the same standard default settings that were historically applied to PC*MILER routes. These default values can be edited by the user to be more reflective of the equipment used in the field, e.g. light, medium-duty and/or heavy vehicles; but as stated above, the Default route profile can be edited but not deleted.

10.2.1 The PC*MILER Default Route Profile

PC*MILER is shipped with a default route profile suitable for 48 foot semi-trailer trucks in North America that applies the options listed below to each new route. The PC*MILER Default_NA route profile can be edited but not deleted.

- Route Type: Practical
- Vehicle Type: Truck (48 ft.) 80,000 lbs. 5-axle
- Dimensions: L = 48 ft. H= 96 ft. or less W= 13 ft. 6 in.
- Toll Roads: Allowed
- Ferries: Allowed
- Governor (Maximum) Speed Limit: Disabled
- Hazardous Materials: None
- Road Network: None
- International Borders: Open
- Custom Roads: Ignore Avoid/Favors
- Elevation: Any
- Roads: Highway only*
- Size and Weight Restrictions: Use
- Hub Routing: Disabled
- Tolls: Calculate tolls and use discount programs *(PC*MILER|Tolls required)*
- Weather Alerts: Disabled *(PC*MILER|Weather required for alerts)*

* The default for this option is Highway & Streets if PC*MILER|Streets, PC*MILER|Energy or PC*MILER|TripDirect is installed.

10.2.2 Creating a New Profile

To create a new profile:

1. Open the Manage Profiles dialog (Routes tab > *Profiles*).
2. Click **New**.
3. Enter a **Profile Name** at the top of the Profile Options dialog.
4. Set your options (see 10.3, *Route Profile Options*).

5. Click **Save**.
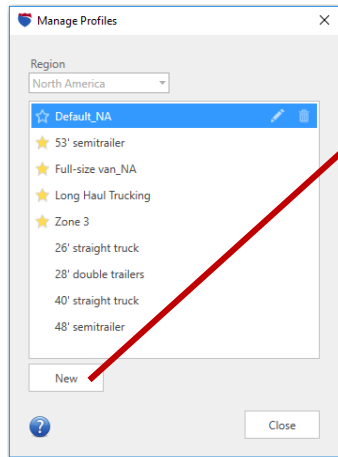
Manage Profiles Dialog
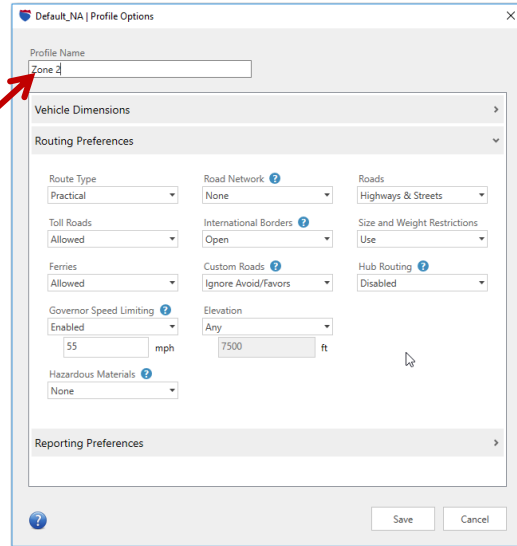
Profile Options Dialog

10.2.3 Editing an Existing Profile

:Initially the Manage Profiles dialog will include six sample profiles and the *Default* profile at the top of the list. To edit an existing profile:

1. Open the Manage Profiles dialog (Routes tab > *Profiles*).

2. In the list of profiles, click the one you want to edit.

3. Click the pencil icon.

4. Set your options (see section 10.3, *Route Profile Options*).

5. Click **Save**.
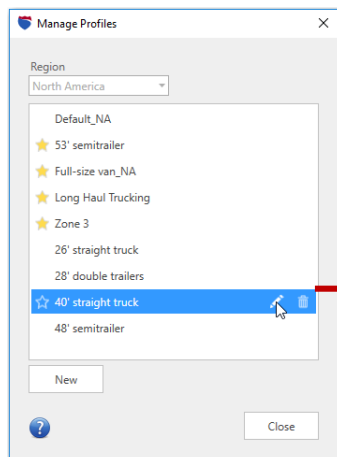
Manage Profiles Dialog
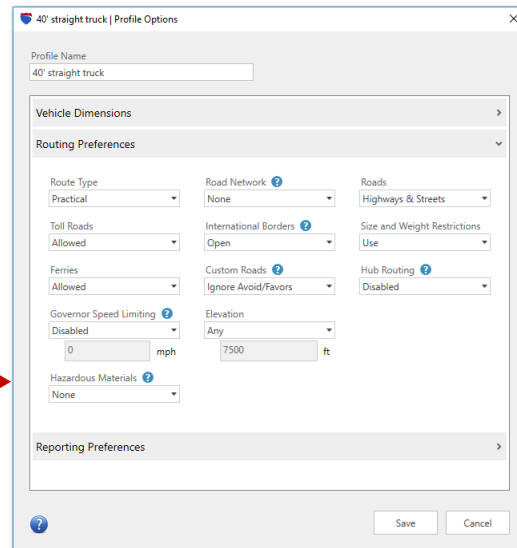
Profile Options Dialog

10.2.4 Managing Route Profiles

In the Manage Profiles dialog, users can create and edit a virtually unlimited number of profiles. The list of profiles becomes scrollable when it outgrows the area of visibility.

To designate a favorite, select it on the profile list and click the star to the left of the profile name. The star will turn yellow, and the favorite will be moved to the top of the list under the Default profile.

To remove a profile's favorite status, click the yellow star.

Favorites profiles can be quickly accessed using the *New From Profile* drop-down in the Routes tab. The order of profiles on this menu will be as follows:
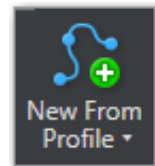
- The Default profile is always at the top.
- Favorites are listed under the Default profile in alphabetical order.
- All other profiles are listed under the favorites in alphabetical order.

To **delete** a profile, select it on the list and click the trash can to the right.

10.2.5 Selecting a Profile To Use For a Route

REMEMBER! When using a route profile, the profile must be selected for a route **before all other options**. A route profile overrides any other option set for the route, including an ETA/ETD.

There are two ways to select a route profile for a route:

1. Select a profile from the drop-down in the route window **before selecting any other option for the route**. Menu options will include the Default profile and all profiles that are designated as favorites in the Manage Profiles dialog.
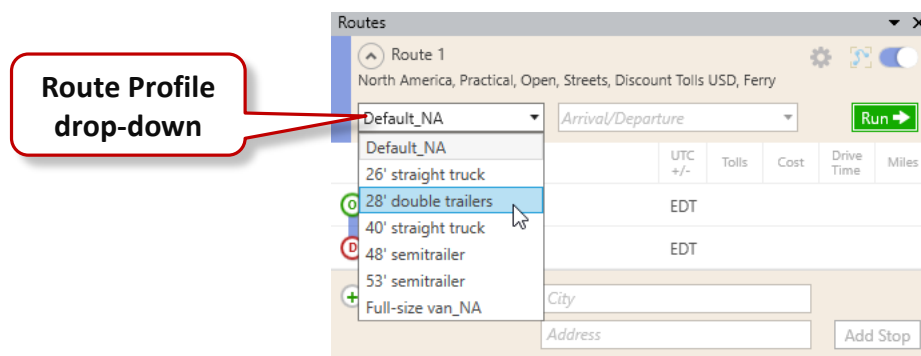
2. Select the Routes tab > *New From Profile* and choose a profile. A new route window will open with that profile selected.
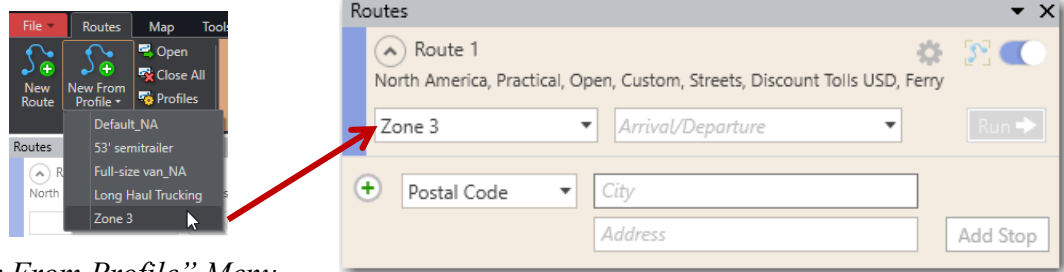
"New From Profile" Menu

10.3 Route Profile Options

The Profile Options dialog opens when you choose to edit or create a route profile from the Manage Profiles dialog. The tabs in this dialog are accordion style – click on each tab to see its options.

> **NOTE for Users on a Workstation:** Some options in the Profile Options dialog may not be accessible if you don't have permission to edit them.

10.3.1 Vehicle Dimensions

See section 10.5, *Using Custom Vehicle Dimensions.*

10.3.2 Routing Preferences
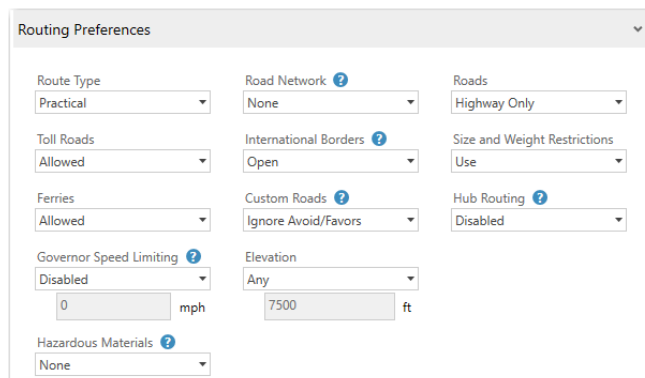
Route Type
See section 1.6, *PC*MILER Route Types,* for descriptions. Defaults to *Practical.*

Toll Roads

Select *Allowed* to use toll roads on routes, or *Discouraged* to only use a toll road where necessary to avoid long, impractical detours. See section 1.6.5 for a description of Toll Discouraged routing. Default value is *Allowed.*

Ferries

Select *Allowed* to use ferries on routes, or *Discouraged* to only route on a ferry where necessary to avoid long, impractical detours. Default value is *Allowed.*

Governor Speed Limiting

Select *Enabled* to use a maximum road speed in route calculations, then enter a custom value or use the 55 mph default. This speed overrides all other speed values for a trip when those speeds are higher than the governor setting.

For example, PC*MILER's default average road speed on Interstates is set to 65 mph, which directly affects a trip's travel time and ETA calculation. However, XYZ Trucking has a governor speed of 55 mph on any type of road. XYZ Trucking wants their governor speed factored into PC*MILER when it computes an ETA and sets the governor speed to 55 mph. In this scenario:

- for link A, the existing speed is 35 mph and PC*MILER's ETA calculations use 35 mph for that link;

- for link B, the existing speed is 60 mph and PC*MILER's ETA calculations use 55 mph for that link.

The use of a governor speed limit can help you more accurately calculate drive times and ETA's in PC*MILER, publish ETA's from PC*MILER to customers with more confidence, and calculate a more accurate HOS-planned route if desired. By default, governor speed limiting is *Disabled.*

NOTE: Setting a governor (maximum) road speed as a Route Option or in a route profile can alter the route calculated using the **Fastest route type**. A lower governor speed could result in a shorter route distance and more lower classed roads being used (see section 10.1.6 for road classifications).

Hazardous Materials

*(Visible only if PC*MILER/HazMat is licensed and installed.)* See Chapter 13, *Hazardous Material Routing,* for more details on PC*MILER hazmat route types and road categories. The default route type is *None*.

Road Network

(U.S. only) Select *State + National Network* to favor the US Federally designated National Network (primary Interstates with reasonable entry/egress points up to 1 mile off the Interstate) and state-designated extensions to the National Network (additional highways and supporting roads any distance off the Interstate, as determined by individual states).

The National Network is a U.S. government-designated system of highways originally established by the Surface Transportation Assistance Act of 1982 (STAA). The State + National Network option also incorporates roads that permit 53' trailers or twins. This option will calculate routes that stay on the National Network to the maximum extent possible. Given that many areas are not directly served by the National Network, the origin and stop-offs on a route may not be on the Network. See section 1.6.4 for a more detailed description of State + National Network routing. The default value here is *None.*

International Borders

Select *Closed* to minimize the number of international border crossings. For example, if all your stops are in the "lower 48" United States, the resulting route will stay in the United States even though the most practical or shortest route would normally involve some Canadian mileage. The *Open* option ignores international boundaries in generating the best route. Borders are open by default.

Custom Roads

Select *Use Avoid/Favors* to apply all user-designated avoid/favor road preferences to route calculations, including geofences, truck restriction overrides, and hazmat permit overrides. User-designated road preferences won't be used unless this option is selected. Does not affect via points or routes that have been dragged onto another road on the map. See section 12.1, *Picking Roads to Avoid or Favor,* to create custom avoid/favor preferences.

Elevation

Select *Discourage Above* then enter an elevation in feet to set a customized limit on the elevation of the roads a route will use. Elevations at or above this height will be avoided on a route unless 1) it is extremely impractical to do so; or 2) a stop or destination on the route is located at the higher elevation. No warnings are issued when a road that exceeds the elevation limit must be used. Elevations are from the National Elevation Data produced by the U.S. Geological Survey.

Roads

(PC*MILER|Streets is required for street-level routing.) The *Highway Only* option is selected by default <u>except</u> when PC*MILER|Streets, PC*MILER|Energy and/or PC*MILER|TripDirect is licensed and installed. The Highway Only option calculates routes using an air distance from the midpoint of the truck-usable highway segment that is nearest to the destination postal code or city/state. Routes to stops that include a street-level address are calculated to the truck-usable highway-level road that is closest to the entered address. This functionality matches the base PC*MILER highway product.

When *Highways & Streets* is selected, PC*MILER calculates the route and driving distance using local streets between the nearest truck-usable highway segment and the stop. All stops, whether they contain a street-level address or not, clean up via the shortest air distance to the nearest road (highway or street level). This distance may appear as "Local" in the Detailed Route report.

Size and Weight Restrictions

Select **Override** to generate routes that waive truck restrictions pertaining to specific sizes and weights, but that continue to avoid truck-prohibited and truck-discouraged roads. When this option is active, all height, length, width and weight restrictions will be overridden. If a route uses roads that have any of these types of restrictions, the Detailed Route Report will list them. This allows you to determine the largest or heaviest vehicle you can assign to drive that route.

When **Use** is selected, PC*MILER routing will avoid truck-prohibited and truck-discouraged roads, as well as truck-restricted roads that pertain to the size and weight set in the current vehicle dimensions or profile.

> **NOTE for PC*MILER|Streets Users:** An error message will appear if you attempt to enter an address that is on a truck-prohibited road.

Below is a table showing the North American states/provinces that have a jurisdiction-wide weight limit, with exceptions listed.

State/ Province	Weight Limit*	Exceptions	Ref.
SK	76,038 lb (34,500 kg)	- 87,058 lbs (39,500 kg) on designated primary highways year-round and other designated primary highways for 9 months/year, and a maximum distance of 15 kilometers on any secondary provincial [not including municipal] highway or provincial road - 91,466 lbs (41,500 kg) on most roads in winter, i.e. Nov16-Mar14 (except for certain restricted exceptions) - special restrictions on certain listed highways	(1) (2)
MB	76,038 lb (34,500 kg)	- 82,650 lbs (37,500 kg) on designated "A1" highways - 87,058 lbs (39,500 kg) on designated "RTAC" highways - Winter weights higher in some cases - "If a delivery needs to be made off of a designated truck route the vehicle is allowed to stray from the truck route via the **shortest distance** to its destination. Once the delivery has been completed the vehicle must **return to the truck route the same way**"	(3) (4)

* For the PC*MILER default vehicle configuration: 5-axle tractor/48' long semitrailer combination.
Higher limits > 80,000 lbs apply in SK & MB for 6+ axles.

Ref:
1. http://www.highways.gov.sk.ca/trucking/
2. Saskatchewan Vehicle Weight and Dimension Regulations, 1999, page 17, Sec 12(1)(KK)
3. http://www.gov.mb.ca/mit/mcd/mcpd/pdf/normalloading.pdf & http://www.gov.mb.ca/mit/mcd/mcpd/twlm.html
4. Email from Dwight Solon, Director, Motor Carrier Enforcement Programs, Province of Manitoba, 11/03/08

> **SAFETY NOTE:** For winter roads in Manitoba and North West Territories, Canada, road safety information for heavy vehicles using these roads can be found at: **http://www.gov.mb.ca/**

Hub Routing

Select **Enabled** to generate mileage from one origin defined as the "hub" to an unlimited number of destinations in the same route window. This type of route calculation gets its name from the image of a wheel with spokes and a hub at the center. The Detailed Route Report and State/Country Report are both available for hub routing. Note that timestamps won't be shown along a hub route on the map. By default, hub routing is *Disabled.*

10.3.3 Reporting Preferences
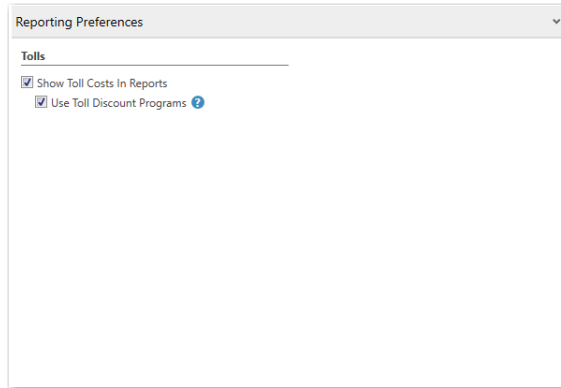
Tolls

Check **Show Toll Costs in Reports** to have toll costs appear in reports. Check **Use Toll Discount Programs** to have toll calculations use the discount programs selected in the Application Settings dialog > *Tolls* tab. Both options are checked by default.

10.4 Route Options for an Individual Route

In addition to the use of route profiles, route options can also be set and saved for individual routes. The Route Options dialog lets you customize and apply settings to the currently open route, with the option to save those settings to a new route profile or to the Default route profile.

The Route Options dialog can be accessed in one of the following ways:

- In a route window, select the gear button > *Options*.

- Select the Routes tab > *Options*.

- Use the **Alt**+**F3** shortcut.
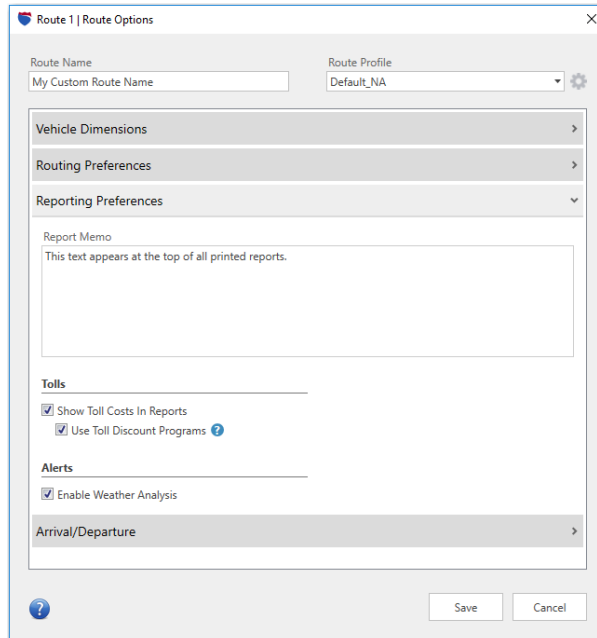
Route Options Dialog, Reporting Preferences

Besides the *Vehicle Dimensions* and *Routing Preferences* settings included in route profile options (described above in section 10.3), the Route Options dialog has a **Route Name** option in the upper left corner, an **Arrival/Departure** tab, and two additional *Reporting Preferences* settings.

Route Name

Enter a **Route Name** at the top of the dialog to assign a unique name to the current route. This name will appear in the title bar of the route window, in the Route legend in the map window, and in reports.

Arrival/Departure Tab

Set a time/day of arrival or departure for a trip, and select which road speeds to use in ETA/ETD calculations – see sections 5.1 and 5.2 for details. These same settings can be found in each route window. The default is **None**.

Report Memo

(**Reporting Preferences** tab) This field allows you to create custom report headers. Text that is entered in this field will appear at the top of all printed reports (check **Show Print Preview** in the Reports window to see how the header looks). By default the **Report Memo** field is left blank.

Alerts

(**Reporting Preferences** tab) If PC*MILER|Weather is licensed and installed, the **Enable Weather Analysis** check box turns weather reporting and alerts on/off. In the Application Settings dialog Weather tab, the "**Enable Weather**" check box has

the same function and controls whether this option is enabled in Route Options, but not vice versa.   This allows the setting to be turned on/off for a single route in Route Options without affecting the application setting that affects all new routes.

Your edits in the Route Options dialog can be saved and applied in three ways:
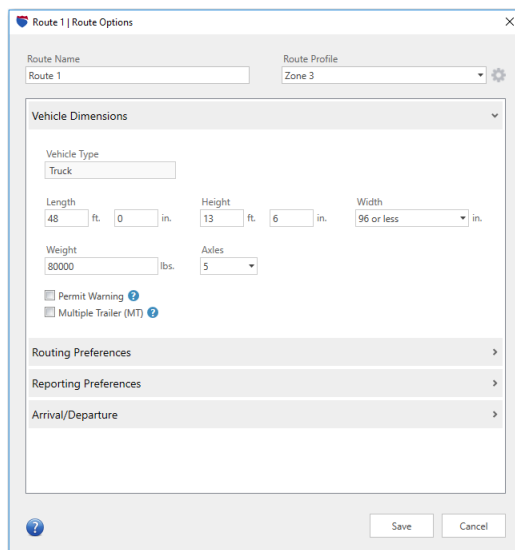
- Click **Save** to apply the custom settings you entered to the currently open route. These settings won't be applied to the route profile displayed in the upper right corner.

- Click the gear button (upper right corner) and select *Save Options as New Profile*, enter a name for the new route profile, then click **Save**. You'll see the new profile listed the next time you open the Manage Profiles dialog.
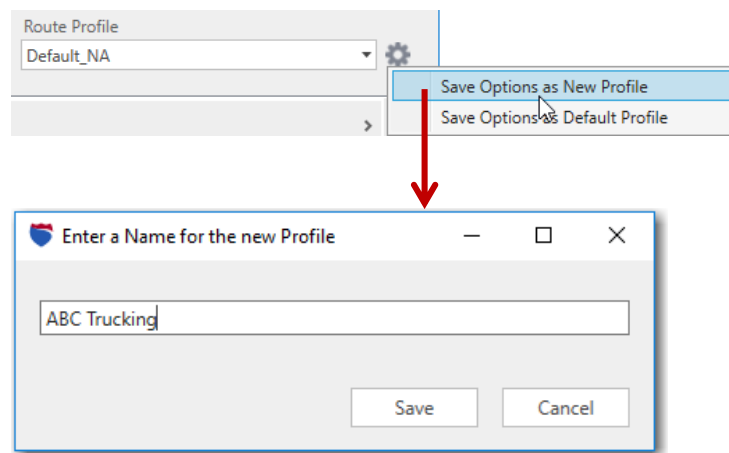
- Click the gear button (upper right corner) and select *Save Options as Default Profile* to save your custom settings to the PC*MILER Default route profile.
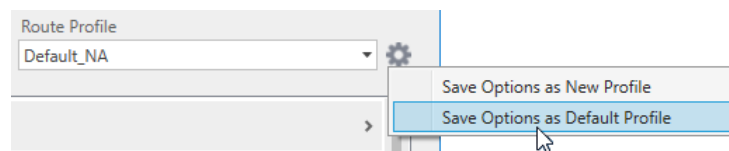
10.5 Using Custom Vehicle Dimensions

Route Options Dialog, Vehicle Dimensions Tab

PC*MILER's Vehicle Dimension options in the Route Options and Profile Options dialog (sections 10.3 and 10.4) enable you to generate routes based on custom vehicle dimensions. With these options, users can generate routing that conforms to the requirements of a vehicle's height, length, width and weight for light, medium duty and heavy vehicles.

If a vehicle weight and/or height is entered, PC*MILER route calculations will take into account restrictions on roads and bridges to ensure that the vehicle's weight/height is below the restriction(s). Vehicle weight, length and width information is checked against the threshold at which a truck becomes "oversized" and appropriate routing is generated.

Additionally, PC*MILER supports calculation of routes and toll costs for smaller vehicles (vans, pickup trucks, SUVs, automobiles, etc. that are classed less than 9,000 lbs./4,082 kgs.) with a "Full-size van" profile option or your own custom route profile that includes dimensions that meet the required criteria.

10.5.1 Vehicle Type, Route Profile and Vehicle Dimensions Defined

The **Vehicle Type** in the upper left corner of the Route Options or Profile Options dialog > **Vehicle Dimensions** tab conforms to the vehicle dimensions in the Vehicle Dimensions tab. The vehicle type updates automatically when dimensions are changed. It is informational only and cannot be edited by the user. Possible categories are **Auto**, **Truck (Medium-Duty)**, or **Truck** (heavy truck).

A **Route Profile** (full-size van, 48 ft. semitrailer, etc.) is a template containing a particular combination of vehicle dimensions and other route options that can be conveniently reapplied as needed. Out of the box, PC*MILER ships with an active Default route profile configured for 48 foot semi-trailers and a selection of other typical profiles to choose from. Route profiles can be created and edited by end users – see section 10.2.

Vehicle Dimensions (weight, length, height, width, axles, trailers) are specific values that will affect the selection or avoidance of road segments that restrict vehicles to below those dimensions. In other words, the roads that a route takes will depend on the specified vehicle dimensions. Vehicle dimensions are included in every route profile and may be customized. They can trigger warning messages if a restriction is violated because an alternate road segment was either unavailable or too impractical. Additionally, the weight, number of axles and trailer settings are used in calculating tolls. Vehicle dimensions determine the vehicle type (mentioned above) as shown in Table 1 below.

Table 1. PC*MILER Rules for Inferring Vehicle Type from Vehicle Dimensions

Dimension	Automobile if ALL values are <u>less than or equal to</u>	Medium Truck if ALL values are <u>less than or equal to</u>	Heavy Truck			
			<u>All other values</u> are regular heavy truck, unless…	In USA, Nat'l Network and State Oversize if ANY values are greater than	In Canada* in SK and MB, State Oversize if greater than *see note below	In Canada* in MB, National Network if greater than *see note below
Weight	8,500 lbs.	26,000 lbs.			76,038 lbs. (34,500 kg.)	82,650 lbs. (37,500 kg.)
Length	20 ft.	26 ft.		48 ft.		
Height	7 ft.	13 ft. 6 in.				
Width	96 in.	96 in.		96 in.		
Axles	2 (4 tires)	2 (6 tires)				
Trailers	None	None				

* The rules for Canada in the table above are for truck tractors with a single 5 or 6 axle semi-trailer. Customers who run heavy straight trucks (this would be unusual) or doubles (more common) in SK or MB are advised to consult the Weights and Dimensions Compliance Guides published by those provinces, and to select the PC*MILER State + National Network route type as appropriate.

> **REMEMBER:** An alternative to entering vehicle dimensions manually is, where appropriate, to select a pre-defined or user-created route profile.
>
> **NOTE:** If the user enters a vehicle height over 13 ft. 6 in., PC*MILER will avoid jurisdictions with lower overall limits in its calculations wherever possible and practical. You will receive a warning message in the Detailed and Driver's reports if any of these jurisdictions cannot be avoided on a route.

10.5.2 Customizing Vehicle Dimensions

> **NOTE:** Oversize permits will allow for "normal" truck routing if you have purchased the appropriate permits for your oversize vehicle for routing on assumed 80,000 lb./36,287 kg. roadways. Nonetheless, if the route includes a road segment for which the truck as configured will require a permit, the destination will be represented by a solid red circle in the route window (position the cursor over it to see the warning) and a warning will appear in the Detailed and Driver's reports.

Below are the vehicle dimension options that can be edited in the Route Options or Profile Options dialog > **Vehicle Dimensions** tab.

Height

For all regions and truck types, enter a length of 5 ft. – 13 ft. 6 in. or 1.52 – 4.11 m. The minimum height is > 0.

Length

For all regions and truck types, enter a length of 8 ft. – 82 ft. 10 in. or 2.44 – 25 m. The minimum length is > 0.

> **NOTE:** If the State + National Network routing option is selected in the **General** tab and a custom vehicle dimension is also entered in the **Length** field, both attributes are weighed in the overall calculation but the routing option takes precedence.

Width

For US Customary units, select **96 or less**, **98**, or **102 or more** inches. For Metric units select **2.44 or less**, **2.48**, or **2.59 or more** meters. Note that entering the larger vehicle width category will use State + National Network routing in the U.S. and Canada except where necessary for local deliveries. The default width setting for all regions is **98 inches**.

Weight

For all regions and truck types, weights of 1500 – 156,748 lbs. or 681 – 71,099 kgs. may be entered. See section 10.5.1 above for more on vehicle weight. The default weight setting for all regions is **80,000 lbs**.

Axles

(For PC*MILER/Tolls users only) The number of axles entered here is used only for the calculation of toll costs using the PC*MILER|Tolls add-on module. If PC*MILER|Tolls is not installed, this option will be disabled. See Chapter 7 for toll cost calculation information. The default number of axles is **5**.

Permit

If you try to enter a weight greater than 80,000 lbs/36,287 kg and this option is not checked, a warning will display in the Route Options dialog: "Trucks weighing over 80,000 lbs (36,287 kgs) require a permit in most U.S. states."
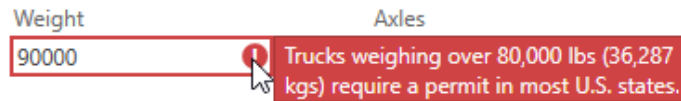
Check **Permit** to continue. This option does not affect routing, it only serves as a reminder that a permit is usually required for the vehicle dimensions entered. By default, it is unchecked.

Multiple Trailer (MT)

Check if the vehicle is a long combination vehicle with multiple trailers. (See section 7.2 for toll calculation considerations.) By default, it is unchecked.

10.5.3 Vehicle Dimensions for Automobile Routing

To generate a route that ignores all commercial truck restrictions (Truck Restricted, Truck Prohibited and Truck Discouraged), you can either 1) use the PC*MILER "**Full-size van**" route profile intended for use with vans, pickup trucks, SUVs, automobiles, etc. that are classed less than 9,000 lbs./4,082 kgs., or 2) enter your own vehicle dimensions that conform to the criteria for automobile routing in PC*MILER. Those criteria are as follows (**all criteria must be met**):

- 2 axles;
- less than or equal to 9,000 pounds/4,082 kilograms in weight;
- less than or equal to 7 feet/2.133 meters in height;
- less than or equal to 20 feet/6.096 meters in length;
- less than or equal to 96 inches/2.438 meters in width.

Automobile routing will relax all regulations that pertain to trucks, allowing the route to take advantage of parkways and other roads that larger and/or heavier and/or commercial vehicles are prohibited from using. PC*MILER will also use toll rates that apply to 4-tire vehicles with 2-axles, which often differ from rates that apply to 6-tire 2-axle vehicles. *(PC*MILER/Tolls must be installed.)*

The PC*MILER map window is like an electronic road atlas. All routes generated by PC*MILER are automatically displayed in the map window. This enables you to examine routes in detail, visually evaluate routing alternatives, and perform a variety of "what-if" analyses.

*The PC*MILER Map Window*

11.1 Routes on the Map

Up to eight routes can be generated and displayed simultaneously in the map window. Each route will be drawn in a different color. The Route Legend on the map and a color bar in the route window show the color used for each route.

To maximize the size of the map so that it fills the whole PC*MILER application window, close the Routes and Reports panes. To toggle the map window between

hide and display, select the Window tab > *Map Window*. To restore the default layout, select the Window tab > *Layouts* > *Default Layout.*

11.2 Frame Options

To frame a **country or area** within the region set in the Application Settings dialog, select the Map tab > *Frame* > *Areas* > and choose an area.

(PC*MILER/Worldwide only) To frame a world **region**, select the Map tab > *Frame* > *Regions* and choose a region.

To frame **the active route** on the map, do one of the following:

- select the Routes tab > *Frame*; [Frame]
- click the Frame Route button in the route window;
- select the Map tab > *Frame* > *Frame One Route* >; or > *Auto Frame Routes* to automatically frame each generated route (this is selected by default).

To frame all currently open routes, select the Map tab > *Frame* > *All Routes.*

There are several ways to frame a stop – see section 11.3, *Zoom Options,* below.
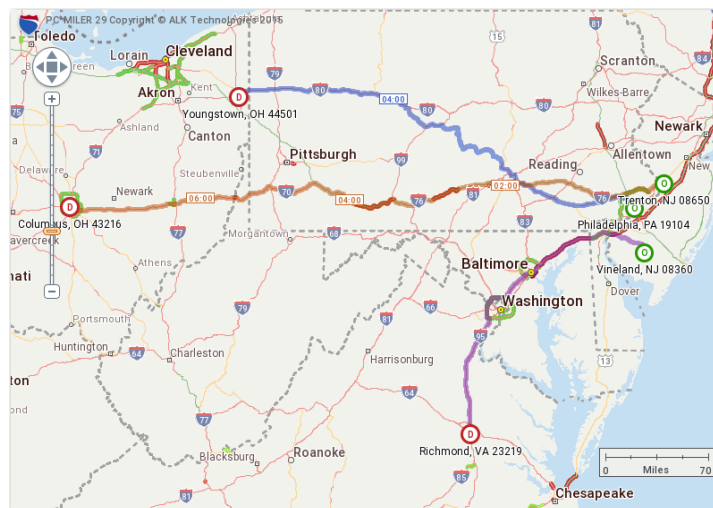
Framed Routes on the Map

11.3 Zoom Options

The PC*MILER map window features 20 possible zoom levels. You'll see the current zoom level in the window's title bar (e.g. "Zoom Level 14 of 20").

To zoom into a specific area, select the Map tab > *Box Zoom* (this option is turned on by default). Then drag a box around the area: press and hold the left mouse button down and drag the cursor on the map. Repeat to zoom in closer.

To zoom directly to a stop you entered in the route window, highlight it on the stop list, then do one of the following:

- double-click the highlighted stop;
- right click the stop name and select *Zoom to Stop* from the menu;
- select the Routes tab > *Frame*;
- or choose *Zoom to Stop* from the right mouse menu off the map.

Other ways to zoom your view of the map are:

- double-click a point on the map;
- use your mouse's scroll wheel: rotate the mouse wheel up to zoom in and down to zoom out;
- choose *Zoom In* or *Zoom Out* from the right mouse menu off the map;
- or use the slider bar and compass in the upper left corner of the map:

  - Click, hold and drag the zoom control to move up (zoom in) or down (zoom out); or

  - Click the plus sign or minus sign to move up or down one zoom level. To pan north, south, east or west as needed, click the directional arrows on the compass.
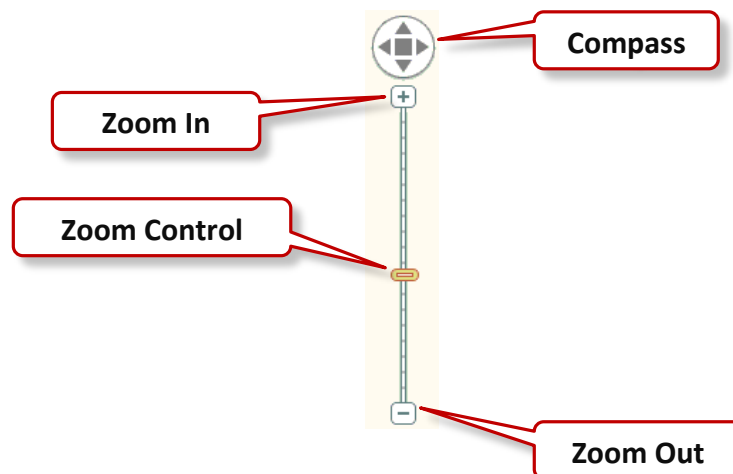
11.4 Drag Map or Pan To Shift the View

Drag the Map:

Select *Drag Map* in the right mouse menu off the map or click the Map tab > *Drag Map*. With your cursor (now in the shape of a hand) in the map window, hold the left mouse button down and drag in the desired direction. The map will redraw the new view.

To turn this feature off, click *Drag Map* again.

Pan:

Select *Pan* in the right mouse menu off the map, then select a direction. The map view will shift incrementally in the chosen direction. Other ways to pan are using the scroll bar (section 11.5 below) or the compass (section 11.3).

11.5 Scroll Bars in the Map Window

The PC*MILER map window includes scroll bars that are hidden from view until activated. To activate, touch any edge of the map window with your cursor and a translucent scroll bar will appear. Click on it to move the map incrementally in the direction indicated by the arrow, or click and hold to pan your view.
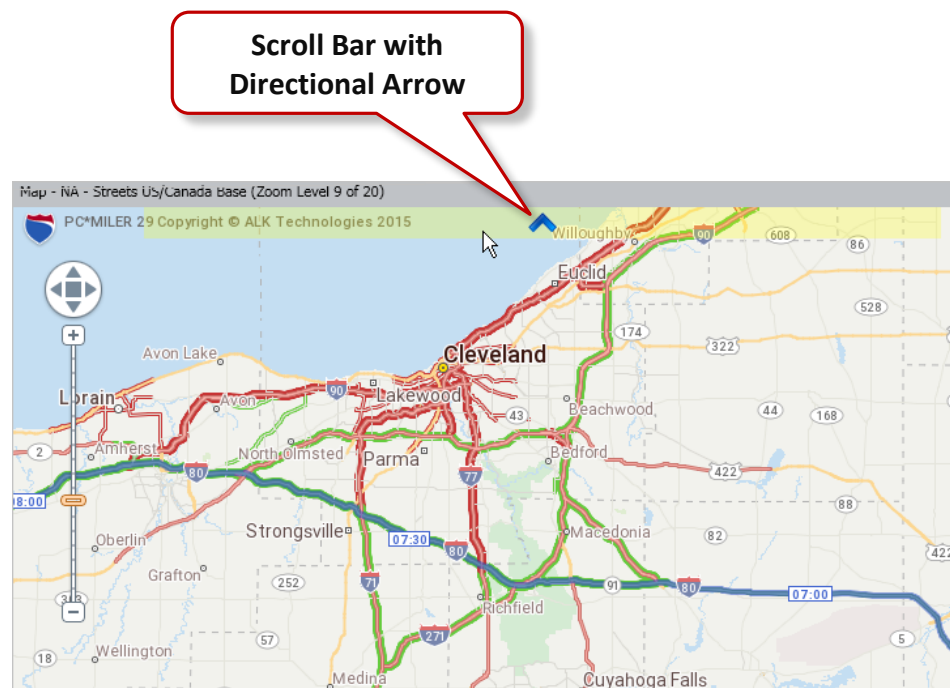
Scroll Bar for Map Panning

11.6 Legends

To hide or display legends on the map, select the Map tab > *Legends*. Each legend can be toggled on/off..

A legend can be moved to any position on the map – click and drag it to the desired location. Available legends are:

- **Road Legend:** Shows how PC*MILER road classes appear on the map. This legend is displayed by default. Road colors will depend on which map style is chosen.
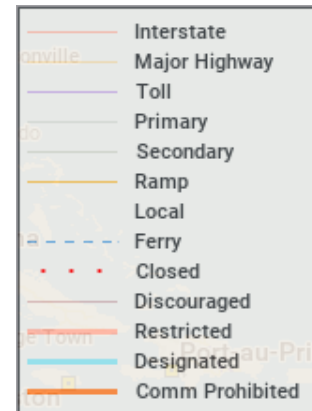
Road types included in each road class are:

Interstate	Multi-lane toll free and urban highways
Major Highway	Major highways, urban access roads
Toll	Toll roads and urban highways
Primary	Non-divided highways
Secondary	Non-divided highways, urban access roads, ferries
Ramp	Ramps
Local	Truck-discouraged roads (as defined by PC*MILER)
Ferry	Ferries
Closed	Temporary road closure.
Discouraged*	Not compatible for trucks, as determined by PC*MILER
Restricted*	Most kinds of trucks prohibited, as determined by the controlling governmental authority. Appears if "Truck Restrictions" is checked in the Map Features dialog. ***** For more on truck-discouraged vs. truck-restricted roads, see sections 1.6.7 and 10.3.2.
Designated	Designated 53' road network (these roads have either "State Oversized", "Oversized Access", or "National Network" designations on them). Appears if "Designated Truck Routes" is checked in Map Features.
Comm Prohibited	Roads that are prohibited for commercial truck traffic. Appears if "Commercially Prohibited" is checked in Map Features.

- **Route Legend:** Appears if at least one route window is open; provides a key to the color(s) used to draw each generated route on the map. Routes are listed in the order they were generated.
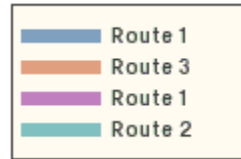
- **Scale of Miles:** A standard component of most maps, providing the scale of miles/kilometers. Appears by default. To change from miles to kilometers, go to File menu > *Application Settings* > *Units* > *Length and Distance in*.
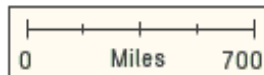
- **HazMat Legend:** If the PC*MILER|HazMat add-on data module is installed, a legend showing hazmat restrictions will be available.

- **Traffic Legend:** For PC*MILER|Traffic subscribers only, this legend shows the significance of the colors used for traffic flows on the map.
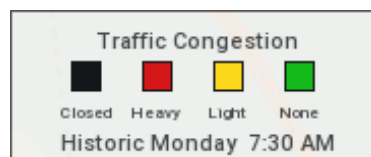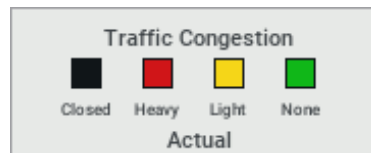
11.7 Hiding, Displaying and Layering Map Features

To choose which map features are drawn on the map and in what order, select the Map tab > *Map Features*, or choose *Features...* from the right mouse menu off the map to bring up the Map Features dialog.
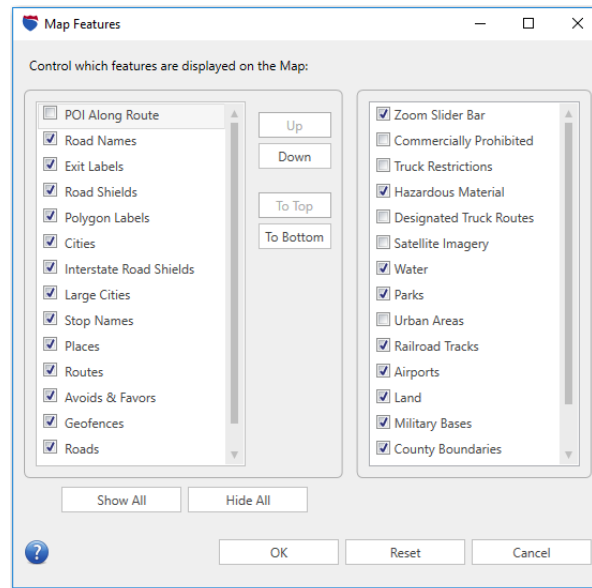
Map Features Dialog

Checked features will be displayed – click any check box to toggle between hiding and displaying an individual feature. Click **Show All** or **Hide All** to check or uncheck all listed features. Click on the **Reset** button to return to the default settings.

Additionally, the **Up**, **Down**, **To Top**, and **To Bottom** buttons can be used to manipulate the order in which the features *on the left* are drawn. For example, putting "Places" on top of all other features will make points of interest (POIs) stand out more on the map. The order of features in the list on the right cannot be changed, though they can be shown or hidden.

Click **OK** to close the Map Features dialog and redraw the map.

TIPS: Truck Restrictions: Note that by default "Truck Restrictions" is turned off in the map display. If you want to see all truck-restricted roads highlighted on the map, check this feature. Then refer to the Road Legend to see the color of the highlight that is used in the active map style for these roads.

Points of Interest: If your map is too cluttered with points of interest, uncheck "Places" to hide them.

11.8 Map Styles

The PC*MILER map window can be drawn in one of nine available map styles. Each style features a different color scheme and overall appearance. Available styles are **Classic**, **Contemporary**, **Default**, **Lightness**, **Black and White**, **Night**, **Road Atlas**, **Satellite**, and **Smooth**.

To change the map style, select the Map tab > *Map Style* > and click on one of the style options.

11.9 Satellite Image Layer on the Map *(North America only)*

(Requires Internet connectivity)   To display a photographic satellite image superimposed onto the PC*MILER map, select the Map tab > *Map Style > Satellite*; or turn the "Satellite Imagery" feature on in the Map Features dialog (Map tab > *Map Features*). Satellite imagery in PC*MILER is provided by Digital Globe, Inc.

For best visibility, the map should be zoomed in to at least Zoom Level 10. (The zoom level is displayed in the title bar of the map window – see section 11.3 on the many ways to zoom your map view.)

Satellite Map Image (Zoom Level 16) – Chicago, IL
(Satellite imagery provided by Digital Globe, Inc. All Rights Reserved.)

If the *Satellite* map style is selected and satellite images are temporarily unavailable, the map will display a white background with gridlines across it similar to the image below.

Satellite Images Temporarily Unavailable

11.10 Route Distances and Drive Times on the Map

Select the Map tab > *Tooltips* > *Route Distance* to have a tooltip appear when you place your cursor over a generated route on the map. The tooltip will show the distance between the selected point and the route's origin, and between the selected point and the route's final destination.
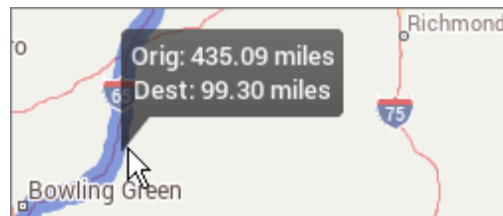
Tooltip on Route Near Bowling Green, KY

The estimated number of on-duty hours from the origin of a route is automatically shown on the map when a route is generated:
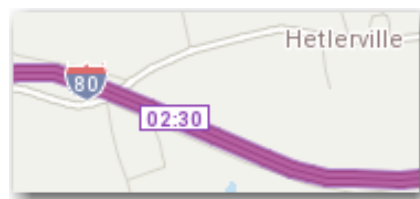
Hours:Minutes from the Origin of a Route

11.11 Right Mouse Map Menu

A right mouse menu off the map window is available to give you quicker access to frequently-used map options. To use it, place your cursor in the map window and click the right mouse button, then highlight the option you want.

11.12 Stops and Labels

Stops are represented on the map by circle icons with borders of different colors: green for the origin of a trip, red for the destination, deep blue for a stop, light blue for an HOS rest stop, and gray for a waypoint.
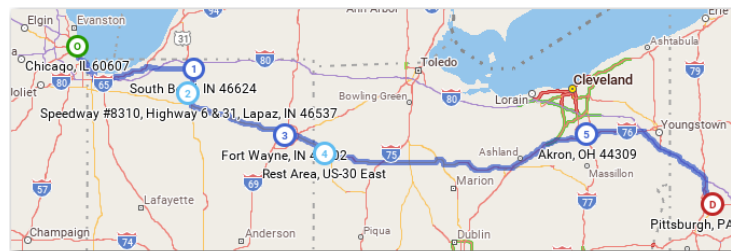
Origin, Stops, Rest Stops and Destination on the Map

By default, each stop is labeled with the name, address (if entered) and ZIP code of the location, or its latitude/longitude position. Stop labels can be toggled on/off by selecting the Map tab > *Stop Labels,* or by selecting *Stop Labels* in the right mouse menu.

11.13 Using the Mouse To Pick Stops

PC*MILER gives you the ability to enter stops in the route window directly from the map window without typing. You can use the mouse to select any point on a highway, labeled city, unlabeled location, intersection, truck stop, or latitude/longitude point. See section 3.5.25 for a description of this feature.

> **TIP:** When your cursor hovers over the map, its latitude/longitude position is automatically tracked and appears in the status bar in the lower left corner of the program window.
>
> Here's an easy way to enter a latitude longitude point: right mouse click on the map and choose *Copy Latitude/Longitude*, then click in a route window's city field and paste (**Ctrl-V** or *Paste* in the right mouse menu).

11.14 Points of Interest on the Map *(U.S. only)*

PC*MILER offers as a standard feature the ability to search, display and route to millions of points of interest (POIs) from ALK Technologies' proprietary location database and Infogroup's U.S. business database. Truck stops, weigh stations, business locations, rest areas, intermodal ramps, and many other landmarks are visible on the map. POI categories that you might see on the map are listed below. Use the POI search tool in any route window to search for POIs (see section 3.12).

TIP: If the map is too cluttered with points of interest at a particular location, select the Map tab > *Map Features* and uncheck "Places" to hide them.

Address	Games	Rest Area
Airport	Industrial Estate	Restaurant
ATM	Geographic Feature	Retail
Attraction	Government/Municipal	Recreation Vehicle
Auto Dealership	Grocery	Safety Camera
Auto Rental	Home	School
Auto Repair	Hotel	Tandem Trailer (LCV) Lot
Bank	LiveLink Kiosk	Toll Booth
Blank (white square)	Live Search	Train Station
Border Crossing	Marina	Truck
Bridges and Tunnels	Marker (generic)*	Truck Stop
Bus Stop	Medical	Vehicle Charging
Cat Scale	Motorcycle Dealer	Web Result
Commuter Rail	Park	Weigh Station
Entertainment	Parking	Wikipedia
Favorite	Place of Worship	Work
Ferry	Public Venue	Recreation
Fuel Stop	Recent	

* This generic marker category includes Custom Places and highway exits.

11.15 Printing or Copying a Map

The map in the PC*MILER map window can be printed or copied.

To print the map, either select the File menu > *Print Map* or select the Map tab > *Print Map*. A standard Windows® setup dialog for printing will open.

To copy a map to the clipboard for pasting into another Windows program, select the Map tab > *Copy Map*.

12 Custom Routing

PC*MILER provides a number of ways to customize routing, described in this chapter, including via point creation, dragging a route on the map, avoid and favor preference designations, truck and hazardous material restriction overrides, and geofence options.

> **IMPORTANT NOTE:** To back up your customized data, see section 12.5 in this chapter.

12.1 Picking Roads to Avoid or Favor

> **IMPORTANT:** Your avoid/favor preferences will affect routing only when **Routing Preferences** > **Custom Roads** > *Use Avoid/Favors* is selected in the Route Options dialog or current route profile. This option is turned off by default.

You may wish to indicate road segments that PC*MILER should avoid or favor when generating a route. An avoided road segment is effectively treated as if it were closed **unless no other road can be used** for the route, **or if the total trip distance would be increased to the point of unacceptable inefficiency**. Favored road segments will be used **unless it is not practical to do so**. Preferences are saved in a file called "avoidfavors.db" in the Data\Base\Save folder of your installation.

Road segments to avoid or favor can be picked from the PC*MILER map window. Alternatively, you can use the map provided in the Avoid/Favor Manager dialog – see section 12.1.1 below for a description of this Manager. Here are the steps to create a road preference using either map:

1. First select the Tools tab > *Avoid Roads* or *Favor Roads.*

2. On the map, the cursor will now appear with a minus or plus sign. Click on the road segment to be avoided/favored (zoom in for a closer view if necessary).

3. An Add Comments prompt will appear on the map. Adding a comment is optional. Any comment you type in will be saved along with the avoid/favor when you click **OK**. If you do nothing, the dialog will close on its own as soon as another action is initiated. (A comment can also be added at a later time in the Avoid/Favor Manager – see section 12.1.1 below.) If you don't want the Add Comments box to keep popping up, uncheck "**Show this**

window whenever adding Custom Roads". To activate this feature again, go to the File menu > *Application Settings* > **General** tab, check **Show Comment Box**, and save your edit.
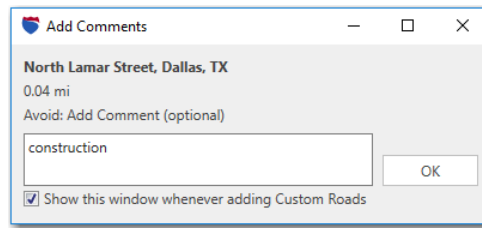
Add Comments Dialog

4. The selected road segment will be highlighted red if it's to be avoided or green if it's to be favored. You may need to click on several adjoining segments to cover the entire area you wish to designate.

Avoid and Favor Designations on the Map – Dallas, TX

5. If you want to cancel an existing avoid/favor on the map, click on it with the *Avoid Roads* or *Favor Roads* tool selected.

NOTE on Favored Roads: The PC*MILER long-distance "backbone" contains the roads that PC*MILER uses for its default Practical and Shortest routes over long distances. If a favored road is not in the PC*MILER long-distance backbone, it will not be used for long-distance routes even if it is favored, unless an intermediate stop on that road is inserted into the route.

12.1.1 Using the Avoid/Favor Manager

All avoid/favor road preferences are saved in the Avoid/Favor Manager. To open this dialog, select the Tools tab > *Manager* or press **Alt+F2** on your keyboard.

In this Manager you can create, delete, edit or export existing avoid/favor preferences using the tabs, buttons and map provided.
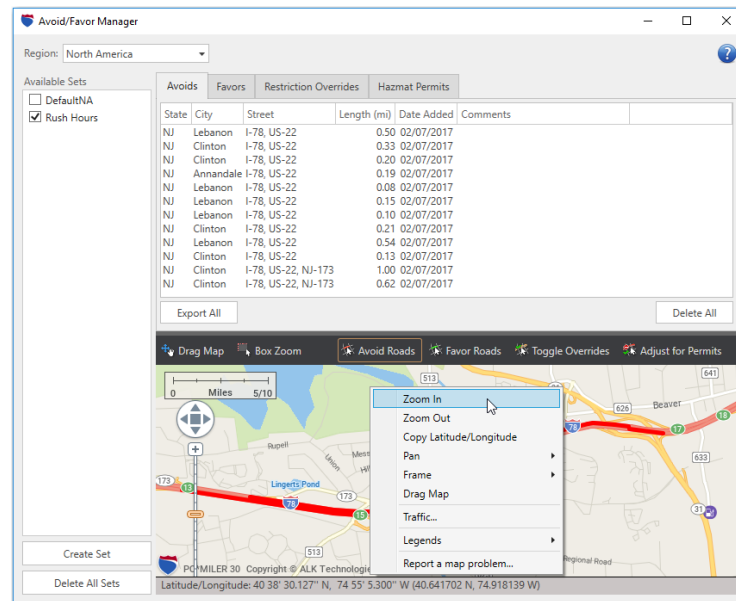
Avoid/Favor Manager

The Avoid/Favor Manager map includes most but not all of the functionality that exists in the PC*MILER map window. It can be used just like the PC*MILER map to designate or delete road preferences – click one of the avoid/favor buttons at the top, then click a road segment on the map to add it to the list in the corresponding tab above. To zoom your map view to a road segment listed in any tab of the Manager, first highlight it in the applicable tab and then double-click.

See section 12.1.2 below on overriding truck restricted roads, and section 12.1.3 on overriding hazardous material restrictions to accommodate hazmat permits.

To **delete** an individual custom road segment from any tab in the Manager, highlight it and click the "X" on the far right. Click **Delete All** to delete the entire contents of the list in any tab.

To add or edit a comment, highlight an avoid/favor on the list then, in the highlighted row, double-click in the **Comments** column.

To save your edits, click the "X" in the upper right corner to close the Manager window.

12.1.2 Overriding Truck-Restricted Roads

NOTE: A road that is flagged as "truck-discouraged" (versus "truck-restricted") in the PC*MILER database cannot be overridden only by using the method described below. In addition to overriding the road, you must designate all the road segments on it as favored to make it fully truck-accessible (see section 12.1 above). To determine if a road is truck-discouraged, refer to the Road legend on the map for the color of the highlighting used to indicate a truck-discouraged road. (**Truck Restrictions** must be checked in the Map Features dialog to see truck-discouraged roads on the map.)

A truck-restricted road, as determined by the controlling governmental authority, prohibits trucks larger than a certain size and weight. To see these roads on the map, select the Map tab > *Map Features* and turn on **Truck Restrictions**. In accordance with these regulations, PC*MILER does not use truck-restricted roads when routing vehicles larger or heavier than the restricted size or weight. However, you can override these restrictions using the Restriction Override feature described in this section, to determine the largest and heaviest vehicle that can be assigned to a route.

A truck-discouraged road is one that is open for local deliveries, but unsuitable for through trucks, as determined either by the controlling authority or by PC*MILER. The road may be discouraged because it is narrow, winding, not well paved, or for a variety of other reasons. PC*MILER avoids routing over truck-discouraged roads whenever possible, with the following exceptions: if the destination is located on such a road; if avoiding the truck-discouraged road will add a very significant amount of time and distance to a route; or if you have marked the road to be favored.

If you have questions about truck restrictions, please contact each jurisdiction directly.

TIP: To set PC*MILER to override truck restrictions by default, click the Routes tab > *Profiles* and edit the Default route profile (or whichever profile you use regularly): select the **Routing Preferences** tab and set **Size and Weight Restrictions** to *Override*, then save your edit.

IMPORTANT: Your avoid/favor preferences will affect routing only when **Routing Preferences** > **Custom Roads** > *Use Avoid/Favors* is selected in the Route Options dialog or current route profile. This option is turned off by default.

PC*MILER normally routes around all truck-restricted roads. However, some of these restrictions may be overridden, making the roads accessible. (This assumes that you have been granted permission to use these roads from the controlling authority, or that you are going to be using special equipment.)

To see truck-restricted roads highlighted on the map, turn on the **Truck Restrictions** layer in the Map Features dialog. A "Restricted" category will appear in the Road legend, showing the color of the highlighting on these roads.

Overriding restrictions on a road is similar to designating road segments to be avoided or favored – you can pick overrides from the PC*MILER map window or from the map in the **Restriction Overrides** tab of the Avoid/Favor Manager. Remember though, that a "truck-discouraged" road must be favored as well; and to override a road restriction you must click on each segment of the road until the whole road is redrawn. The color of the new highlighting will depend on which map style is selected. Comments can be added if needed. **Be sure to override all segments included on the route; otherwise the entire road will continue to be treated as inaccessible.**

To undo an override, click on it on the map with the *Toggle Overrides* tool activated or delete it from the **Restriction Overrides** tab of the Avoid/Favor Manager. The road will be restored to its original truck-restricted status.
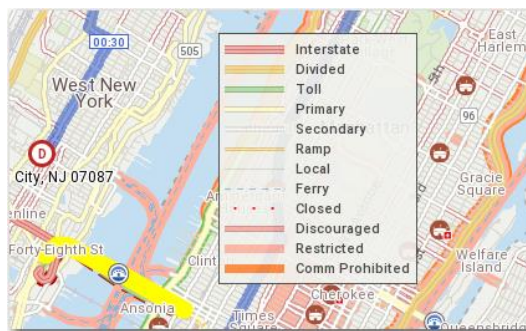
Truck Restriction Override on the Map

12.1.3 HazMat Permit Overrides

To change the status of roads that are restricted for hazardous materials, see section 12.1.3. To transport hazardous materials on these roads, the applicable permits must have been obtained.

12.1.4 Creating Sets of Custom Road Preferences

The Avoid/Favor Manager enables you to manage multiple sets of custom road preferences by allowing you to create and save sets of these preferences. You may find that custom sets are a useful tool for working with special equipment you operate, or for seasonal routing requirements. Sets can include road segment avoids/favors, and hazmat and truck restriction overrides.

IMPORTANT: The Avoid and Favor tools won't be available if there is no set selected in the Avoid/Favor Manager, or if more than one set is selected.

NOTE: Many states and provinces in the north central part of the North American continent have seasonal weight limits that apply either to all commodities or to particular commodities (such as grain) at certain times of year (harvest season, winter, spring thaw, etc.).

In these areas, the carrier typically works with the shipper to adjust how much material is loaded into the truck in order to max out the limit for the season in question, rather than adjust the route traveled.   So (for example) more grain would be loaded into the truck during harvest season or winter than during spring thaw, in order to have a legal load when an origin or destination is on a road with a seasonal limit.   In addition to legal considerations there are also practical physical considerations since many loading and unloading points in that part of the country are on unpaved surfaces, and to overload a truck during spring thaw risks the truck getting stuck during pickup or delivery.

PC*MILER has the weight limit coded that applies to general commodities during most seasons of the year. For situations where the low-limit road is used as a through route rather than for pickup or delivery, the Sets feature described below can be used to create avoid/favor/restriction override "sets" for each season of the year for each commodity. Custom routing must be turned on in the Route Options dialog or the active route profile; then use the set that applies for a specific commodity at the appropriate season of the year.

REMEMBER: Your avoid/favor preferences will affect routing only when **Routing Preferences** > **Custom Roads** > *Use Avoid/Favors* is selected in the Route Options dialog or current route profile. This option is turned off by default.

To create a set, do the following:

1. Select the Tools tab > *Manager* to open the Avoid/Favor Manager.

2. Click **Create Set** in the lower left corner.

3. At the prompt, enter a **Name** for the new set.
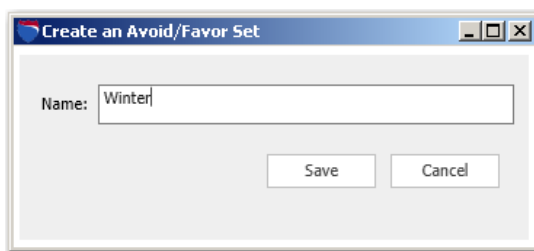
4. Click **Save**.

5. You will see the new set under **Available Sets** on the left. Uncheck the **DefaultNA** set and any other existing sets that are checked in this list.

> **NOTE:** If more than one set is enabled in the Avoid/Favor Manager, the avoid/favor buttons in the Tools tab will be disabled.

6. Now you can begin to add road segments in any tab of the Manager. These avoid/favors will be specific to this set. The set you are adding them to must be the only set selected in the **Available Sets** list.

Note the following guidelines for creating new sets:

- Set names cannot be longer than 50 characters, and must be comprised of letters and/or numbers.
- Spaces are not allowed in the set name, but underscores ("_") are permitted.

To delete an individual set, place the cursor over the set name and click the "X" that appears on the right:
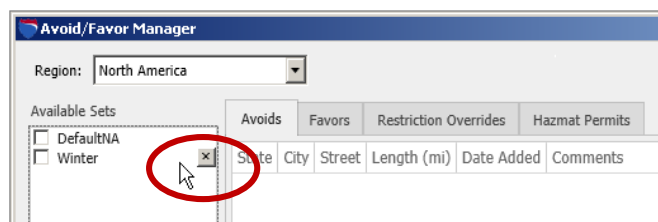
Deleting a Set

To delete all sets, click the **Delete All Sets** button in the lower left corner. The **Default NA** set cannot be deleted.

When more than one set is checked, all preferences included in the active sets will be visible on the map and listed in the corresponding tabs. However, only one set must be active when you want to add or delete preferences to a set. When multiple sets are active, the **Favor Roads**, **Avoid Roads**, **Toggle Overrides**, and **Adjust for Permit** buttons will be grayed out on the toolbar and in the right mouse map menu.

12.1.5 Exporting Custom Roads Data To a Report

To create a report in a text file (.txt) or Excel file (.csv) that contains all the preferences in the open tab of the Avoid/Favor Manager, click **Export All**. In the dialog that opens, name the file and choose a file format from the **Save as type** drop-down. Here are examples of the two types of file formats (the formatting in these files has been edited):

```
City, State      Street          Length (mi)    Date Added    Comment
Annandale, NJ    Ramp            0.1            05/01/2014
Annandale, NJ    I-78            1.8            05/01/2014
Lebanon, NJ      I-78, US-22     0.2            05/01/2014
Lebanon, NJ      I-78, US-22     0.3            05/01/2014
Clinton, NJ      I-78, US-22     0.2            05/01/2014
Clinton, NJ      I-78, US-22     0.6            05/01/2014
Clinton, NJ      I-78, US-22     0.1            05/01/2014
Lebanon, NJ      I-78, US-22     0.2            05/01/2014
Clinton, NJ      Leigh Street    0.0            05/01/2014
Hampton, NJ      I-78, US-22     1.4            05/01/2014
Clinton, NJ      Leigh Street    0.1            05/01/2014
Clinton, NJ      Leigh Street    0.0            05/01/2014    traffic incident
Annandale, NJ    I-78            0.0            05/01/2014
Annandale, NJ    Ramp            0.1            05/01/2014
Annandale, NJ    I-78            0.1            05/01/2014
```

Exported File of Avoided Roads in .TXT Format

	A	B	C	D	E
1	City, State	Street	Length (mi)	Date Added	Comment
2	Annandale, NJ	Ramp	0.1	5/1/2014	
3	Annandale, NJ	I-78	1.8	5/1/2014	
4	Lebanon, NJ	I-78, US-22	0.2	5/1/2014	
5	Lebanon, NJ	I-78, US-22	0.3	5/1/2014	
6	Clinton, NJ	I-78, US-22	0.2	5/1/2014	
7	Clinton, NJ	I-78, US-22	0.6	5/1/2014	
8	Clinton, NJ	I-78, US-22	0.1	5/1/2014	
9	Lebanon, NJ	I-78, US-22	0.2	5/1/2014	
10	Clinton, NJ	Leigh Street	0.9	5/1/2014	
11	Hampton, NJ	I-78, US-22	1.4	5/1/2014	
12	Clinton, NJ	Leigh Street	0.1	5/1/2014	
13	Clinton, NJ	Leigh Street	0.8	5/1/2014	traffic incident
14	Annandale, NJ	I-78	0.6	5/1/2014	
15	Annandale, NJ	Ramp	0.1	5/1/2014	
16	Annandale, NJ	I-78	0.1	5/1/2014	
17					

Exported File of Avoided Roads in .CVS Format

12.1.6 Avoiding or Favoring Whole Roads or States/Countries

REMEMBER: Your avoid/favor preferences will affect routing only when **Routing Preferences** > **Custom Roads** > *Use Avoid/Favors* is selected in the Route Options dialog or current route profile. This option is turned off by default.

In addition to the road preferences described above, whole roads and whole states can be selected to be avoided or favored for a route using the States/Roads Manager. If PC*MILER|Worldwide or DTOD Data is installed and a region other than North America is selected, whole countries can be avoided/favored as well.

Avoid or Favor a Whole Road

> **NOTE for PC*MILER|Streets Users:** You cannot designate a local street by name to be avoided or favored in the **Roads Restrictions** tab; a local road can only be avoided/favored by designating it as such on the map.

To select whole roads to be avoided/favored:

1. Select the Tools tab > *States/Roads* > **Roads Restrictions** tab.
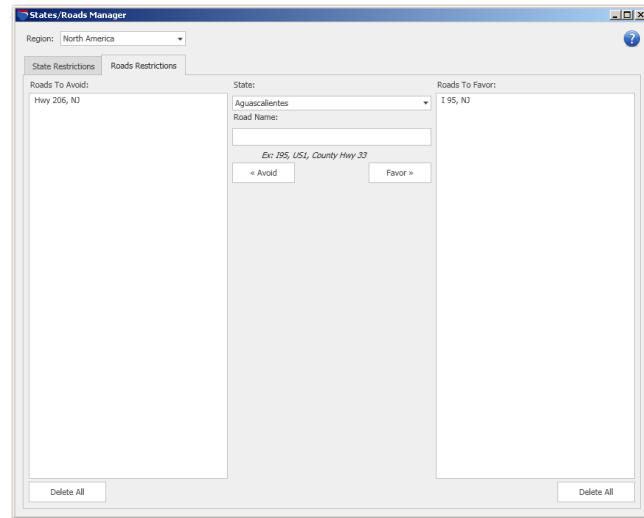
States/Roads Manager, Road Restrictions Tab

2. Select a state (or country) from the **State** drop-down.

3. Type the road name* in the **Road Name** field (e.g. **I 95**) without a state abbreviation.

4. Click **Avoid** or **Favor** under the road name.

To **delete** a road from one of the lists, place the cursor over it and click the "X" that appears to the right. To clear either list, click **Clear All**.

* To see how the name of a particular road appears in the PC*MILER database, you can zoom to that road on the map and place your cursor over the road without clicking. Some highway labels may include a common name along with the road number; for example, "**Pennsylvania Turnpike (I 276)**". In these cases, use the road number from within the parentheses ("**I 276**" in this example).

> **NOTE:** You won't see any indication on the map that a whole road or whole state/country has been designated to be avoided or favored. To see the difference a designation makes on a route, first run the route with **Use Avoid/Favors** turned

off and run the same route with this option enabled (Route Options or Profile Options dialog > **Routing Preferences** > **Custom Roads** > *Use Avoid/Favors*.

Avoid or Favor Whole States/Countries

Whole states can be avoided or favored on a route. If PC*MILER|Worldwide or DTOD Data is installed and a region other than North America is selected, whole countries can be avoided/favored as well.

1. Select the Tools tab > *States/Roads* to open the States/Roads Manager.

2. **VERY IMPORTANT:** Make sure "**Enable**" is checked in the upper left corner of the **State Restrictions** tab.

3. Select a state (or country) from the **States** pick list.

4. Click either **Avoid** or **Favor** to add to the desired list.

To **delete** a state (or country) from one of the lists, place the cursor over it and click the "X" that appears to the right. To clear either list, click **Clear All** at the bottom of the list.
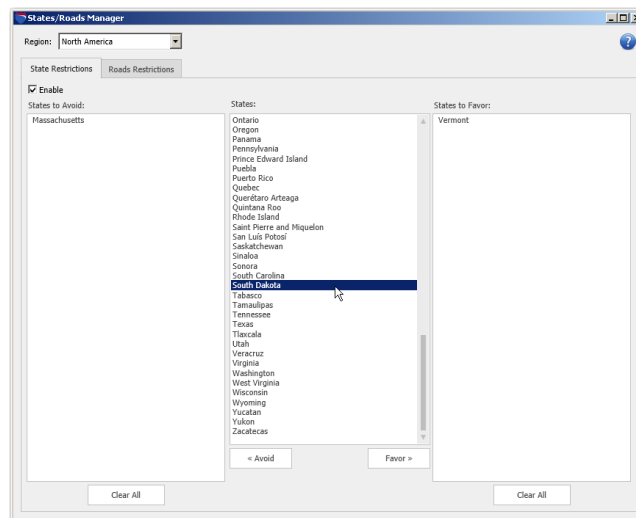
States/Roads Manager, State Restrictions Tab

12.1.7 Converting Custom Road Files from a Previous Version

Saved custom road preferences from the previous version of PC*MILER can be imported using PC*MILER's file conversion utility as in the steps below.

1. Select the Tools tab > *Convert*.

2. Click **Import** and navigate to your existing custom road file(s) that are located in the **Data\Base\Save** folder in your PC*MILER 29 installation folder – select the file **avoidfavors.db**.

3. After you select the file(s), click **Open** to start the import.

4. Once the import process is complete, check to make sure all the avoid/favors were imported successfully. Due to changes in the highway and street-level network database over time, some avoid/favors may not be successfully imported. Double-clicking on any listed road segment in the Conversion Utility dialog will zoom to that segment on the map where you can edit your preferences further if necessary.

IMPORTANT NOTE: Because of enhancements to the PC*MILER database that incorporate express, local, north/south and east/west lanes, etc., some of your avoid/favor/override designations from a previous version may need to be edited link-by-link to be sure the designated preference will operate in both directions.

In the Avoid/Favor Manager, open the **Avoid**, **Favor**, **Restriction Overrides** or **Haz Permits** tab to see a list of your preferences. Then zoom in to the maximum level (20) on each listed link on the map (you can double-click each link to do this) and make sure that lanes in both directions are marked with the desired designation.

12.2 Using Via Points For Route Customization

PC*MILER gives users the ability to enter and save up to 12 via points between an origin and destination to guide a route along user-preferred roads.

The via points you create can be designated as stops or waypoints. The "waypoint" designation means that these locations were added only to guide the route along desired roads. Waypoints are treated like stops on the map (routes travel through the centroid of a waypoint town or city), but they don't appear in the driving instructions in the Driver's Report and are marked as a "Via" in the Detailed route Report. Waypoints appear on the stop list as circles with a gray border. When using PC*MILER|TripDirect and CoPilot, the navigation system will tell drivers to stop at a stop or to drive through a waypoint.

Via points are saved in a set and the option to enter them will be offered whenever the route segment for which they were created is included on a trip. For example,

vias for a trip leg between Baltimore and Chicago can be entered with a click of the mouse whenever Baltimore followed by Chicago is entered for a route.

To create a via point set, follow these steps either before or after running a route:

1. In a new route window, enter at least two stops.

2. **Highlight the stop that you wish to designate as the origin.** This need not be the origin of the route if multiple stops are entered. You will be creating via points between this highlighted stop and the next destination on the stop list.

3. Select the Routes tab > *Create Via Point Set* to open the Via Point Set Manager.

Via Point Set Manager

4. Under **Via Point Location**, type a PC*MILER location (city/state, postal code, etc.) in the top field and, optionally, a street address underneath.

5. Under **Via Point Type**, select whether the point you entered will be a **Stop** or a **Waypoint**.

6. Press **Enter** or click **Add Point.** PC*MILER will confirm that the location exists in the database – if a pick list appears, make a selection and click **OK**.

7. Click **Add Point** again to add this location to the **Via Points in Set** list.

8. Under **Via Point Set Application**, select whether the new set will be applied only when the route travels from **Origin to Destination**, from **Destination to Origin**, or in **Both Directions**.

9. Also under **Via Point Set Application**, the radius around the origin and/or destination can be edited (default is 10 miles). This is the radius within which an origin and a destination point must be located to trigger the via points option for this route segment. The radius is defined from the city center or postal code center.

10. Steps 4-9 can be repeated to add up to 11 additional via points to the set.

11. When finished adding points, click **Save Set** to save the new set then click **Close** to close the dialog.

12. In the route window, you will see a line inserted into the stop list under the origin for the via point set. Click the **Add Via Set** button on this line to add the points to the stop list. If you decide not to use the via points for this route, ignore this button and the via points won't be used.
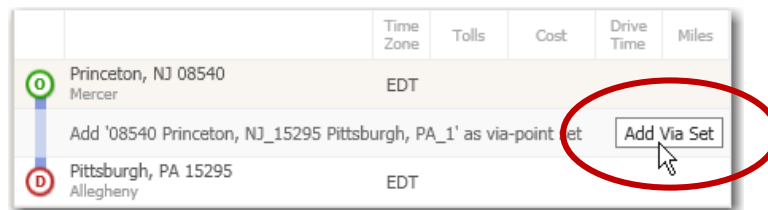
"Add Via Set" Button in the Route Window

13. Click **Run** to run the route. If you activated the via points in Step 11, the route will travel on the preferred roads through the via points.

To Edit a Set:

To edit a set at any time, select the Routes tab > *Manage Via Point Sets*. Then select the set you want to edit from the drop-down of sets, make your changes, and click **Save Set**.

Editing options include:

- Rename the set – click **Edit Set Name**, enter a new name, then click **Rename**.
- Delete the set – click **Delete Set** in the upper right corner of the dialog. **This action cannot be undone.**
- Change the direction to which the set will be applied.
- Add more stops or waypoints as described above.
- Change the via point type – select a point on the list then click **Stop** or **Waypoint**.
- Delete one or more via points – select a point on the list and click **Delete Point**.
- Change the order of points in the set – select a point on the list and click **Move Up** or **Move Down**.

12.3 Dragging a Route on the Map

Once a trip has been generated, any point along the generated route on the map can be dragged onto another road in order to re-route the trip. To drag a route, do the following:

1. Select the Routes tab > *Drag Route*.

2. In the PC*MILER map window, click on the route and hold down the cursor, then drag to the desired location and let go.

3. This action will create a waypoint at the location to which the route was dragged, indicated by a gray circle icon. The trip will be re-routed to accommodate the new waypoint.

Original Route

New Route Created by Dragging
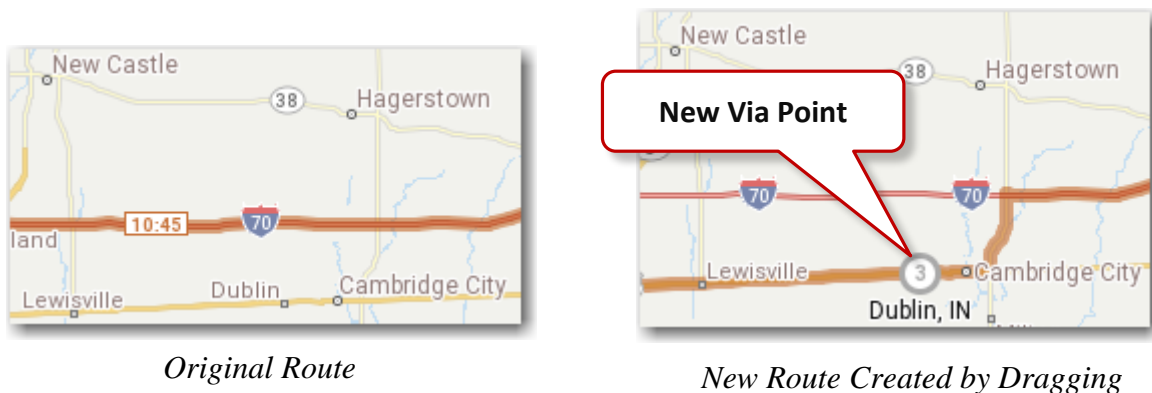
12.4 Geofence Options

PC*MILER provides tools that enable you to create, modify and manage geofences. A geofence defines a geographic area that will either generate an alert when a route enters it, or will be avoided by the route. Its use has many different applications, such as:

- Drawing zones around a warehouse to identify delivery/billing zones
- Alerting dispatchers when a vehicle enters an area that it wasn't authorized to enter – for example, leaving the country
- Avoiding or warning about steep grades, mountain passes susceptible to snow closures, tunnels requiring escorts, etc.
- Avoiding or warning if an asset has crossed into a high crime or high accident area
- Avoiding or warning about areas where bad weather is expected or has occurred: heavy snowfalls, floods, hurricane evacuation areas, etc. (also see the PC*MILER|Weather Alerts feature, see Chapter 8).

The geofence tools in PC*MILER allow users to:

- Create and modify the characteristics of a geofence:

    - Define its size and shape as a circle, rectangle, or a user-defined polygon
    - Give the geofence a unique name (with the exact text that will appear in report warnings)
    - Delete the geofence

- Identify points and roads that fall within the boundaries of a geofence

- Group geofences into sets and assign and modify the characteristics of a set:

    - Create and uniquely name a set with the name that will appear in report warnings
    - Define the border color, border width and fill color of the geofences in the set
    - Define the set properties: off (not active), warning only, or avoid and warn
    - Delete the set

12.4.1 Creating a Geofence

NOTE: There is no limit to the number of individual geofences that can be created and added to a geofence set, or to the number of sets that can be created.

TIP: A geofence that covers a very large area (for example, a whole state) will draw very slowly on the map and will affect other map functions that involve a map redraw. Whole states and whole roads can be avoided or favored using the States/Roads Manager – see section 12.1.6.

NOTE: To see geofences on the PC*MILER map or on the map in the Geofence Manager, "Geofences" must be checked in the Map Features dialog (Map tab > *Map Features*). This map feature is enabled by default.

Follow the steps below to create an individual geofence:

1. Select Tools tab > *Geofence Options* > *Manage* to open the Geofence Manager.

2. In this window, use the zoom tools and **Drag Map** button to zoom into the target area on the map.

3. Click the **Rectangular**, **Circular**, or **Polygonal** button at the top of the map. Depending on which shape you chose, the cursor will change to one of the following:

    - When drawing a rectangle: ⌐⌐
    - When drawing a circle: ↻
    - **(Recommended)** When drawing a user-defined polygon: ▯

If using the circle or rectangle shape, drag the cursor over the desired area. If using the polygon tool, click all the points of the desired perimeter and finish by clicking on the first point again to close the polygon. If you are not satisfied with the area that is covered, delete the geofence in the **Available Geofences** list to the right and start over.

NOTE: Note that alternatively you could use the map and geofence tools in the PC*MILER application window to initially create a geofence – open the Tools tab > *Create Geofence* and create a geofence on the map as in Steps 2-3. Then open the Manager to rename.

NOTE Also: See sections 12.4.5 on identifying points and roads that are included within the boundary of a geofence.
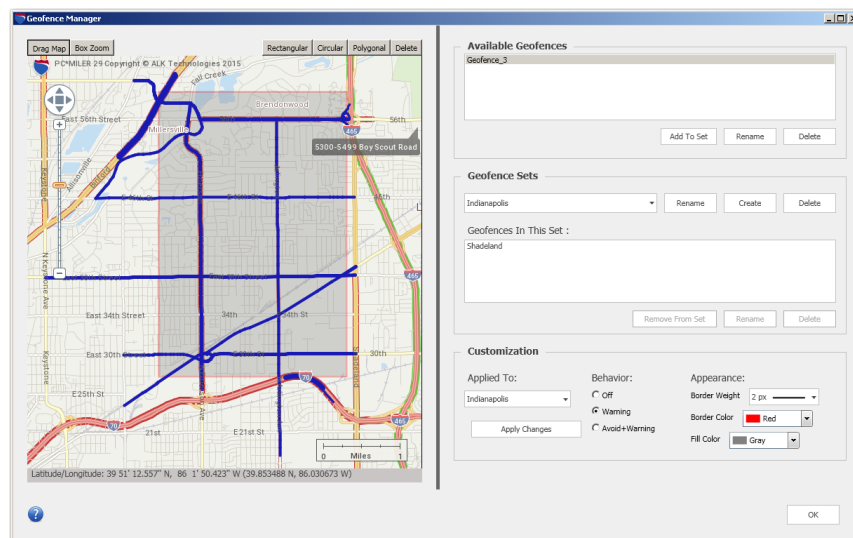
Geofence Manager

4. In the **Available Geofences** list, you will see a generic name assigned ("Geofence_#") to the geofence you just created on the map. (If more than one geofence is on the list, they will be listed alphabetically, e.g. Geofence_1, Geofence_10, Geofence_2, etc.) To assign a unique name to this geofence (for example, a geographic location):

   a. Click on the default name.

   b. Click **Rename** below the list.

   c. In the prompt that pops up, type a new name.
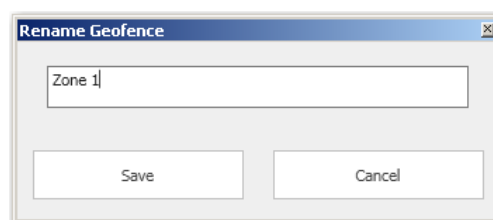
d. Click **Save**.

5. A geofence must belong to a set before a warning status and display properties can be assigned to it:

    a. Click **Create** under **Geofence Sets**.

    b. Type a name for the new set.
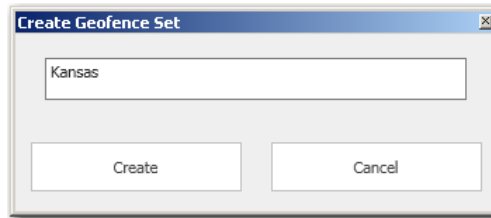
    c. Click **Create**. The set name will appear as the selected set in the **Geofence Sets** list.

    d. Go back to the **Available Geofences** list, highlight the geofence(s) you want to add and click **Add To Set**.

6. Click **OK** to close the Geofence Manager. The geofence(s) you created will be saved in the PC*MILER installation folder.

TIP: To zoom to an existing geofence or set on the map in the Manager, double-click the geofence name under **Available Geofences** or the set name under **Geofence Sets**.

12.4.2 Customizing Geofence Sets

The properties of each geofence set can be customized in the Geofence Manager. All geofences in the set will have the same appearance and activity status. Individual geofences cannot be customized.

Customizing the Appearance of Geofences in a Set:
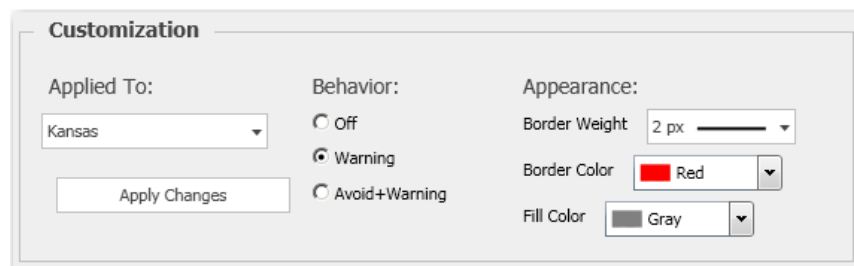
1. Under **Customization**, select a set from the **Applied To** drop-down.

2. To edit the **Fill Color** or **Border Color**, choose a new color from the drop-down.

3. Use the **Border Weight** drop-down to select a new width for the border.

4. Click **Apply Changes** to see these atributes appear on the map.

Designating the Behavior of Geofences in a Set:

1. Under **Customization**, select one of these **Behavior** options:

   Off: Geofences are not active. They do not affect the Detailed Route Report and are not visible on the map.

   Warning Only: Geofences are visible on the map, and a warning will appear in the Detailed Route Report at the points where the route begins to travel on a road segment that is part of a geofenced area. The warning will include the road name, geofence set name, and geofence name, for example:

   Warning * US 69 *: Montana Geofences: ButteMT

   Avoid + Warning: Geofences are visible on the map. The route will avoid road segments within the geofenced area if the **Use Avoid/Favors** is selected in the Route Options dialog or the current route profile. A warning will appear in the Detailed Route Report in cases where the route has to enter the geofence (for example, if the destination is within the geofenced area).

2. Click **Apply Changes** to save your selection.

Detailed Route Report with Geofence Warning

Renaming and Deleting Geofences and Sets:

To delete a geofence:

To permanently delete a geofence, highlight it in either the **Geofences In This Set** list or the **Available Geofences** list and click **Delete** below the list.

To delete an individual geofence directly from the map:

1. On the map, zoom to the location of the geofence you want to delete.

2. Click the **Delete** button at the top of the map. In Delete mode, your cursor will change to look like this: To exit from delete mode, select *Delete* again.

3. Click the geofence(s) you want to delete.

4. To exit from Delete mode, select **Delete** again.

To delete a set:

Under **Geofence Sets**, select the set you want to delete from the drop-down, then click **Delete** to the right.

To rename a set:

Under **Geofence Sets**, select the set you want to rename from the drop-down, click **Rename** to the right, type a new name in the prompt that appears, and click **Save**.

To edit a set:

To remove a geofence from a set and reassign it to the **Available Geofences** list, highlight it in the **Geofences In This Set** list and click **Remove From Set**.

12.4.3 Generating a Geofence Report

To create a report that shows all road segments included within the perimeter of a geofence, do the following:

1. Select the Tools tab > *Convert > Export Geofences*.

2. In the Save dialog, select a file type (*.txt or *.csv), enter a file name, and select a target location where the report will be saved.

To open the report, navigate to the folder where it was saved. If the report was saved as a *.txt file, it will open in Notepad. If it was saved as a *.csv file, it will open in Excel.

This report includes the following data: the name of the geofence, the set that the geofence belongs to, the corresponding road segments included in the geofence,

and the date the geofence was added. A sample *.txt report for two geofences is shown below.


```
New York, NY     NYC   03/20/2012
Circle      (40.758700N, 74.432373W)    (41.225150N, 73.814392W)
New York, NY     Springfield     03/20/20
Circle      (41.549372N, 74.099595W)    (43.0     N. 72.015344W)

NY-173.08  Tuxedo Park, NY 03/20/2012 NYC
I-87 (New York State Thruway)     5.40  Sloat
       NYC
Ramp  0.22  Sloatsburg, NY  03/20/2012 NYC
Ramp  0.04  Sloatsburg, NY  03/20/2012 NYC
Ramp  0.07  Sloatsburg, NY  03/20/2012 NYC
Ramp  0.04  Sloatsburg, NY  03/20/2012 NYC
Ramp  0.10  Sloatsburg, NY  03/20/2012 NYC
Route 72 (Sterling Mine Road)    0.17  Sloatsburg, NY  03/20/2012
       NYC
Ramp  0.10  Sloatsburg, NY  03/20/2012 NYC
Ramp  0.15  Sloatsburg, NY  03/20/2012 NYC
Greenwood Lake Turnpike (Route 511)   2.71  West Milford, NJ
       03/20/2012 NYC
Ramp  0.09  Sloatsburg, NY  03/20/2012 N
Ramp  0.26  Sloatsburg, NY  03/20/2012 NYC
Route 72 (Sterling Mine Road)    1.35  Sloatsburg,     03/20/2012
       NYC
Route 72 (Eagle Valley Road)     0.05  Sloatsb
       NYC
Route 72 (Sterling Mine Road)    1.62  Eagle V
       03/20/2012 NYC
Mill Pond Road  1.03  Ringwood, NJ     03/20/2
Sloatsburg Road 0.20  Ringwood, NJ     03/20/20
NY-170.51 Sloatsburg, NY  03/20/2012 NYC
Ramp  0.17  Sloatsburg, NY  03/20/2012 NYC
I-87 (New York State Thruway)    0.27  Sloatsburg, NY  03/20/2012
       NYC
```

List of road segments in both geofences begins here.

Geofence Location, Set Name, Date Created, Shape, and Defining Lat/Longs

Each listed road segment includes Segment, Length, Nearest Town, Date and Set Name

*Geofence Report in *.txt Format*

12.4.4 Geofence Behavior on the Map

By default, geofences that are created will initially appear on the map with light gray fill and a thin red border. Fill color and border width can be edited as described in section 12.4.2.

When a geofence is inactive (not assigned to a set, but still listed under "Availabe Geofences"), it will no longer be visible on the map though it is still saved.

There are also two settings in the Map Features dialog that affect the geofence display on the map: if **Avoids & Favors** is unchecked, the blue highlighting that designates road segments inside each geofence will be hidden; and if **Geofences** is unchecked, the geofence shapes will be hidden but the blue highlighting on affected road segments will still be visible. All geofences are affected by these settings.

12.4.5 Identify Points Within a Geofence Boundary

To determine if particular points lie within a geofence boundary, follow the steps below.

1. Select the Tools tab > G*eofence Options > Identify*.

2. Enter a location in the **City** field, with or without an **Address**. Any PC*MILER location is acceptable, including lat/long points and custom place names. If you enter a city name without an address, PC*MILER will use the city center of that town.
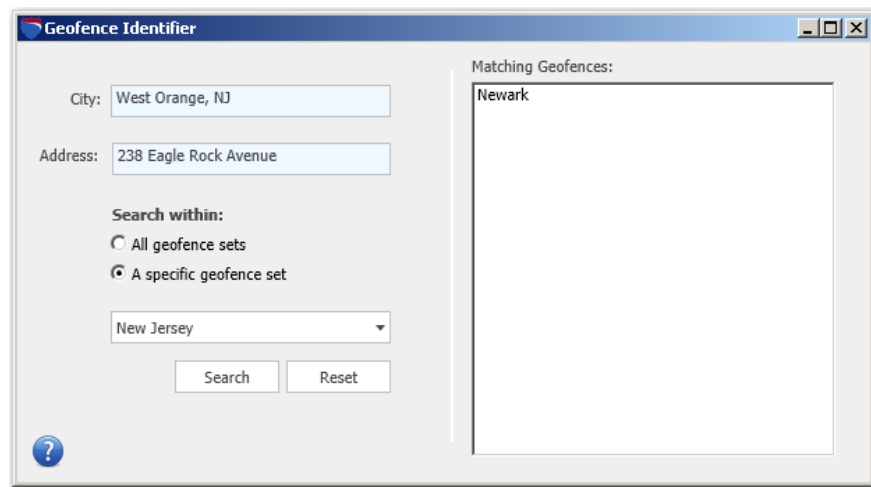
Geofence Identifier

3. Under **Search Within**, select to search **All geofence sets** for the location, or within **A specific geofence set**. Choose a set from the drop-down menu if you want to search within a specific set.

4. Click **Search**. All geofences that include the location will be listed under **Matching Geofences**. If the point is not within the boundary of any geofence, a "*No matches found*" message will appear.

5. Click **Reset** to clear the search before entering another location.

12.4.6 Using the Geofences Conversion Utility

If you created and saved geofences in the previous version of PC*MILER, you can easily import those files into Version 30 using the Geofences Conversion Utility. To do this, follow the steps below.

1. Select the Tools tab > *Convert* > *Import Geofences*.

2. In the window that opens, navigate to the saved geofences in the PC*MILER 29 installation folder (usually C:\ALK Technologies\PCMILER29\Data\ Base\save\geofences).

3. Select the files in the "geofences" folder and click **Open** to copy.

4. When the process is complete, close the dialog. The geofences should now be accessible in Version 30.

12.5 Backing Up Your Custom Files (Strongly Suggested)

It's always strongly suggested to back up important files frequently to a different location in case the unexpected occurs. The following customized data in PC*MILER can be backed up:

- Custom places
- Custom roads
- Geofences
- Default routing options
- Default road speeds
- Routing Profiles

To create a backup, copy your files into a separate folder, preferably one that is located on a second computer or device. Your custom data files can be found in a "Save" folder in the PC*MILER installation. The location of the Save folder in different types of PC*MILER installations is shown below:

- **PC*MILER 30 - NA - US/Canada Base**
  - C:\ALK Technologies\PCMILER30\Data\Base\save

- **PC*MILER 30 - NA - US/Canada Energy**
  - C:\ALK Technologies\PCMILER30\Data\NA_Energy\save

- **PC*MILER 30 - Highway WorldWide**
  - C:\ALK Technologies\PCMILER30\Data\WW\save

- **PC*MILER 30 - Streets Africa/Asia/Middle East/Oceania/South America**
  - C:\ALK Technologies\PCMILER30\Data\'xx'\save

13

Hazardous Material Routing

If the separate PC*MILER|HazMat data add-on module is installed, routing can be generated in North America, Europe and Oceania for various types of hazardous materials and dangerous goods using any PC*MILER route type.

To generate a route for hazardous materials, select a Hazardous Materials route type in the Route Options dialog > **Routing Preferences** tab for the open route or create/edit a route profile to use for hazmat routing (see sections 10.2 and 10.4).
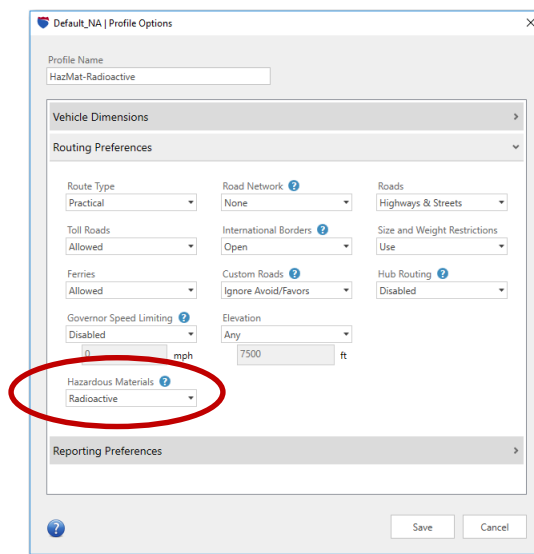
Hazmat Route Type Set in Profile Options > Routing Preferences Tab

Hazardous material routing options for North America include: **Other**, **Corrosive**, **Explosives**, **Flammable**, **Inhalants**, and **Radioactive**. When Europe or Oceania is the selected region, the options are: **Other**, **Explosives**, **Flammable**, and **Harmful to Water** (with additional tunnel restrictions categories in Europe – see Table 2 below).

Tables 1 and 2 below show how each PC*MILER hazmat route type handles each hazmat road category. **Table 3** shows U.S. DOT Hazmat classes and the corresponding PC*MILER route type.

NOTE: The "Other" option should be used for any hazardous material that presents a danger during transportation and is not corrosive, explosive, flammable, inhalant, or radioactive. Common examples include: oxidizers (such as compressed oxygen tanks), combustible liquids (such as diesel fuel), and poisons (such as pesticides).

TABLE 1: PC*MILER Hazardous Material Route Types and Road Categories

favor   = routing will prefer these segments
no change   = routing will not be altered in any way
avoid   = routing will go around these segments whenever possible
discourage = a lesser degree of avoidance, used when a state or road authority allows hazmat only at certain times of day, with prior notification, by permit, or in limited quantities, and for tunnels not otherwise classified

#	Hazmat Routing Category	Other	Corrosive	Explosives	Flammable	Inhalants	Radioactive	Detailed Route Report	Hazmat Map Legend
1	Alternate	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
2	Preferred	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
3	Designated	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
4	Prohibited	avoid	avoid	avoid	avoid	avoid	avoid	Prohibited	Prohibited
5	Restricted	discourage	discourage	discourage	discourage	discourage	discourage	Restricted	Restricted
6	Harmful to Water Prohibited	no change	no change	no change	no change	no change	no change	Harmful to Water Prohib.	Some Cmds Prohib
7	Explosive Designated	no change	no change	favor	no change	no change	no change		Desig Expl
8	Inhalant Designated	no change	no change	no change	no change	favor	no change		Desig Inhal
9	Explosive & Inhalant Designated	no change	no change	favor	no change	favor	no change		Desig/Pref/Alt
10	Tunnel	discourage	discourage	discourage	discourage	discourage	discourage	Tunnel	Restricted
11	Tunnel & Alternate	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
12	Tunnel & Preferred	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
13	Tunnel & Designated	favor	favor	favor	favor	favor	favor		Desig/Pref/Alt
14	Tunnel & Prohibited	avoid	avoid	avoid	avoid	avoid	avoid	Prohibited Tunnel	Prohibited
15	Tunnel & Restricted	discourage	discourage	avoid	avoid	avoid	avoid	Restricted Tunnel	Restricted
16	Tunnel & Large Explosive, Inhalant, and Flammable Prohibited	no change	no change	no change	no change	no change	no change	Many Cmds Prohib.	Some Cmds Prohib
17	Tunnel & Large Explosive and Inhalant Prohibited	no change	no change	no change	no change	no change	no change	Expl. & Inhal. Prohib.	Some Cmds Prohib
18	Caustic, Explosive, Flammable & Radioactive Prohibited	no change	avoid	avoid	avoid	no change	avoid	Many Cmds Prohib.	Some Cmds Prohib
19	Explosive Restricted	no change	no change	discourage	no change	no change	no change	Explosive Restricted	Restricted
20	Tunnel & Very Large Explosive Prohibited	no change	no change	no change	no change	no change	no change	Explosive Restricted	Some Cmds Prohib
21	Explosive & Flammable Prohibited	no change	no change	avoid	avoid	no change	no change	Expl. & Flam. Prohib.	Some Cmds Prohib
22	Radioactive Preferred	no change	no change	no change	no change	no change	favor		Desig Rad

(continued on next page)

#	Hazmat Routing Category	Other	Corrosive	Explosives	Flammable	Inhalants	Radioactive	Detailed Route Report	Hazmat Map Legend
23	Radioactive Designated	no change	no change	no change	no change	no change	favor		Desig Rad
24	Radioactive Prohibited, Explosive Restricted	no change	no change	discourage	no change	no change	avoid	Rad. Prohib., Expl. Restr.	Some Cmds Prohib
25	Radioactive Prohibited	no change	no change	no change	no change	no change	avoid	Radioactive Prohibited	Some Cmds Prohib
26	Escort Needed	no change	no change	no change	no change	no change	no change	Escort	None
27	Explosive and Flammable & Harmful to Water Prohibited	no change	no change	avoid	avoid	no change	no change	Many Cmds Prohib.	Some Cmds Prohib
28	Explosives, Inhalant & Radioactive Designated	no change	no change	favor	no change	favor	favor		Desig/Pref/Alt
29	Radioactive & Explosive Designated	no change	no change	favor	no change	no change	favor		Desig/Pref/Alt
30	Radioactive & Explosive Prohibited	no change	no change	avoid	no change	no change	avoid	Rad. & Expl. Prohib.	Some Cmds Prohib
31	Radioactive & Explosive	no change	no change	discourage	no change	no change	discourage	Rad. & Expl. Restr.	Restricted

NOTE: U.S. hazardous material routing restriction/designation information taken from *The National Hazardous Materials Route Registry* provided by the Federal Motor Carrier Safety Administration (FMCSA); and various other state and federal sources. Canadian hazmat/dangerous goods routing data derived from government and municipal sources in each Province and Territory, and includes restrictions for major Canadian bridges and tunnels.

TABLE 2: **PC*MILER Hazardous Materials Route Types and Road Categories –**
EU Harmful to Water and EU Tunnels

(PC*MILER|Worldwide or DTOD Data must be installed) For PC*MILER|Worldwide and
DTOD users, the hazmat categories below are used in the Europe and Oceania regions.

#	Hazmat Routing Category	EU Harmful to Water	EU Tunnel B, C, D, E	EU Tunnel C, D, E	EU Tunnel D, E	EU Tunnel E
0	None	no change	no change	no change	no change	no change
1	Alternate	no change	no change	no change	no change	no change
2	Preferred	no change	no change	no change	no change	no change
3	Designated	no change	no change	no change	no change	no change
4	Prohibited	avoid	no change	no change	no change	no change
5	Restricted	no change	no change	no change	no change	no change
6	Harmful to Water Prohibited	avoid	no change	no change	no change	no change
7	Explosive Designated	no change	no change	no change	no change	no change
8	Inhalant Designated	no change	no change	no change	no change	no change
9	Explosive & Inhalant Designated	no change	no change	no change	no change	no change
10	Tunnel	no change	no change	no change	no change	no change
11	Tunnel & Alternate	no change	no change	no change	no change	no change
12	Tunnel & Preferred	no change	no change	no change	no change	no change
13	Tunnel & Designated	no change	no change	no change	no change	no change
14	Tunnel & Prohibited	no change	avoid	avoid	avoid	avoid
15	Tunnel & Restricted	no change	no change	no change	no change	no change
16	Tunnel & Large Explosive, Inhalant, and Flammable Prohibited	no change	avoid	avoid	avoid	no change
17	Tunnel & Large Explosive and Inhalant Prohibited	no change	avoid	avoid	no change	no change
18	Caustic, Explosive, Flammable & Radioactive Prohibited	no change	no change	no change	no change	no change
19	Explosive Restricted	no change	no change	no change	no change	no change
20	Tunnel & Very Large Explosive Prohibited	no change	avoid	no change	no change	no change
21	Explosive & Flammable Prohibited	no change	no change	no change	no change	no change
22	Radioactive Preferred	no change	no change	no change	no change	no change
23	Radioactive Designated	no change	no change	no change	no change	no change
24	Radioactive Prohibited, Explosive Restricted	no change	no change	no change	no change	no change
25	Radioactive Prohibited	no change	no change	no change	no change	no change
26	Escort Needed	no change	no change	no change	no change	no change
27	Explosive and Flammable & Harmful to Water Prohibited	avoid	no change	no change	no change	no change
28	Explosives, Inhalant & Radioactive Designated	no change	no change	no change	no change	no change
29	Radioactive & Explosive Designated	no change	no change	no change	no change	no change
30	Radioactive & Explosive Prohibited	no change	no change	no change	no change	no change
31	Radioactive & Explosive	no change	no change	no change	no change	no change

TABLE 3: **U.S. DOT Hazmat Classes and Corresponding PC*MILER Hazmat Route Types**

The table below shows how the wording used for PC*MILER hazmat routing options, which is derived from industry-standard placarded descriptions of hazardous materials, corresponds to the U.S. Department of Transportation Hazmat classifications. See sections 13.1 - 13.2 below on how to use this table.

U.S. DOT Hazmat Classes (corresponding PC*MILER routing options are **bolded**)

Class 1: Explosives – **Explosive**

Class 2: Compressed Gases
        2.1: Flammable Gas – **Flammable**
        2.2: Non-Flammable Compressed Gas – **Other**
        2.3: Poisonous Gas – **Inhalant**

Class 3: Flammable and Combustible Liquid – **Flammable**

Class 4: Flammable Solids
        4.1: Flammable Solid – **Flammable**
        4.2: Spontaneously Combustible Material – **Flammable**
        4.3: Dangerous When Wet Material – **Other**

Class 5: Oxidizers – **Other**

Class 6: Poisons
        6.1: (part) Inhalation Hazard – **Inhalant**
        6.1: (balance) – **Other**
        6.2: Infectious Substance (Etiologic agent) ["Biohazard"] – **Other**

Class 7: Radioactive Materials – **Radioactive**

Class 8: Corrosive Liquids – **Corrosive ("Caustic" in PC*MILER 22 and earli**

Class 9: Miscellaneous – **Other**

13.1 Determining Which Route Type to Use

NOTE: Hazmat regulations for a particular tunnel on a route should be checked if there is any doubt about which materials are permitted, as regulations may change over time and might not be included in the version of the PC*MILER database that you are currently using.

The shipper of hazardous materials is legally responsible for determining the U.S. DOT Hazmat Class for their shipment and communicating that class to the carrier in their shipping papers.

To determine the U.S. DOT Hazmat Class, go to the online 49 CFR 172.101 at www.ecfr.gov. Once the Class is identified for a shipment, use Table 2 above to determine which route type should be used when generating a PC*MILER route for that shipment.

For example, on the government web site, hydrogen is classified as a Flammable Gas (DOT class 2.1), while oxygen, nitrogen, carbon dioxide, and argon are Non-Flammable Compressed Gases (DOT class 2.2).

Using Table 2 above, DOT class 2.1 corresponds to the PC*MILER Hazmat route type "Flammable", while DOT class 2.2 corresponds to the PC*MILER Hazmat route type "Other".

13.2 Routing Multiple Hazmat Classes

For routing a single shipment containing multiple hazmat classes, the following procedures are suggested:

1. First, determine the weight of each commodity and check the U.S. DOT (PHMSA) rule to see if that combination is permissible and if so, which placard(s) are to be used.

2. Then, for each placard, look up the PC*MILER|Hazmat routing options in the table above.
   a. If all the placards correspond to one routing option, use that option.
   b. If the placards correspond to multiple routing options, then run the route for each option, and:
      i. If all the routes are the same, that common route is the route to be used.
      ii. If the routes are different, then there may or may not exist a legal route for that combination of commodities for the specified origin/destination (this will occur only rarely).

13.3 Changing the Status of Hazmat-Prohibited Roads

Customers who have obtained permits can change the status of hazmat-prohibited roads as follows:

1. First make sure "Hazardous Materials" is checked in the Map Features dialog (Map tab > *Map Features*).

2. Select the Tools tab > *Adjust for Permits*.

3. In the map window click on the prohibited road(s) that you wish to make accessible for routing. The adjusted route segments will change color (the color will depend on which map style is currently active).

All user-created road preferences are saved and managed in the **Haz Permits** tab of the Avoid/Favor Manager (Tools tab > *Manage* – see section 12.1.1). A comment may be added to each record, either by typing a comment in the Add

Comment dialog that appears when a road segment is clicked or by entering it directly in the Avoid/Favor Manager.
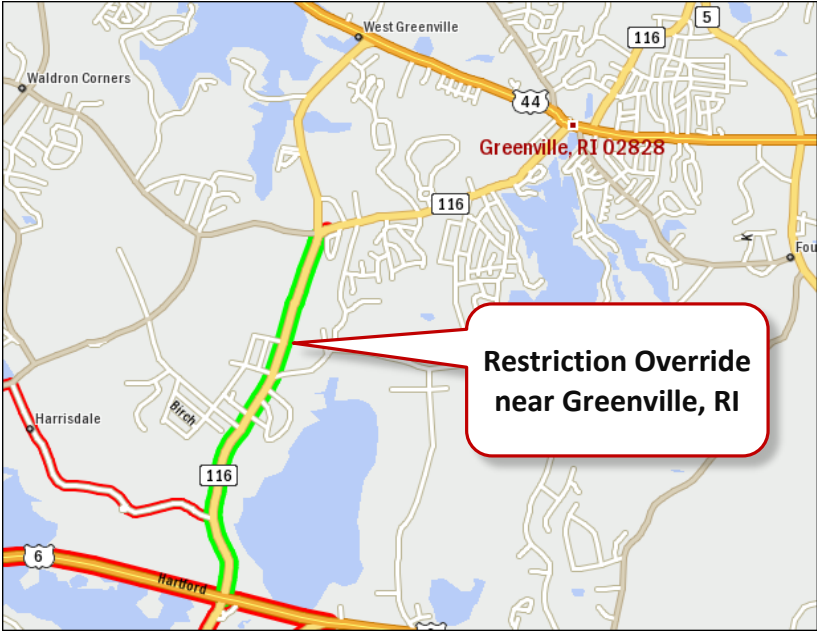
HazMat Restriction Override Shown on the PC*MILER Map

The custom road settings you create can be removed by clicking again on the same roads with the **Adjust for Permits** tool active, or by using the Avoid/Favor Manager.

13.4 Hazardous Material Routing on the PC*MILER Map
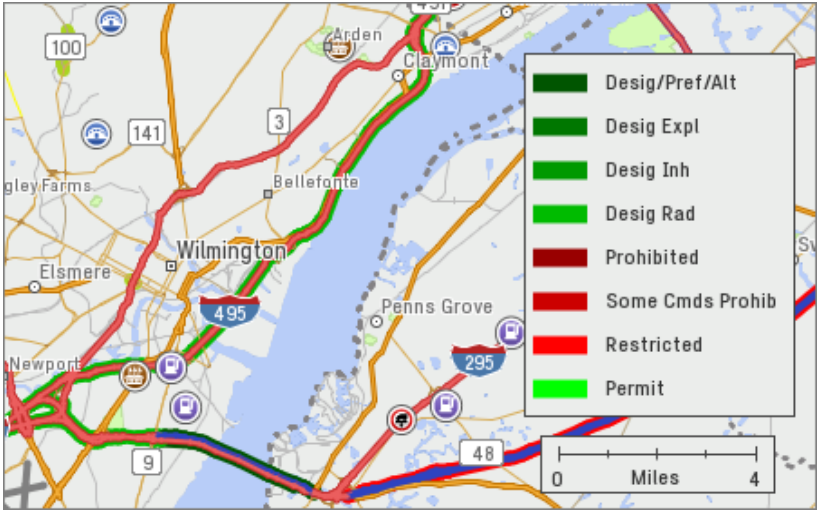
Map Showing Hazmat Restricted Roads & Restrictions Legend

With the PC*MILER|HazMat add-on data module installed, hazmat-prohibited and -designated roads will be highlighted in the PC*MILER map window provided this feature is checked in the Map Features dialog (see TIP below). The Restrictions legend shows the highlight color for various designations (to show/hide this legend, select the Map tab > Customize > *Legends*).

TIP: If you don't want hazmat routing to show up on maps, the highlighting can be hidden from view by turning off the **Hazardous Material** feature in the Map Features dialog. Select the Map tab > *Map Features* and uncheck "Hazardous Material", then click **OK** to save.
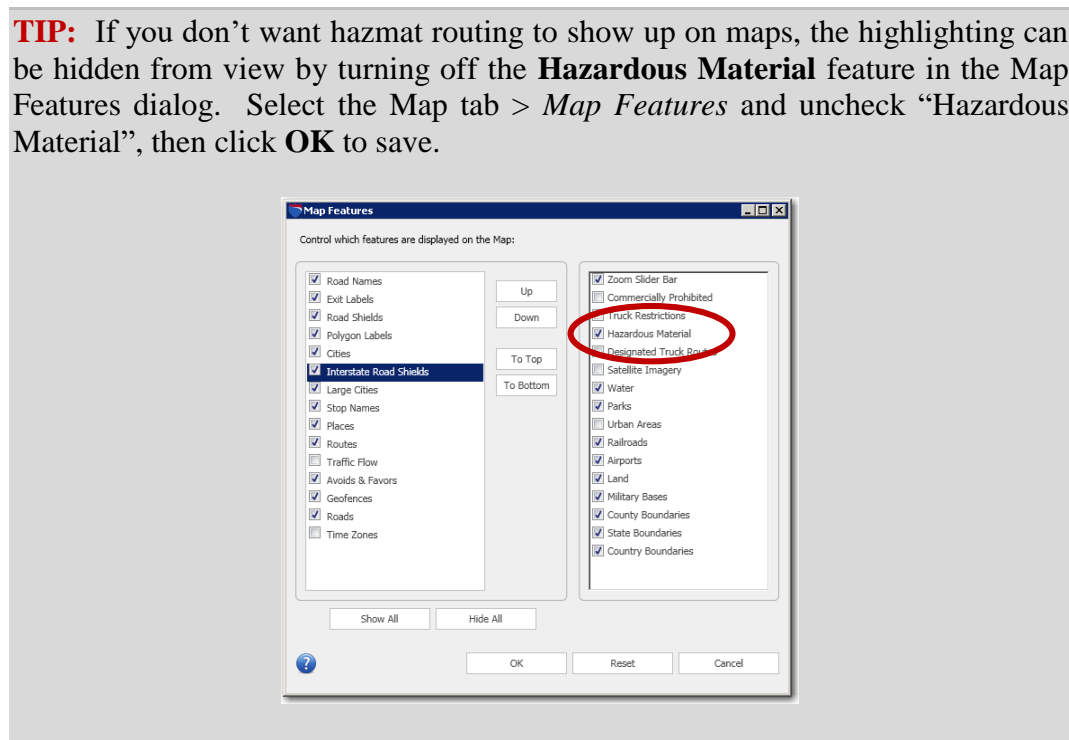
PC*MILER now offers users an integrated energy-focused map data set for the oil and gas industry. Through partnership with GEOTrac Systems Inc. of Calgary, ALK has created the PC*MILER|Energy data set that includes access roads and infrastructure coverage across states and provinces in North America where oil and gas wells are actively developed and known reserves are found.

PC*MILER|Energy is available as a separate add-on data module for PC*MILER (your PC*MILER installation must also include the PC*MILER|Streets). With these three modules installed, PC*MILER|Energy gives users the ability to:

- plot the latitude/longitude of a wellhead, facility or land survey address and route directly to it, then view that route on the PC*MILER map;
- generate turn-by-turn directions on leased or bonded roads in and out of well sites and other facilities;
- assign a custom average road speed to all roads classified as "Energy Road" in the PC*MILER|Energy dataset for ETA accuracy;
- switch between the base PC*MILER map data set, accessible to general users of PC*MILER, and the PC*MILER|Energy oil- and gas-specific data set;
- use the PC*MILER Import Custom Place Wizard to customize the PC*MILER database with specific wellhead, facility and land survey addresses, and group those locations into one or more POI (point of interest) category (see section 3.15.5).

*Satellite View of a PC*MILER|Energy Route To a Wellhead*

The PC*MILER|Energy road network currently includes approximately 365,674 miles of access roads that are not included in the base PC*MILER map data set.

These roads are found in the following states and provinces: Alberta, British Columbia, Manitoba, and Saskatchewan in Canada; and Arkansas, Colorado, Louisiana, Mississippi, Montana, New York, North Dakota, Ohio, Oklahoma, Pennsylvania, Texas, Utah, West Virginia, and Wyoming.

PC*MILER Version 30 also gives users access to land survey addresses from the Public Land Survey System (PLSS) and the Dominion Land Survey (DLS) including Land Survey Grids (LSDs)*. Land survey POIs give users the ability to route to locations on roads that were created too recently to be included in the most current update of PC*MILER's energy road database.

* *Oil and Gas field content provided by GeoTrac Systems Inc. ©Copyright 2016.*
  All rights reserved.

14.1 Accessing the PC*MILER|Energy Data Set

With PC*MILER|Energy data purchased and installed, select the Map tab > *Change Data Set* and select *NA Energy*. (If PC*MILER|Energy data has not been installed yet, see section 2.5.5.) The currently loaded data set will be displayed in the title bar of the PC*MILER map window, shown at the bottom of each page in any reports that are generated, and checked in the *Change Data Set* menu. To switch to another data set, simply select it in the menu.

To route with the Energy data set, the **Highway & Streets** option must be selected as a route option or profile option (see sections 10.2-10.4) and the region must be **North America** in Application Settings (see section 10.1.1). Options listed at the top of the route entry window should include "Streets", indicating that local streets will be included in routing calculations, and "North America" as the region.
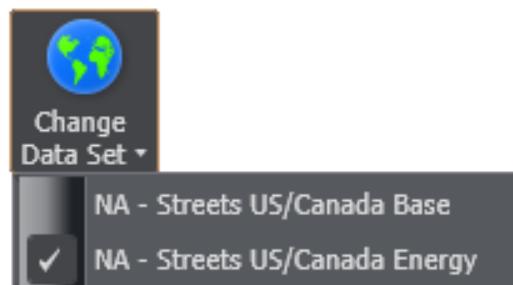
Change Data Set Menu

14.1.1 Searching for Land Survey Addresses

If PC*MILER|Energy and PC*MILER|Streets are licensed and installed, PC*MILER|Energy users now have access to land survey addresses from the Public Land Survey System (PLSS) and the Dominion Land Survey (DLS) including Land Survey Grids (LSDs). Users can search for a land survey name with an exact 12-character match, for example, "**SW NW S27 T010N R020W**". These locations can be added as stops on a route, saved as custom places, and displayed on the map.
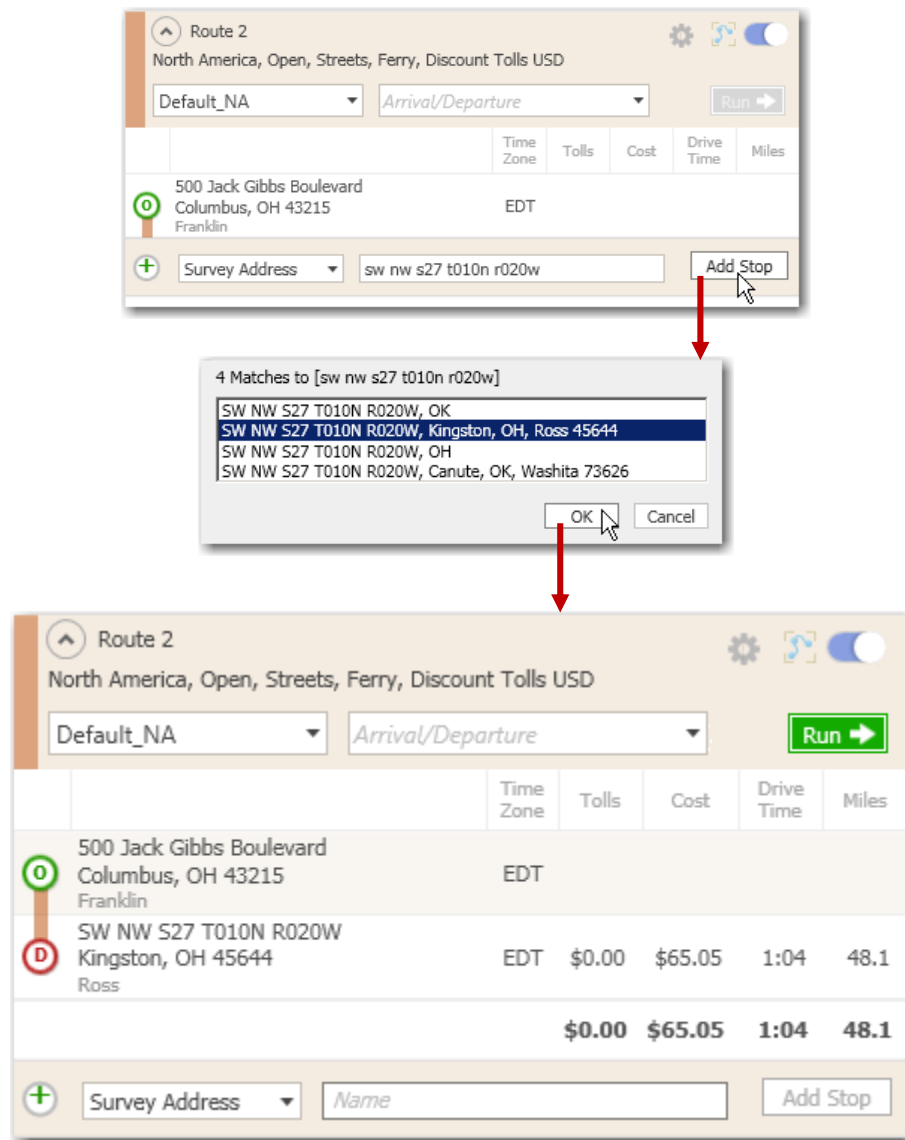
Generated Trip To a Survey Address

14.2 PC*MILER|Energy Routing and Mapping

With the *NA Energy* data set selected and local street routing activated, you are ready to generate PC*MILER routes directly to the latitude/longitude points where wellheads or other oil and gas facilities are located, using leased or bonded access roads to get there. For lat/long formats that PC*MILER accepts as stops, see section 3.5.17. Use the 6-digit decimal format for precision and best results.
Locations can also be picked off the map using the mouse – see section 3.5.25. To change the map to a satellite view, select the Map tab > *Map Style.* An Internet connection is required to display satellite images.

The two routes shown below illustrate the difference between a route calculated using the PC*MILER|Energy data set and one that does not use the Energy data. The route run without Energy data uses the air distance between wellheads.

Routing at a Well Site Near Odessa, TX – Using Energy Data
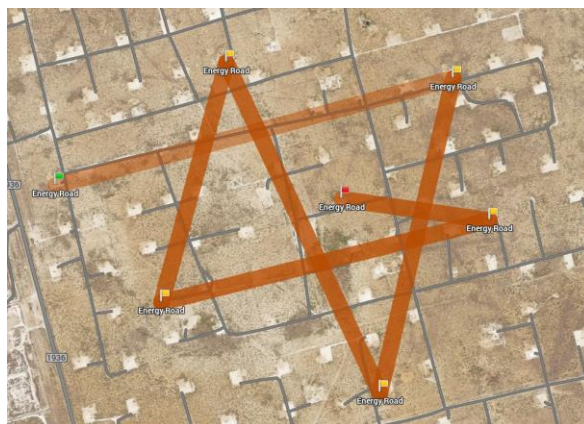
Routing at a Well Site Near Odessa, TX – Without Energy Data
(Route Uses Air Distances)

14.3 Energy Roads in Reports

Roads that provide access into and out of well sites and other energy-related facilities are classified as "Energy Roads" on the PC*MILER map and in PC*MILER reports. Examples of how Energy Roads are identified in three report types are below.

Driving directions		Odometer	Time	Delay	
31.907374N,102.462237W, TX					
Go east on Energy Road					
Drive less than 0.1 miles					
Stay on Energy Road as it turns left					
Drive less than 0.1 miles					
Stay on Energy Road as it turns right					
Drive 0.3 miles (~2 min)		0.3	0:02		
Stay on Energy Road as it turns right					
Drive 1.0 miles (~6 min)		1.3	0:08		
Stay on Energy Road as it turns right					
Drive 0.3 miles (~2 min)		1.6	0:10		
Stay on Energy Road as it turns left					
Drive 1.0 miles (~6 min)		2.6	0:16		

Detailed turn-by-turn driving directions on Energy Roads

Driver's Report (Driving Directions)

Stop 1: 79760 Odessa, TX, Ector   (On-Duty)

				0:00	(On-Duty)		8.5	0:26	8.5	0:26	0.00
TX	West	E 4th St	0.1	0:00	+ E 4th St US-385		0.1	0:00	8.6	0:26	0.00
TX	North	US-385 - N Grant Ave	0.9	0:02	+ US-385 TX-450 Spur		1.1	0:02	9.5	0:29	0.00
TX	West	TX-450 Spur - Kermit Hwy	2.8	0:07	+ TX-450 Spur		3.9	0:09	12.3	0:35	0.00
TX	West	TX-302	1.7	0:02	+ TX-302 Energy Road		5.6	0:11	14.1	0:37	0.00
TX	Right	Energy Road	1.0	0:06	+ Energy Road Energy Road		6.6	0:17	15.1	0:43	0.00
TX	Right	Energy Road	0.2	0:01	+ Energy Road Energy Road		6.8	0:18	15.3	0:44	0.00
TX	Left	Energy Road	0.1	0:01	31.899521N,102.447642W, TX		6.9	0:18	15.4	0:45	0.00
Arrive Loaded											

Detailed Route Report

Route 1 : 31.907374 N, 102.462237 W, TX to 31.90685 N, 102.449369 W, TX : 5 Stops
Miles: 20.7   Time: 1:17   Cost: $56.86
Truck Config: Weight: 80000lbs   Height: 13ft 6in   Length: 48ft 0in   Width: 96in   Axles: 5
North America, Practical, Borders Open, Use Local Streets, Discount Tolls USD, Ferry Distance

Stop		Leg Miles	Total Miles	Leg Cost	Total Cost	Leg Hours	Total Hours	Leg Tolls	Total Tolls	Leg Est.GHG	Total Est.GHG
	31.907374N,102.462237W, TX	0.0	0.0	0.00	0.00	0:00	0:00	0.00	0.00	0.0	0.0
79760	Odessa, TX, Ector	8.5	8.5	20.13	20.13	0:26	0:26	0.00	0.00	29.1	29.1
	31.899521N,102.447642W, TX	6.9	15.4	14.60	34.73	0:18	0:45	0.00	0.00	23.5	52.6
	31.912015N,102.454549W, TX	1.8	17.2	7.55	42.28	0:11	0:56	0.00	0.00		
	31.902941N,102.457468W, TX	1.7	18.8	6.80	49.08	0:10	1:06	0.00	0.00		
	31.906048N,102.442709W, TX	1.1	20.0	4.64	53.72	0:07	1:12	0.00	0.00		
	31.906850N,102.449369W, TX	0.8	20.7	3.14	56.86	0:05	1:17	0.00	0.00		

State/Country	Total	Toll	Free	Ferry	Loaded	Empty	Toll($)	Energy
TX	20.7	0.0	20.7	0.0	20.7	0.0	0.00	9.3
US	20.7	0.0	20.7	0.0	20.7	0.0	0.00	9.3
TOTAL	20.7	0.0	20.7	0.0	20.7	0.0	0.00	9.3

Energy Column in the State Mileage Summary

State/Country Distance Report

Beginning in PC*MILER Version 29, ALK Cloud Services is available for users who are interested in storing and sharing data. *(An active Internet connection is required to use ALK Cloud Services.)*

The benefits of using ALK Cloud Services include:

- Allows users to seamlessly and securely create, modify, and share user-generated data.

- Provides reliable backup and restoration of user-generated data.

- Provides a common company account and user login.

Currently, ALK Cloud Services enables sharing of custom place data generated by users of the PC*MILER user interface. It also enables PC*MILER|TripDirect users to dispatch routes and trip options to drivers equipped with ALK's CoPilot Truck navigation software on mobile devices in the cab. (See Chapter 16 for a description of the TripDirect feature.)

15.1 Creating an ALK Cloud Account
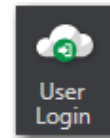
1. Select the ALK Cloud tab > *User Login.*

2. In the ALK Cloud Login dialog, click the secure link to the right:

3. On the web page that opens, click <u>or Sign Up</u>:
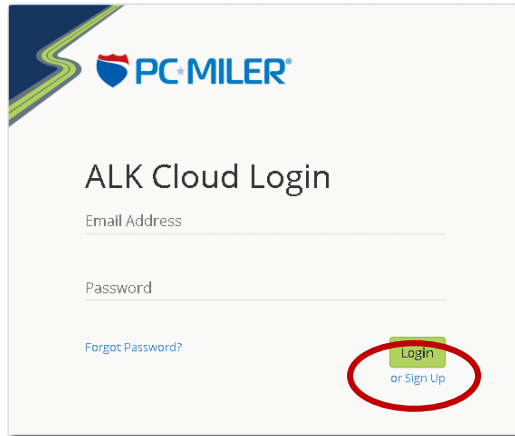
4. In the ALK Cloud Signup screen, enter a unique, valid email and click **Continue**.
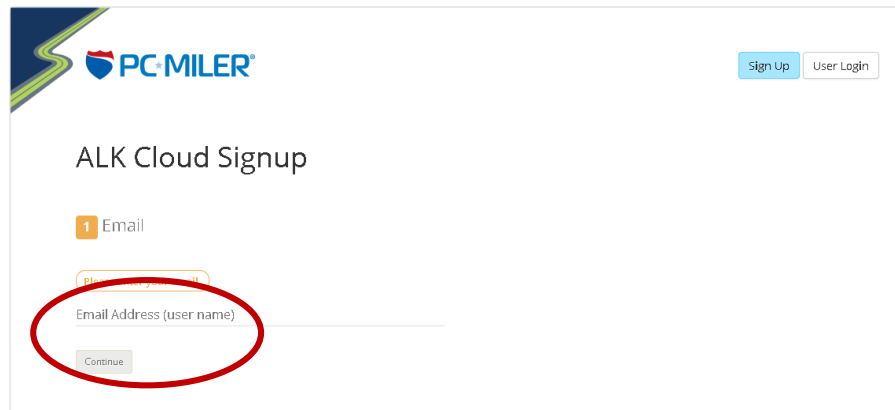
5. In the next screen, enter a first and last name, a password (8 characters or more), and a name for this new account, then click **Submit**.
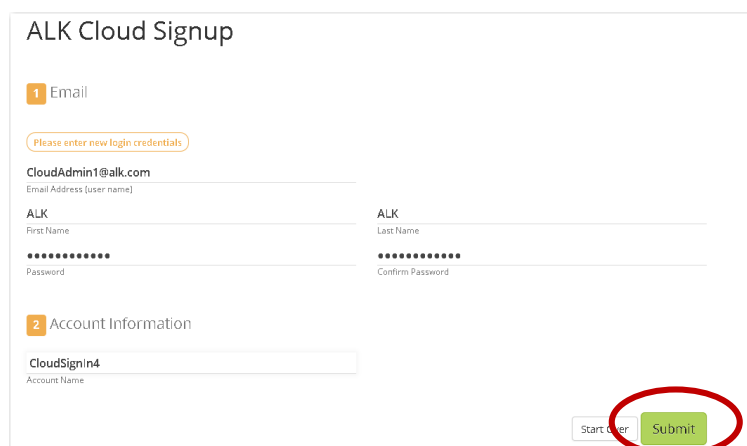
6. After a few seconds of processing, you should see a login screen that displays the message "**You have successfully signed up**" and you will receive an email confirming that you created an account. You can **Login** immediately

from this screen or close the web page and login later from the ALK Cloud ribbon in PC*MILER.
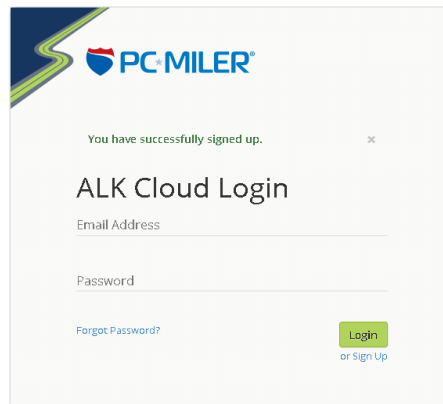
15.2 Login, Settings and Options

To login to your new account from PC*MILER, select the ALK Cloud tab > *User Login* and enter the user name (email) and password that you used to create the account. If there is more than one account associated with the email you enter, you will also need to pick an account from the drop-down list that appears under your password:
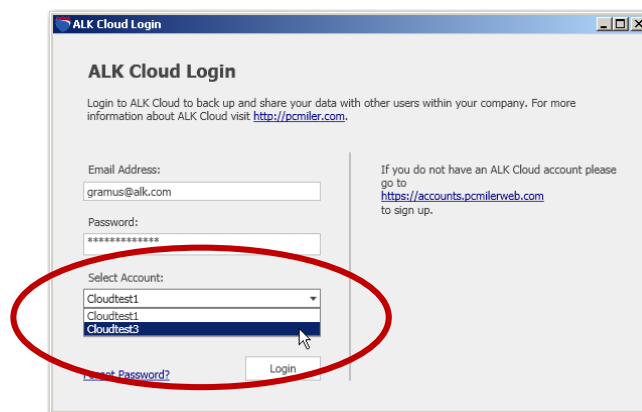
If the login was successful, you'll see the icon on the ALK Cloud tab turn green:

After login, select the ALK Cloud tab > *Manage Account* to bring up the *Manage ALK Cloud Account* web page. You'll be asked to login again first.
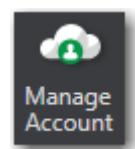
When you set up a new Cloud account, you are automatically given administrator status for that account. As an administrator you can add or disable users on the account, permanently cancel the account, and change your own password.

Users on an account may be given administrative rights by the original administrator, and one user can join multiple accounts.

NOTE: ALK Cloud account activity is logged in a "log.db" file found in the App\log folder of the PC*MILER installation folder (usually C:\ALK Technologies\PCMILER30\App\log).
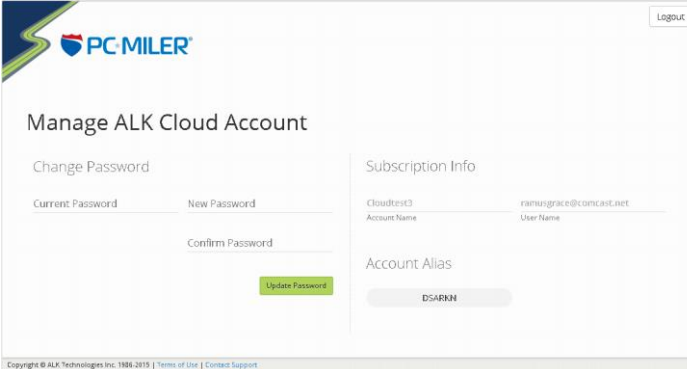
15.2.1 Adding/Deleting Users

To add a user to the account, click **Add User to Account**, enter a first and last name and email address, then click **Add**. The user will be added to the account and will receive a Welcome email from ALK Cloud Services that includes a link to create a password.

When the new user has been added to the **Account Users** list, check the **Account Administrator** column if you want to give this user administrative rights. By default, each new user you add will be **Enabled**. An administrator can disable a user temporarily by unchecking this option, or by clicking the garbage can icon in the **Remove** column. The deleted user's ID will remain on the list but the user will no longer have access to the account.

15.2.2 Administrators vs. Non-Admin Users

Users who do not have administrator rights won't see the **Account Users** list, the **Cancel Account** button, or the **Regenerate** button for the account Alias. They can change their password, and view subscription information and the account Alias. Here is what the non-admin user's account management page looks like:

15.2.3 How Is the Account Alias Used?

The Account Alias is a system-generated string of six letters that uniquely identifies your account on the cloud. It is displayed on the ALK Cloud ribbon in PC*MILER when a PC*MILER user logs into the account. The Alias can be given to remote users to allow them to join the account and receive TripDirect routes on their mobile devices while using CoPilot (see Chapter 16 for more on PC*MILER|TripDirect).

To disable an Alias and create a new one for the account, an administrator can click **Regenerate**.

15.3 Sync Data

> **NOTE:** To sync data on the Cloud, you must login to the same ALK Cloud account on both the server and the workstation. Even if you login to the ALK Cloud account on your workstation, but you are not logged into the same account on the server, syncing won't work.

Syncing your custom place data makes it available to all other users on the ALK Cloud account that you are logged into. The goal is to provide built-in sharing and backup of this data so that users need not manage their custom places manually and can share files over a network. Here are a few things to keep in mind regarding data syncs:

- Only one user at a time may edit the data set on the ALK Cloud (by syncing), simultaneous editing is not currently supported.

- Data syncs always apply in both directions (to and from the cloud) and data from the ALK cloud is synced back to users as a complete set. Data will never be partially synced. **Syncing your data will overwrite any local unsynced data sets.**

- **All users on the Cloud should sync up immediately after login** to avoid the possibility of data loss. As an illustration, consider the following scenario: User 1 creates 50 custom places and then syncs her data. A few minutes after User 1's sync, User 2 creates 50 custom places without syncing first, and then syncs his data. In this scenario, User 1's data would overwrite User 2's data and User 2 would lose his custom places because he did not sync before starting his local edits.

- **Cloud data is not available when the user is not logged in.** Only data that was created locally when the user was offline will be available.

- **A user should not choose to use the Cloud sometimes and not other times.** Participation in ALK Cloud Services is optional. Users may choose to continue storing data locally. However, intermittent use of ALK Cloud Services would create a non-optimal situation in which the most up-to-date or desired data might not be available to other Cloud users.

To sync your data, select *Sync Data* on the ALK Cloud ribbon in the PC*MILER application window.

PC*MILER|TripDirect by ALK Technologies is an add-on to the PC*MILER user interface that provides a direct link between two of ALK's existing industry-standard products: PC*MILER routing, mileage and mapping software in the back office and CoPilot® Truck™ – ALK's truck-specific GPS navigation system for mobile devices – in the vehicle.

NOTE: PC*MILER|Streets and PC*MILER|TripDirect must be licensed and installed, and you must have an active Internet connection to use TripDirect. ALK's CoPilot Truck navigation software is downloaded from an app store and used in the cab.

For hardware and software requirements, see section 2.1.2. TripDirect is for the PC*MILER user interface only, it cannot be used with PC*MILER|Connect or integrated with third-party software. If integration features are needed, PC*MILER|Connect can be purchased to provide this functionality via RouteSync API's – see the product description at www.pcmiler.com/Integration.

PC*MILER, synced with CoPilot Truck in the cab via PC*MILER|TripDirect, now offers the transportation and logistics industry a unique tracking and route management capability. PC*MILER route compliance ensures that CoPilot Truck will follow user-defined routing (Practical, Hazmat, Toll Discouraged, etc.) that includes vehicle dimensions and custom avoid/favor routing preferences.

TripDirect is an ideal fit for motor carriers, private fleets and owner operators who need to maintain operational consistency between PC*MILER operations and accounting functions in the back office and their vehicles. It offers a flexible approach to minimizing the mileage variance between actual and planned routes.

From the back office, TripDirect in the PC*MILER user interface can be used for:

- send routes including trip options* and stops from the PC*MILER user interface to CoPilot Truck in the cab;
- send a PC*****MILER route's lat/long sequence to CoPilot Truck;
- tell CoPilot Truck how strictly its in-cab directions should follow the exact route calculated by PC*MILER for a trip;
- provide Out-of-Route warnings to drivers via CoPilot when they depart from the prescribed route, exceeding a specified distance from the route.

* *Avoid/favor options are the exception, they cannot be sent directly via TripDirect. Avoid/favor road preferences must be set in PC*MILER for the calculation of a route before it is sent to CoPilot.*

16.1 Getting Started With TripDirect

To use TripDirect, you must first log in to an ALK Cloud Services account. To set up an account, see section 15.1.

After setting up a Cloud account, follow these steps to get started:

1. Open PC*MILER and select the ALK Cloud tab > *User Login.*
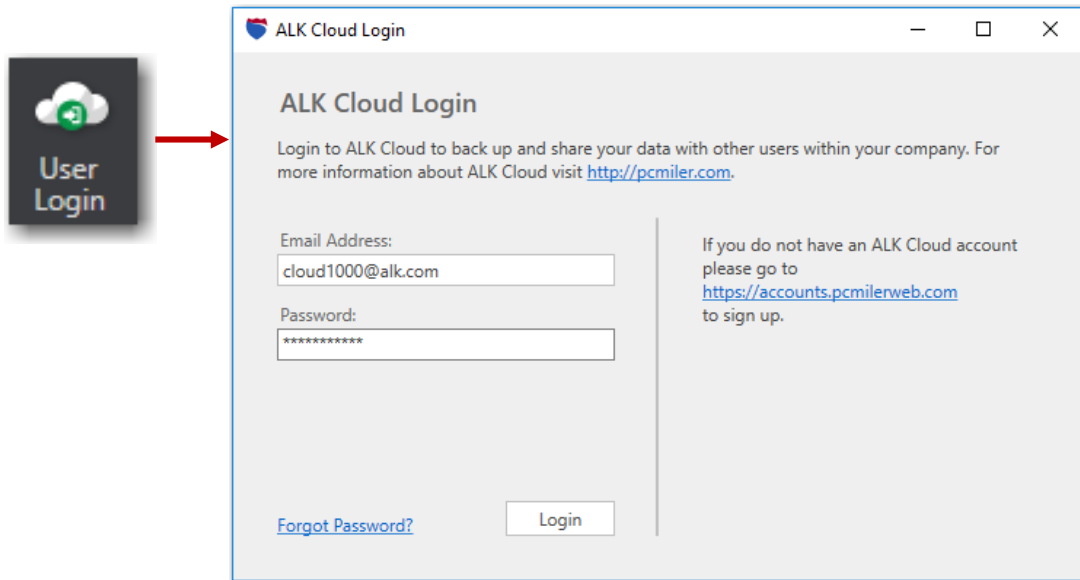
2. Enter the email address and password that were used to create an ALK Cloud Services account, and click **Login**.

3. If the login attempt was successful, you'll see the icon on the ALK Cloud tab turn green. You'll also see an Account Alias code, which can be used to add drivers to your ALK Cloud account (see below).
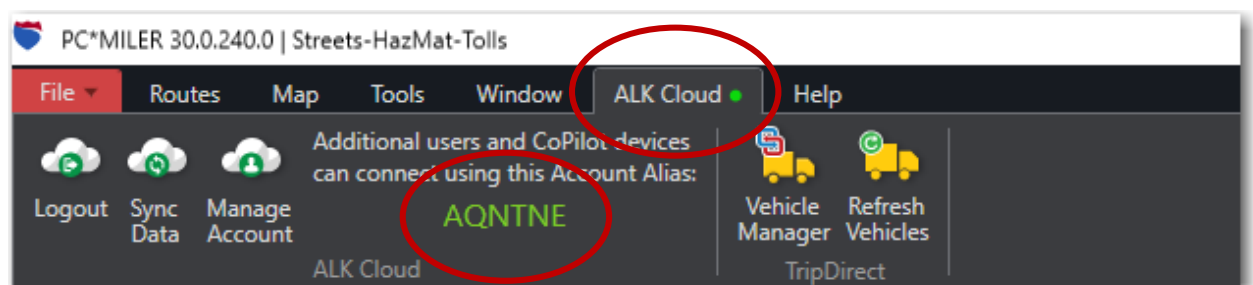
16.2 Adding Drivers

To invite CoPilot-equipped drivers to join your ALK Cloud account:

1. After login, select the ALK Cloud tab > *Manage Account* and enter the required email and password. If you belong to more than one account, you will need to select an account from a drop-down list.

2. When the *Manage ALK Cloud Account* web page opens, you have two options:

   1) Provide drivers with the **Account Alias** shown on the page, which they then use to login and join the account from within CoPilot (see *Driver Setup* below);

   OR

   2) Add drivers to the account as new users directly from the *Manage Account* page by entering the email address the driver used as an ID when activating

CoPilot on a mobile device. Using the *Manage Account* page generates a "Welcome to ALK Cloud" email that enables the driver to sign up. For this second option, continue with the steps below.

3. To add a driver as a new user, click **Add User to Account**.

4. Enter a first and last name and a valid email address at the prompts that appear below, then click **Add**. The email you enter **must match** the email that the driver used as an ID when installing CoPilot.

5. You'll see the new user added to the list of **Account Users**, enabled by default. Each user you add will receive an email for signing up. To temporarily disable a user, uncheck the **Enabled** column, or click the garbage can icon (the user will remain on the list but access to the account will be denied in both cases).

16.3 Driver Setup

Drivers can download CoPilot Truck for iPhone or Android from GooglePlay, then follow the steps below to get set up with CoPilot and TripDirect:

1. If necessary, download CoPilot Truck from the appstore and create an account as described in Step 2 below. (You could also use an existing account if CoPilot is already installed.)

2. Create a CoPilot Account and go through the first-run setup:
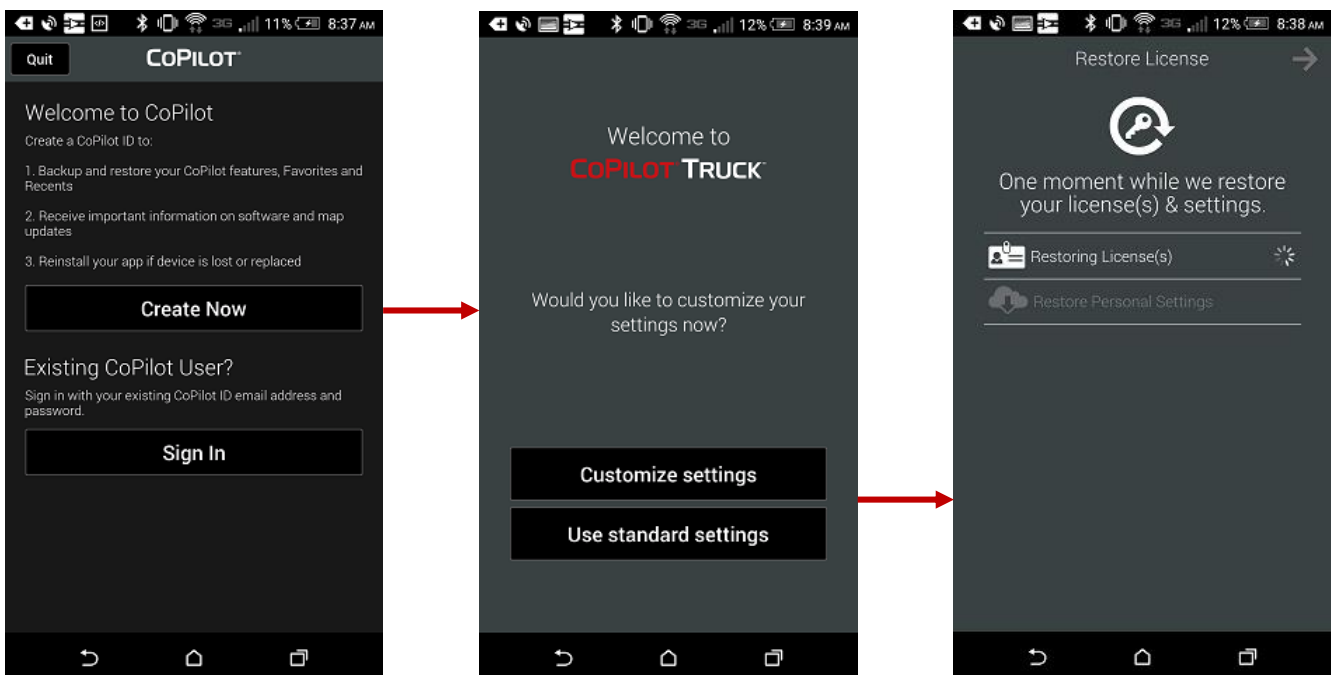
3. Login to the company that will be sending routes via TripDirect: In CoPilot, go to *Main Menu → MyCoPilot* icon (bottom of screen) *→ My Account → Join New Company*.
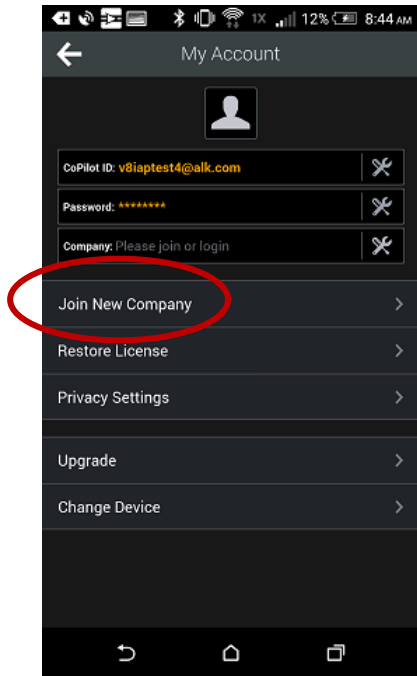
4. Enter the 6-digit Company Alias that was shared, then click "*Join*".
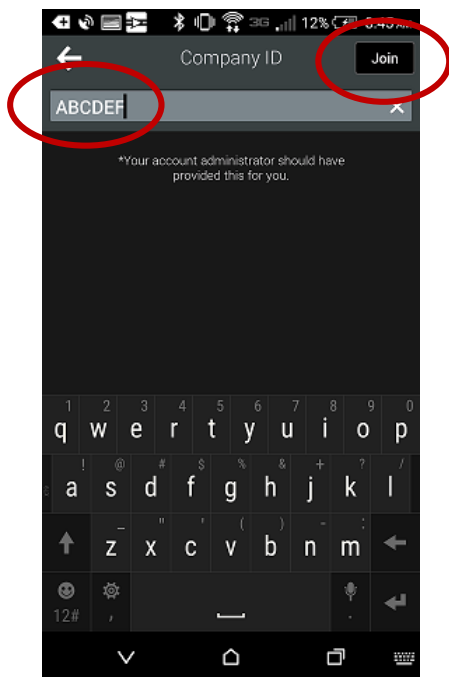
16.4 Sending Routes and Options from PC*MILER to CoPilot

The usernames (emails) of all CoPilot-equipped drivers who join your ALK Cloud account will appear in the TripDirect Vehicle Manager, along with their online/offline status. Select *Vehicle Manager* on the ALK Cloud ribbon to see all users who have joined your account. **It may take a couple of minutes for vehicle sign-up information to synchronize and be visible**.
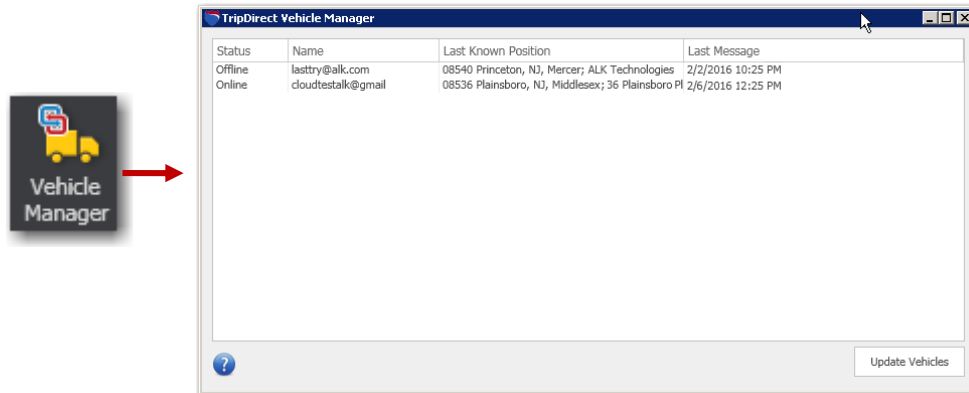
TripDirect Vehicle Manager

PC*MILER routes can be sent to any CoPilot-equipped driver listed in the Vehicle Manager. By sending a route to CoPilot, the sender requires the driver to adhere precisely to that route. To send a route, follow the steps below.

1. **Run a PC*MILER Route.** (PC*MILER|Streets must be installed.)

2. **Open the Send Route dialog.** In the route window, click the gear button and select *TripDirect.*
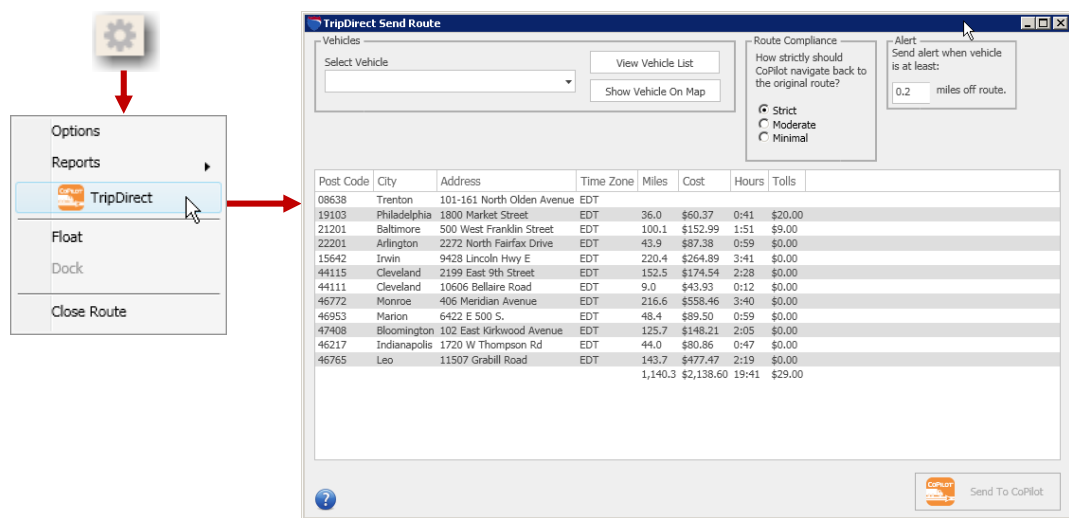
TripDirect Send Route Dialog

3. **Select a Vehicle.** In the Send Route dialog, select one or more vehicles from the **Select Vehicle** drop-down.   Click **View Vehicle List** to view the online/offline status of all users on your ALK Cloud account.

4. **Select the Route Compliance Level.**
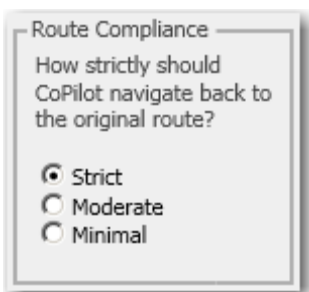
Under **Route Compliance**, select how strictly CoPilot should try to return to the original route once the driver is out-of-route:

Strict: This is the default compliance level. CoPilot will try to navigate back to the original route at all costs, even if it means the driver needs to turn around and drive back to rejoin the prescribed route.

Moderate: CoPilot will try to navigate back to the original route but will take into account the driver's current position in relation to the destination; i.e. CoPilot will try to rejoin the prescribed route as it navigates towards the destination, but along a route that is more reasonable than what the Strict compliance level would follow.

Minimal: At this level, the original prescribed route is not taken into consideration. The route taken may still rejoin the original route, but its first objective is to navigate to the destination from the driver's current position.

5. **Set a Distance That Triggers an OoR Alert.**
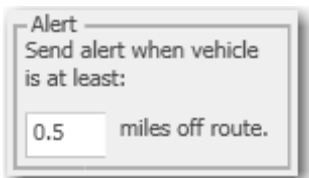
Whenever the CoPilot-equipped vehicle goes off route, CoPilot generates an alert for the driver that is also sent to the PC*MILER-side dispatcher. By default, an out-of-route alert is generated when the vehicle reaches a point .2 miles away from the planned route. To adjust this distance, type in a new distance under **Alert**.

6. **Send the Route.**
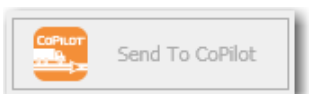
Click the active **Send to CoPilot** button. At the bottom of the Send Route dialog you will see a confirming "Route Sent on…" message that includes the date and time the route was sent.

"Route Sent" Confirmation with **Timestamp**
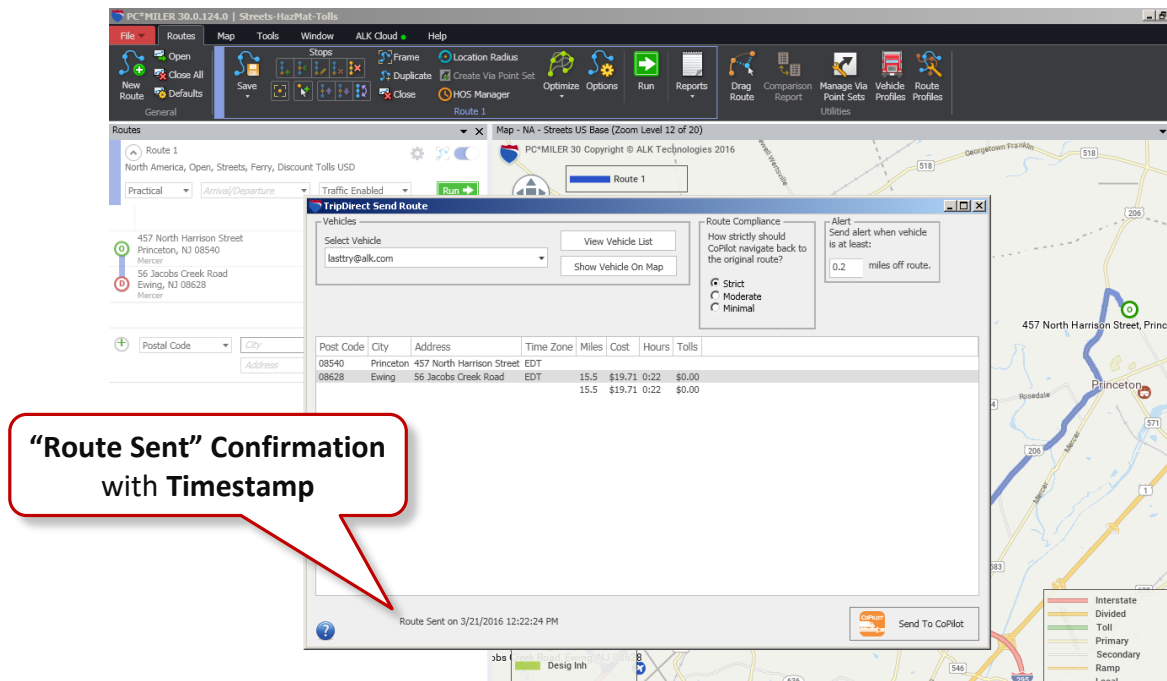
TripDirect new route alerts will appear in CoPilot only when the CoPilot map display is on the screen (in navigation view). The CoPilot user will receive an onscreen alert that a route has been sent and may choose to click **OK** to accept the route, or **Details** to see driving instructions.
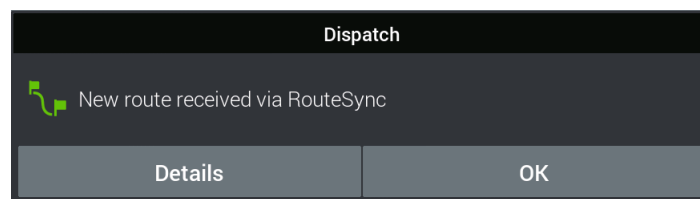
NOTE: It sometimes takes 1-2 minutes for a route to be sent down to the device.

NOTE Also: ALK Cloud and TripDirect activity is logged in a "log.db" file found in the App\log folder of the PC*MILER installation folder (usually C:\ALK Technologies\PCMILER30\App\log).

16.5 Managing and Tracking Vehicles
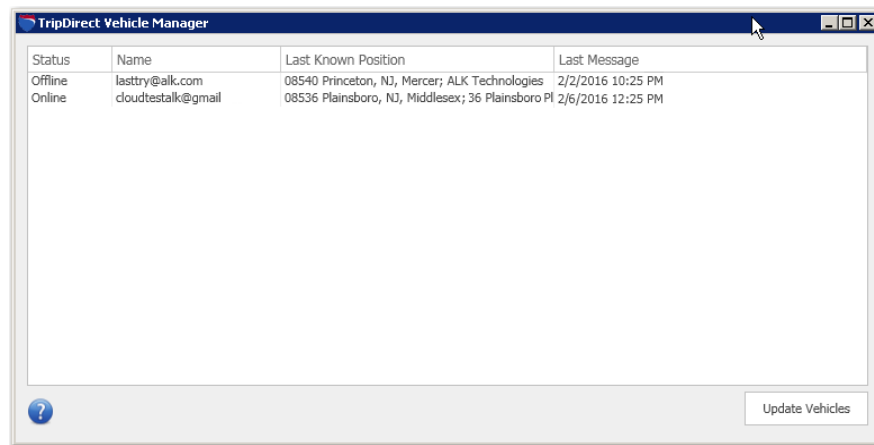
TripDirect Vehicle Manager

To Track Vehicles:

To see all vehicles that have accepted to join your account, click **View Vehicle List** in the Send Route dialog or *Vehicle Manager* on the ALK Cloud ribbon.

Vehicles in the Vehicle Manager are listed by their associated CoPilot ID under **TruckName**. For each vehicle, PC*MILER displays an online/offline **Status** and **Last Known Position**. For trucks that are offline, the date/time when the truck went offline is shown. The last column in the Vehicle List records the last message that the dispatcher received from a truck, including a timestamp and message description.

When you select a vehicle on the list, its **Last Known Position** will be displayed if it is available. If a vehicle is offline, the route that you send will be received when CoPilot comes back online in the vehicle.

To Delete Vehicles:

Use the Manage ALK Cloud Account web page. See section 15.2.1.

To Update the Vehicle List:

To refresh the information in the Vehicle Manager, click **Update Vehicles**.

16.6 Vehicle Display on the Map

To zoom to a vehicle's current or last known position on the PC*MILER map, in the Send Route dialog click **Show Vehicle On Map** (see section 16.4 above).   The vehicle's position on the map is updated automatically every 60 seconds.
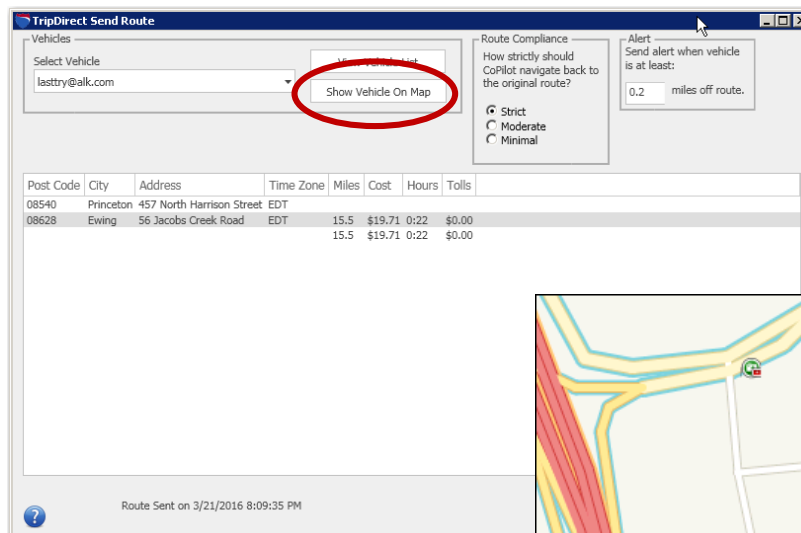
Send Route Dialog
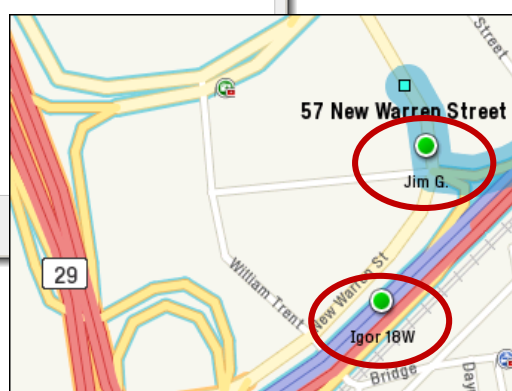
Two Online Vehicles on the Map

16.7 Data Updates

Map data and software updates for PC*MILER and CoPilot are available periodically between version releases. **Users of TripDirect should wait for the next PC*MILER data update to be installed** before considering updating their CoPilot devices, in order to ensure data matching between the two products.

PC*MILER Updates:

Go to the Help tab > *Check for Updates*. All available updates will be listed in the PC*MILER Updater window. See section 17.3 for more information.

CoPilot Updates:

On the mobile device:

1. In the Main Menu tap *My CoPilot* [icon] at the bottom of the screen.

2. Tap *My Maps*. If a map update is available, a popup will be displayed to download the map update.

3. Tap on an update to download and install it directly to the device.

17.1 Technical Support Options

ALK Technologies offers one year of free unlimited technical support to all registered users of PC*MILER.   If you have unresolved questions about PC*MILER or problems with the software, visit us at www.alk.com/support for answers to frequently asked questions (FAQ) or contact us in the following ways:

Phone: 1.800.377.6453, ext 2 or 609.683.0220, ext. 2. When calling, ask for PC*MILER Technical Support. Please be sure to have your PC*MILER Product Key Code, version number, Windows® version number, and hardware configuration information (manufacturer, speed, and monitor type) available before your call. Please include this information in your message if you are contacting us by email.

Email: pcmsupport@alk.com, or from within PC*MILER select the Help tab > *Email Technical Support* and follow the instructions provided. If you have any supporting material, click **Attach File** and browse for the file(s) to attach. Attachments of supporting documentation can be **up to 10 MB**. When ready, click **Send**. ALK's technical support team will send a confirmation email to the email entered in the "Enter your email here" field when it is received.

Web Site: www.pcmiler.com

Hours: 8:00am – 5:00pm EST, Mon-Fri

To print additional copies of this *User's Guide*, click the Windows **Start** button, then go to **All Programs** (or equivalent) **> PCMILER 30 > User Guides** and select the .pdf file from the sub-menu.

17.2 PC*MILER Sales Contact Information

Phone: 800.377.6453, ext 1
609.683.0220 (outside the U.S.)
Fax: 609.683.0290
Email: sales@alk.com
Web Site: www.pcmiler.com

17.3 PC*MILER Updates

Between version releases of PC*MILER, updates and patches are periodically made available as the need arises. These may include corrections to any reported errors in the software or data, or access to updated data releases (for applicable products and license types*). Note that these patches and updates are now cumulative, meaning they include items from previously released patches/updates of the same type.

ALK strongly recommends checking for the most current updates regularly. This is recommended for all users, but particularly important for PC*MILER|Tolls users.

* **NOTE:** If a PC*MILER product was purchased along with signing up for the ALK Annual Support & Update Program (AUP license purchase), customers are entitled to use PC*MILER during the term of their agreement and also to receive data updates when and if available. AUP licensed users will have access to the base version data set as well as to more recently released data sets as they are available.

For those who do not sign up for the AUP, PC*MILER is purchased as a Perpetual license which entitles the licensed user to available software patches released for the purchased version. For more information on upgrading a Perpetual license to an AUP license, please contact an Enterprise Solutions account executive at 800-377-6453 ext. 1 or email sales@alk.com.

17.3.1 Using the Updater Tool

Provided you have an Internet connection, follow the steps below to check if an update is available for your license type and install the available updates:

1. Close all open instances of PC*MILER and its connectivity products. If a third-party program that accesses any PC*MILER component is running, (for example, PC*MILER|Connect or PC*MILER|Mapping) it must be closed before updating.

2. Open PC*MILER and select the Help tab > *Check for Updates*. The PC*MILER Updater dialog will open. The Updater first checks for valid license information and then begins checking for available updates.

3. When the search for updates is complete you will see all available updates listed. In the **Download & Install** drop-down menu next to each available update, click the arrow to select either *Download & Install* to download and install right away or *Download* to download now and install at a later time.
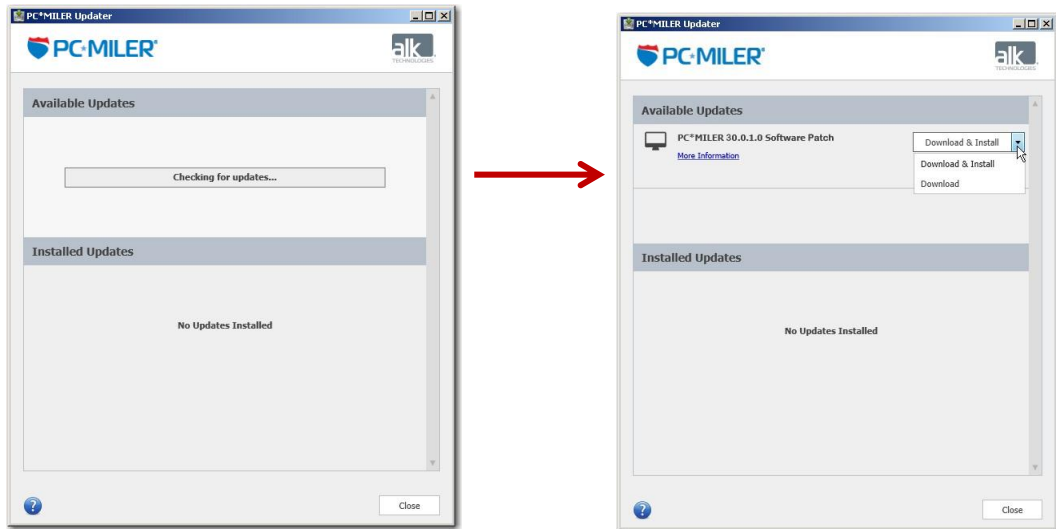
PC*MILER Updater – Checking for Updates

Download & Install Options

4. Note the version number of the updates you will be downloading so you can check if the update installed properly (see Step 7 below).

5. Selecting either option will begin the download process. You will see the progress of the download reflected in a progress bar. If any PC*MILER-related application is open, you will be prompted to close it. After closing the application(s), click **OK** to continue with the download.
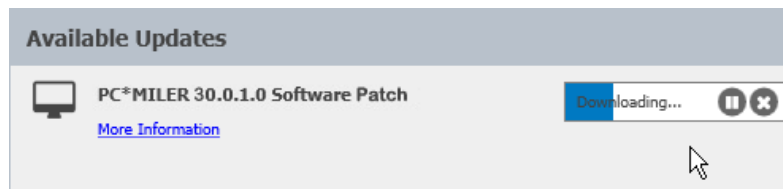
6. If you chose *Download and Install*, the InstallShield Wizard will open when the download is finished. Follow the instructions to complete the installation. After installing, you will see the update or patch listed under "Installed Updates" in the Updater window.

NOTE for Patch Installations: Depending on which patch you are installing, the Updater window may close when you begin running the InstallShield Wizard update.

If you chose *Download*, when the download is finished the button to the right will now say "Install". You can complete the installation as described above at any time in the future: open the Updater window and click **Install**.

> **IMPORTANT:** You must close the Updater after downloading without installing. The next time you open the Updater, the files you downloaded will be shown in the "Downloaded Updates" section of the dialog.

7. As a last step, check to make sure the update(s) installed properly. Select the Help tab > *About* and look for the Software Version number under "This Product is Licensed To". It should match what you downloaded.
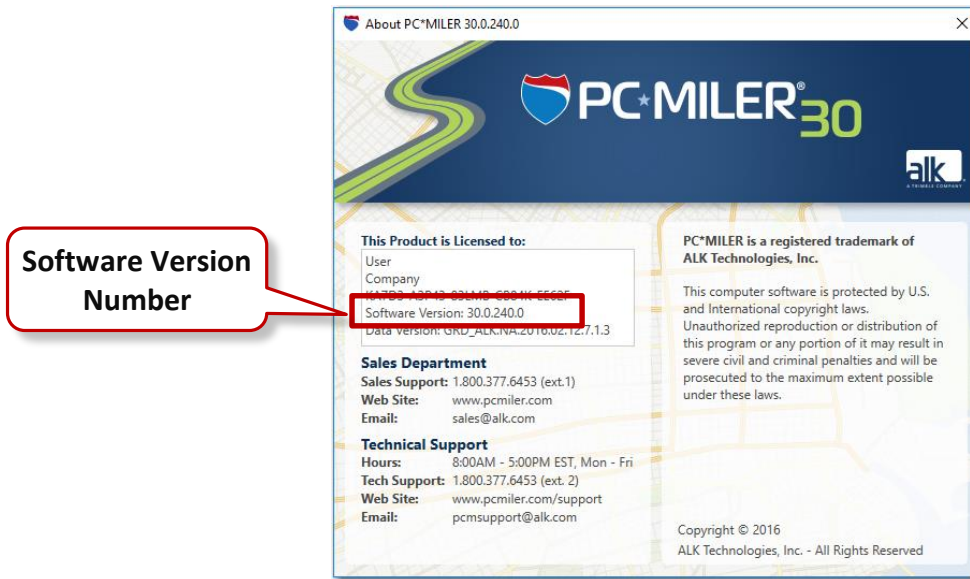
PC*MILER "About" Window

17.3.2 Updating Workstation Installations

For workstation installations, first follow the steps in section 17.3.1 above to install any available updates and patches on the Server.

Next, to keep all workstations in sync with what is running on the Server, run the Updater on each workstation to install the same updates and/or patches.

17.4 Reporting Data Errors

ALK Technologies is dedicated to maintaining a highway and street-level network of the highest quality and welcomes user input. PC*MILER users are encouraged to submit map data enhancements to ALK's map data experts using ALK's MapSure from within PC*MILER or by contacting PC*MILER Technical Support. Reported issues will be researched and if a requested change is accepted, it will be incorporated in a future map data update.

17.4.1 Using ALK's MapSure

PC*MILER|Streets users with an ALK Cloud account (see Chapter 15) now have access to ALK's MapSure website to submit map data enhancement requests. If you encounter any problems on the map related to missing or incorrect street addresses, street or highway names, turn restrictions, one-way designations, truck restrictions and allowances, toll road designations, or ZIP/Postal Codes, from within PC*MILER select the Help tab > *Open MapSure in Browser* or right click the map and select *Report a Map Problem….** On the MapSure web page, follow the on-screen instructions to report an error or a needed enhancement.

* The MapSure feature is only available if PC*MILER|Streets is licensed and installed, and won't appear in Highway-Only versions of PC*MILER.

> **NOTE:** If you have PC*MILER installed behind a Proxy and have trouble accessing the MapSure feature, go to Help > *Proxy Setup* to enter your proxy information. If the problem still persists, in a web browser go directly to http://mapsure.alk.com and login using your ALK Cloud account information.
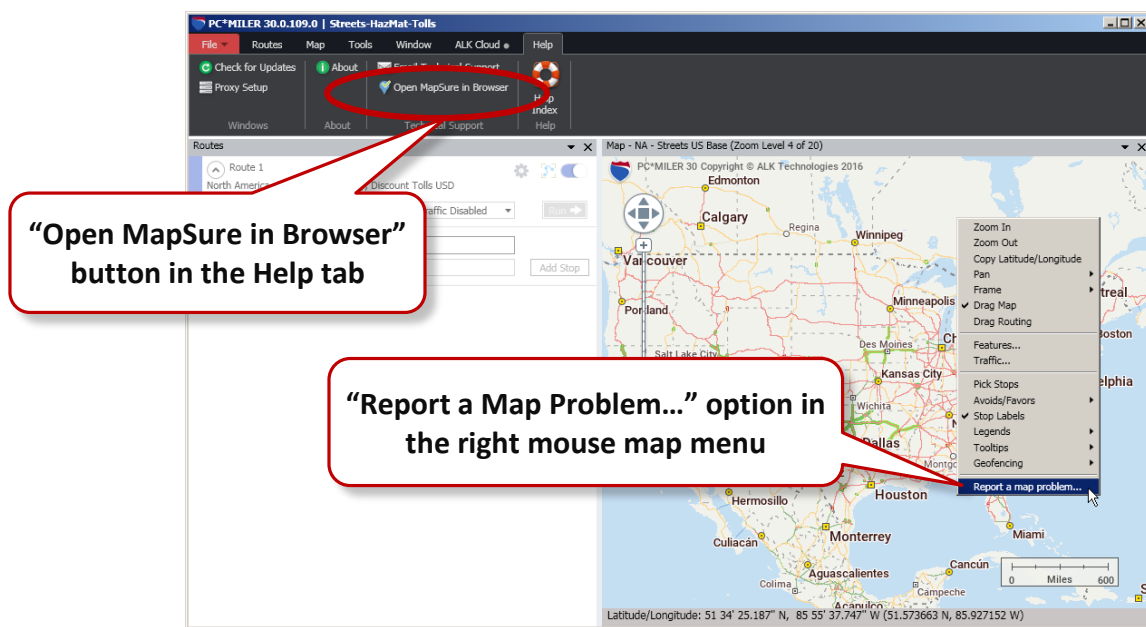
Accessing ALK's MapSure

17.4.2 Reporting Data Errors to PC*MILER Technical Support

To report other types of map data issues such as mileage calculation errors or routing errors, or for users without an ALK Cloud account, email PC*MILER Technical Support at pcmsupport@alk.com and include any relevant route information along with a description of the problem you encountered.

ALK® Technologies, Inc., a Trimble® company headquartered in Princeton, NJ, was founded in 1979 as a transportation industry pioneer. ALK harnesses the power of information technology to enhance transportation and mobility, supporting competitive advantage and improved quality of life.

Today, ALK is a global leader in GeoLogistics® solutions and navigation software, focused on developing innovative solutions for transportation, logistics, mobile workforces and consumers. Product lines include award-winning CoPilot®, a leading source of GPS navigation software for fleets, mobile operators, hardware OEMs, systems integrators, professional drivers and consumers. ALK's PC*MILER® is widely recognized as a transportation industry standard for routing, mileage and mapping. ALK® Maps is a development platform designed for the transportation industry and provides commercial routing, geocoding and mapping visualization for enterprise applications.

See section 18.1 below for an overview of ALK's Enterprise Solutions. For detailed product information, visit us at www.alk.com or www.pcmiler.com.

18.1 Enterprise Solutions from ALK Technologies

PC*MILER

Commercially accepted, industry preferred. PC*MILER is the industry's leading off-the-shelf integrated, street-level routing and mileage solution. A large percentage of North American for hire carriers, logistics companies, and a majority of the Fortune 500 rely on PC*MILER to maximize revenues and minimize costs, while providing their vehicles and shipments the safest, most cost-effective routing available today.

- The preferred commercially accepted routing, mileage and mapping software
- Easily integrated with leading fuel optimization, routing & scheduling, transportation and supply chain management systems, for complete customization and standardization across your entire business
- Maintain compliance by entering necessary breaks and stops when creating a route, helping to generate more realistic ETAs. Dispatchers can easily customize rest and break locations based on preferences, while still maintaining that their driver stays HOS compliant.
- Unique capability to send your planned route directly to the driver to follow through CoPilot Truck* in-cab navigation, ensuring true route compliance and guaranteeing your back office route plan is fully executed
- Map data continuously updated to keep you current*
- Only solution to provide Worldwide* and Rail* routing and map data

  * Additional license required

PC*MILER Value Add-Ons

- **PC*MILER|Streets –** Street-level routing, mileage and mapping software.
  - Reduce out-of-route mileage saving money, time, toll costs* and fuel costs
  - Customize the map by avoiding or favoring roads per your needs

    * Additional license required

- **PC*MILER|Tolls –** Calculates the most cost-effective toll route or non-toll route, factoring in additional mileage over costs.
  - Know the real costs of your lanes instead of estimating or averaging toll costs in your transportation planning or rate negotiations
  - Stay competitive and profitable with precise operating costs and freight bill calculations

- **PC*MILER|Traffic -** Real-time and predictive traffic speed features.
  - Improve hours of service compliance
  - Generate more accurate transit times and ETAs

- **PC*MILER|Worldwide -** Point-to-point routing, mileage and mapping software that generates routes, distances, maps and driving directions in over 230 countries around the world.
  - Generate exact U.S. and worldwide DoD distances for freight rating
  - Compliance with U.S. Department of Defense (DoD) and GSA distance compliance for approved freight rating and billing

- **PC*MILER|HazMat -** Point to point and street-level routes, and mileage for hauling hazardous materials and dangerous goods in the U.S. and Canada.
  - Ensure driver compliance with DOT, nationwide hazmat, and nationwide dangerous goods regulations
  - Ensure accurate driver pay and payroll auditing by providing hazmat-specific mileage calculations

- **PC*MILER|Rail -** Generate point-to-point routes over the complete North American railroad system.
  - Minimize empty haulage costs by tracking empty and loaded mileage by rail car, carrier, and state
  - See routes on a map and generate detailed route reports that include mileage summaries by state and railroad, in addition to leg and cumulative miles for via points and major cities

- **PC*MILER|Energy -** Unique solution that provides industry-critical routing and mileage data you need to make accurate planning and billing decisions when operating in the patch.
  - Generate precise mileage and distance using actual oil and gas lease roads for accurate billing
  - Calculate accurate travel times to and from wells, from well to well, or from public to private oil and gas lease roads for enhanced dispatch planning

PC*MILER Seamless Integration

- **PC*MILER|Connect -** Interfaces PC*MILER routes, mileage and reports with third-party and custom systems, such as transportation and logistics management software systems.
  - Client applications are able to retrieve PC*MILER distances, detailed driving directions, drive times, state-by-state mileage summaries, stop optimization functionalities and more.
  - Interact with the PC*MILER database through thread-safe Application Programming Interfaces (APIs) and access the features of choice

- **PC*MILER Web Services -** Fulfills all PC*MILER routing, mileage and mapping transactions in a simple hardware and software-agnostic system interface to any computing platform.
  - Generate truck-specific routes, maps, and driving directions online without the need to purchase, install, or maintain computer software
  - Software-as-a-Service (SaaS), developed in .NET

- **Multi-Version Switch (MVS) -** High-end function of PC*MILER|Connect that serves as an integration tool designed to simultaneously support multiple versions of PC*MILER that are installed on one server or on several different servers.
  - Main connection point to programmatically gain access to PC*MILER
  - Reduce hardware expenses by decreasing the number of network servers that need to be supported along with their maintenance costs and setup fees

- **PC*MILER|TCP/IP -** Tool that provides an interface to PC*MILER|Connect running in a Windows environment to an application residing on another platform.
  - Opens cross platform communications in a thread-safe manner, giving you the flexibility to transmit the output of PC*MILER|Connect to multiple networks within your organization.

- **PC*MILER|Spreadsheets -** Access PC*MILER features and functionality from within your own spreadsheet software.
  - Analyze transportation costs to and from customers
  - Enhance strategic planning and forecasting

- **PC*MILER|Mapping -** Interfaces PC*MILER routes and geographic data on maps for integration with real-time dispatch and operations analysis programs.
  - Integrate real-time maps into your dispatch operations
  - Ideal for vehicle tracking, route visualization, and viewing geographic data

- **PC*MILER|BatchPro -** Simultaneously processes large volumes of origin-destination pairs.
  - Generate leg and total mileage, cost and time estimates
  - Easily populate your mileage database without additional software programming effort

MAXIMIZE Your PC*MILER Experience

- **CoPilot Truck** – CoPilot Truck provides voice-guided, truck-specific in-cab navigation. By using PC*MILER truck-specific routing, CoPilot Truck effortlessly provides the optimal route.
  - Reduction of out-of-route mileage by 5-10% annually (on average)

- o Increase in back office productivity by lessening driver support needs

- **RouteSync & TripDirect** – With RouteSync, dispatchers can send PC*MILER optimized routes directly to drivers running CoPilot Truck.
  - o Operational consistency between navigation and PC*MILER driver pay, rating, billing, costing, load planning and fuel tax reporting
  - o Reduction of non-revenue mileage by minimizing the mileage variance between actual and planned routes

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APPENDICES

on the following pages

A: Access Policies for the National Network *(U.S. only)*

**B: National Network Policies by State &
Truck Configuration** *(U.S. only)*

C: Canadian Counties

D: State/Province/Country Abbreviations

E: Valid Entries for Street Addresses

F: Default Road Speeds by Jurisdiction

G: Toll Plaza Names in Reports

H: Toll Roads Requiring Electronic Payment

I: Postal Code Formats in Worldwide Regions

J: Worldwide Data Coverage & Postal Code Access

K: Weather Alert Types Included in Alert Categories

Reasonable Access Defined

Reasonable access is the deviation allowed between the specified truck network and any allowable stops. A stop is typically defined as a place of loading or unloading, or facilities for food, fuel, repairsand rest. In all cases, local signs and warnings prohibiting truck access or providing an applicable restriction take precedence over reasonable access rules. In some states the deviation allowed from the National Network or 53 Foot Designated Truck Network may vary depending on the roads used to get to the stop. If this is the case, we have differentiated between reasonable access from the truck route and on a state highway versus local roads.

For detailed information about pre-approved routes, contact the individual states.

PC*MILER Designated Road Categories

In the PC*MILER database, roads designated for 102" wide, 53' long trailers or twin 28' long trailers are coded in three ways:

- **National Network** – These are the original roads designated by the states and approved by FHWA circa 1990, or (rarely) changes submitted by the states to FHWA post-1990. FHWA requires that the states allow at least 1 mile access distance to/from these roads, but the states are free to specify a longer access distance if they wish. Many states (especially in the west) have size limits for their entire state that equal or exceed this size of equipment in both width and length. In PC*MILER, these roads are considered to have "unlimited" access distance. Some states in the east restrict this equipment to designated roads, but allow unlimited access "by the shortest and/or most direct route" (or similar language), and roads in these states also have "unlimited" access distance.

- **State Oversize** – This category includes additional roads designated by the states since 1990, or which they have not submitted to FHWA for approval since 1990, to which the same access distance applies as to the National network in that state.

- **Oversize Access** – This category includes additional roads designated by the states to which a different (shorter, often zero) access distance applies.   Usually these are county highways or local streets that lead all the way from the National Network and/or State Oversize network to the entrance to an industrial park, truck terminal, distribution center, factory, warehouse, etc.

Users will receive a "Not Designated" warning in the route window and the Detailed and Driver's reports if State + National Network is selected as the route type, and:

a. the route uses a road that is not designated National Network, State Oversize, or Oversize Access to go between roads that are designated National Network, State Oversize, or Oversize Access, OR

b. the route uses a road that is not designated National Network, State Oversize, or Oversize Access to access an origin, destination, or stop further than the distances specified in the regulations.

Allowable Distance by Jurisdiction

The table below shows the allowable distance (in miles) on truck access roads in North American jurisdictions, by PC*MILER road category as described above. Columns in the table are:

Column 1 -   Jurisdiction abbreviation
Column 2 -   Jurisdiction FIPS code
Column 3 -   Access miles from National Network on US and State numbered highways
Column 4 -   Access miles from National Network on all other roads
Column 5 -   Access miles from State Oversize on US and State numbered highways
Column 6 -   Access miles from State Oversize on all other roads
Column 7 -   Access miles from Oversize Access

NOTE: "Unlimited access" in this table is as defined in the description of PC*MILER designated road categories above.

Jurisdiction Abbrev.	FIPS	3 - From Nat'l Netw on US & State Highways	4 - From Nat'l Netw on other roads	5 - From State Oversize on US & State Highways	6 – From State Oversize on other roads	7 – From Oversize Access
AL	1	1	1	1	1	0
AK	2	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AZ	4	1	1	1	1	0
AR	5	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CA	6	1	1	1	1	0
CO	8	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CT	9	1	1	1	1	0
DE	10	1	1	1	1	0
DC	11	1	1	1	1	0
FL	12	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GA	13	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
HI	15	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ID	16	1	1	1	1	0
IL	17	5	1	5	1	0

Jurisdiction Abbrev.	FIPS	3 - From Nat'l Netw on US & State Highways	4 - From Nat'l Netw on other roads	5 - From State Oversize on US & State Highways	6 – From State Oversize on other roads	7 – From Oversize Access
IN	18	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
IA	19	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
KS	20	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
KY	21	5	1	5	1	0
LA	22	10	10	10	10	0
ME	23	1	1	1	1	0
MD	24	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MA	25	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MI	26	5	1	5	1	0
MN	27	1	1	1	1	0
MS	28	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MO	29	10	10	10	10	0
MT	30	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NE	31	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NV	32	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NH	33	1	1	1	1	0
NJ	34	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NM	35	20	20	20	20	0
NY	36	1	1	1	1	0
NC	37	3	3	3	3	0
ND	38	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OH	39	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OK	40	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OR	41	1	1	1	1	0
PA	42	1	1	1	1	0
RI	44	1	1	1	1	0
SC	45	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SD	46	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TN	47	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TX	48	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
UT	49	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VT	50	1	1	1	1	0
VA	51	1	1	1	1	0
WA	53	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
WV	54	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
WI	55	15	15	15	15	0
WY	56	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PR	72	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NU	80	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

Jurisdiction Abbrev.	FIPS	3 - From Nat'l Netw on US & State Highways	4 - From Nat'l Netw on other roads	5 - From State Oversize on US & State Highways	6 – From State Oversize on other roads	7 – From Oversize Access
YT	81	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NT	82	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BC	83	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AB	84	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SK	85	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MB	86	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ON	87	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QC	88	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NB	89	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PE	90	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NS	91	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NL	92	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
EM	93	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BD	130	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GL	131	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BH	132	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CS	133	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ES	134	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GT	135	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
HO	136	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NU	137	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PM	138	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
AG	139	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BJ	140	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
BS	141	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CP	142	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CH	143	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CI	144	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CU	145	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
CL	146	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
DF	147	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
DG	148	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GR	149	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
GJ	150	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
HG	151	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
JA	152	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MH	154	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
MR	155	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NA	156	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

Jurisdiction Abbrev.	FIPS	3 - From Nat'l Netw on US & State Highways	4 - From Nat'l Netw on other roads	5 - From State Oversize on US & State Highways	6 – From State Oversize on other roads	7 – From Oversize Access
NX	157	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
OA	158	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
PU	159	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QA	160	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QR	161	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SI	162	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SL	163	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SO	164	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TA	165	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TM	166	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TL	167	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VZ	168	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
YC	169	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ZT	170	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
ACT	200	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NSW	201	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
NT	202	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
QLD	203	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
SA	204	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
TAS	205	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
VIC	206	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0
WA	207	Unlimited access	Unlimited access	Unlimited access	Unlimited access	0

Table 1 below shows, for each U.S. state as of February 2016, which truck configurations are required by law to use State + National Network routing. PC*MILER currently turns this option on when a vehicle's dimensions, as included in a route profile or set as route options for an individual route, exceed 48 ft. long and/or 96 inches wide. In general this is a conservative setting. If a route is entirely within states that have more liberal rules for their particular truck configuration, users can turn off the State + National Network option and potentially calculate a somewhat shorter route.

Table 2 below provides a source for exception information by state.

Table 1. State + National Network Requirements by State & Truck Configuration

TRUE = must use State + National Network routing
FALSE = not required

U.S. State		Straight Truck — No trailer, 102" wide	Straight Truck — Straight truck with trailer ("maxi-cube"), 102" wide	Regular Tractor — Single trailer 28' long x 102" wide	Regular Tractor — Single trailer 48' long x 96" wide	Regular Tractor — Single trailer 48' long x 102" wide	Regular Tractor — Single trailer 53' long x 96" wide	Regular Tractor — Single trailer 53' long x 102" wide	Regular Tractor — Twin trailers	Short Tractor — Single trailer 28' long x 102" wide	Short Tractor — Single trailer 48' long x 96" wide	Short Tractor — Single trailer 48' long x 102" wide	Short Tractor — Single trailer 53' long x 96" wide	Short Tractor — Single trailer 53' long x 102" wide	Short Tractor — Twin trailers
Alabama	AL	**TRUE**	**TRUE**	**TRUE**	FALSE	**TRUE**	FALSE	**TRUE**	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Alaska	AK	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Arizona	AZ	**TRUE**	**TRUE**	**TRUE**	FALSE	**TRUE**	**TRUE**	**TRUE**	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Arkansas	AR	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
California	CA	FALSE	FALSE	FALSE	FALSE	FALSE	**TRUE**	**TRUE**	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

U.S. State		Straight Truck No trailer, 102" wide	Straight Truck Straight truck with trailer ("maxi-cube"), 102" wide	Regular Tractor Single trailer 28' long x 102" wide	Regular Tractor Single trailer 48' long x 96" wide	Regular Tractor Single trailer 48' long x 102" wide	Regular Tractor Single trailer 53' long x 96" wide	Regular Tractor Single trailer 53' long x 102" wide	Regular Tractor Twin trailers	Short Tractor Single trailer 28' long x 102" wide	Short Tractor Single trailer 48' long x 96" wide	Short Tractor Single trailer 48' long x 102" wide	Short Tractor Single trailer 53' long x 96" wide	Short Tractor Single trailer 53' long x 102" wide	Short Tractor Twin trailers
Colorado	CO	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Connecticut	CT	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Delaware	DE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Dist. of Columbia	DC	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Florida	FL	TRUE	TRUE	TRUE	FALSE	TRUE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Georgia	GA	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Hawaii	HI	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Idaho	ID	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Illinois	IL	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Indiana	IN	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Iowa	IA	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Kansas	KS	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Kentucky	KY	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Louisiana	LA	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
Maine	ME	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
Maryland	MD	FALSE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Massachusetts	MA	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Michigan	MI	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE
Minnesota	MN	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
Mississippi	MS	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Missouri	MO	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Montana	MT	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

U.S. State		Straight Truck — No trailer, 102" wide	Straight Truck — Straight truck with trailer ("maxi-cube"), 102" wide	Regular Tractor — Single trailer 28' long x 102" wide	Regular Tractor — Single trailer 48' long x 96" wide	Regular Tractor — Single trailer 48' long x 102" wide	Regular Tractor — Single trailer 53' long x 96" wide	Regular Tractor — Single trailer 53' long x 102" wide	Regular Tractor — Twin trailers	Short Tractor — Single trailer 28' long x 102" wide	Short Tractor — Single trailer 48' long x 96" wide	Short Tractor — Single trailer 48' long x 102" wide	Short Tractor — Single trailer 53' long x 96" wide	Short Tractor — Single trailer 53' long x 102" wide	Short Tractor — Twin trailers
Nebraska	NE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Nevada	NV	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
New Hampshire	NH	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
New Jersey	NJ	TRUE	TRUE	TRUE	FALSE	TRUE	FALSE	TRUE	TRUE	TRUE	FALSE	TRUE	FALSE	TRUE	TRUE
New Mexico	NM	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
New York	NY	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE
North Carolina	NC	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
North Dakota	ND	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Ohio	OH	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Oklahoma	OK	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Oregon	OR	FALSE	TRUE	FALSE	FALSE	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Pennsylvania	PA	FALSE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE	FALSE	FALSE	TRUE	FALSE	TRUE	TRUE
Rhode Island	RI	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
South Carolina	SC	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
South Dakota	SD	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Tennessee	TN	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE
Texas	TX	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Utah	UT	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
Vermont	VT	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE	TRUE	TRUE	TRUE
Virginia	VA	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE	TRUE
Washington	WA	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE
West Virginia	WV	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	FALSE	TRUE	TRUE	TRUE	TRUE

U.S. State		Straight Truck — No trailer, 102" wide	Straight Truck — Straight truck with trailer ("maxi-cube"), 102" wide	Regular Tractor — Single trailer 28' long x 102" wide	Regular Tractor — Single trailer 48' long x 96" wide	Regular Tractor — Single trailer 48' long x 102" wide	Regular Tractor — Single trailer 53' long x 96" wide	Regular Tractor — Single trailer 53' long x 102" wide	Regular Tractor — Twin trailers	Short Tractor — Single trailer 28' long x 102" wide	Short Tractor — Single trailer 48' long x 96" wide	Short Tractor — Single trailer 48' long x 102" wide	Short Tractor — Single trailer 53' long x 96" wide	Short Tractor — Single trailer 53' long x 102" wide	Short Tractor — Twin trailers
Wisconsin	WI	FALSE	FALSE	FALSE	FALSE	FALSE	**TRUE**	**TRUE**	**TRUE**	FALSE	FALSE	FALSE	**TRUE**	**TRUE**	**TRUE**
Wyoming	WY	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE	FALSE

Table 2. Sources for Exception Information by State

U.S. State		For exceptions to rules in Table 1, see:
Alabama	AL	http://codes.lp.findlaw.com/alcode/32/9/2/32-9-20
Alaska	AK	Alaska Chapter 25 Commercial Vehicle Size, Weight and Permit Regulations April 12 2013
Arizona	AZ	Arizona statutes 28-1092, 28-1093, 28-1095
Arkansas	AR	Arkansas permit rules for movement of oversize and overweight vehicles 2014
California	CA	http://www.dot.ca.gov/hq/traffops/trucks/
Colorado	CO	Colorado DOT FYIs legal vehicle dimensions 2015
Connecticut	CT	Connecticut commercial vehicle limits
Delaware	DE	Delaware Oversize Overweight Hauling Permit Policy and Procedures Manual October 2015
Dist. of Columbia	DC	District of Columbia Truck and Motor Carrier FAQ
Florida	FL	Florida Highway Patrol Commercial Motor Vehicle Manual, April 2013
Georgia	GA	http://www.dot.ga.gov/PartnerSmart/permits/Documents/Rules/Title32.pdf
Hawaii	HI	Hawaii Statutes 291-34 Size of vehicles.pdf
Idaho	ID	http://itd.idaho.gov/dmv/poe/LegalWidthHeightLength.html
Illinois	IL	Illinois Maximum Legal Dimensions and Weights on State Federal and Local Routes March 2014
Indiana	IN	Indiana summary of size and weight laws under title 9 article 20

U.S. State		For exceptions to rules in Table 1, see:
Iowa	IA	Iowa truck information guide July 2015-July 2016 edition
Kansas	KS	http://www.kscoplaw.com/vehcode/art19.html
Kentucky	KY	http://www.lrc.ky.gov/kar/603/005/070.htm
Louisiana	LA	Louisiana Regulations for Trucks Vehicles and Loads 2013
Maine	ME	Maine Commercial Vehicle Laws effective June 6 2012.pdf
Maryland	MD	Maryland Motor Carrier Handbook Dec 2014
Massachusetts	MA	Massachusetts Commercial Motor Vehicle Information
Michigan	MI	Michigan Maximum Legal Truck Loadings and Dimensions March 2007
Minnesota	MN	Minnesota maximum vehicle dimensions
Mississippi	MS	Mississippi Sub-Part 6601 Over-Dimensional Permits
Missouri	MO	Missouri Commercial Vehicle Regulations Jul 2009
Montana	MT	Montana permitting reference and FAQs
Nebraska	NE	Nebraska Truck Information Guide 2013-14
Nevada	NV	Nevada Traffic Laws for Size, Weight & Load Jul 2012
New Hampshire	NH	https://www.nh.gov/safety/divisions/nhsp/fob/troopg/motorcarrier/faqmc.html
New Jersey	NJ	New Jersey Title 16 Chapter 32 Truck Access expires 2022
New Mexico	NM	New Mexico Statutes Title 18 Chapter 19 Part 8.pd
New York	NY	Official Description of Designated Qualifying and Access Highways in New York State, April 2015
North Carolina	NC	https://connect.ncdot.gov/business/trucking/Pages/Truck-Access-Designation.aspx
North Dakota	ND	North Dakota vehicle legal size and weight guide Dec 2011
Ohio	OH	Ohio legal dimension and weight limits for highway vehicles
Oklahoma	OK	Oklahoma chapter14 size, weight and load
Oregon	OR	Oregon Group Map 1 and Route Map 7
Pennsylvania	PA	Pennsylvania STAA Truck Routes for 102" Wide Trailers, December 2015
Rhode Island	RI	Rhode Island Manual for Overweight and Oversize Vehicle Permits third edition
South Carolina	SC	South Carolina Size, Weight and Load
South Dakota	SD	South Dakota motor carrier handbook chapter 4 size and weight regulations
Tennessee	TN	http://law.justia.com/codes/tennessee/2015/title-55/chapter-7/part-2/
Texas	TX	http://www.txdmv.gov/motor-carriers/oversize-overweight-permits/texas-size-weight-limits

U.S. State		For exceptions to rules in Table 1, see:
Utah	UT	Utah Chapter 19 Legal Size Vehicle Dimensions
Vermont	VT	Vermont guide to motor carrier safety regulations, and http://dmv.vermont.gov/commercial_trucking/permitting_rules
Virginia	VA	Virginia Size Weight and Equipment Requirements, July 2015
Washington	WA	Washington State Commercial Vehicle Guide
West Virginia	WV	West Virginia Vehicle Size Map Oct 2008
Wisconsin	WI	Wisconsin statutes Chapter 348 Vehicles - Size, Weight and Load dated 20Feb2016.pdf
Wyoming	WY	No exceptions. Ref: http://www.whp.dot.state.wy.us/home/size_and_weight/size_limits.html

Canadian Counties that are included in the PC*MILER database are listed below. Regional districts and other types of sub-divisions that exist within Canadian provinces and territories are not included in the database and therefore not listed.

Province	**Counties**
Alberta	*(No Counties)*
British Columbia	*(Contains a County)*
	CARIBOO
Manitoba	*(No Counties)*
New Brunswick	*(Contains Counties)*
	ALBERT
	CARLETON
	CHARLOTTE
	GLOUCESTER
	KENT
	KINGS
	MADAWASKA
	NORTHUMBERLAND
	QUEENS
	RESTIGOUCHE
	ST. JOHN
	SUNBURY
	VICTORIA
	WESTMORLAND
	YORK
Newfoundland and Labrador	*(No Counties)*
Northwest Territories	*(No Counties)*

Nova Scotia	*(Contains Counties)*

ANNAPOLIS
ANTIGONISH
CAPE BRETON
COLCHESTER
CUMBERLAND
DIGBY
GUYSBOROUGH
HALIFAX
HANTS
INVERNESS
KINGS
LUNENBURG
PICTOU
QUEENS
RICHMOND
SHELBURNE
VICTORIA
YARMOUTH

Nunavut	*(No Counties)*

Ontario	*(Contains Counties)*

ALGOMA
BRANT
BRUCE
COCHRANE
DUFFERIN
DURHAM
ELGIN
ESSEX
FRONTENAC
GREY
HALDIMAND
HALIBURTON
HASTINGS
HURON
KENORA
KENT
LAMBTON
LANARK
MANITOULIN
MIDDLESEX
NIPISSING
NORFOLK
NORTHUMBERLAND

OTTAWA - CARLETON
OXFORD
PARRY SOUND
PERTH
PETERBOROUGH
PRINCE EDWARD
RAINY RIVER
RENFREW
SIMCOE
SUDBURY RM
THUNDER BAY
TIMISKAMING
TORONTO
VICTORIA
WELLINGTON

Prince Edward Island   (Contains Counties)

KINGS
PRINCE
QUEENS

Quebec   (Contains Counties)

ABITIBI-TEMISCAMINGUE
BAS-SAINT-LAURENT
CENTRE-DU-QUEBEC
CHAUDIERE-APPALACHES
COMMUNAUTE-URBAINE-DE-MONTREAL
COTE-NORD
ESTRIE
GASPESIE - ILES-DE-LA-MADELEINE
LA CÔTE-DE-BEAUPRÉ
LANAUDIERE
LAURENTIDES
LES JARDINS-DE-NAPIERVILLE
MAURICIE
MONTEREGIE
MONTREAL
OUTAOUAIS
QUEBEC
ROUVILLE
SAGUENAY - LAC-SAINT-JEAN

Saskatchewan   (No Counties)

Yukon   (No Counties)

States/Provinces in the U.S., Canada, and Mexico

(For countries and country abbreviations included in the North America region, see "North America" below under Country Codes for All Worldwide Regions)

States/Provinces in the United States & Canada

AL	Alabama
AK	Alaska
AB	Alberta
AZ	Arizona
AR	Arkansas
BC	British Columbia
CA	California
CO	Colorado
CT	Connecticut
DE	Delaware
DC	Dist. of Columbia
FL	Florida
GA	Georgia
ID	Idaho
IL	Illinois
IN	Indiana
IA	Iowa
KS	Kansas
KY	Kentucky
LA	Louisiana
ME	Maine
MB	Manitoba
MD	Maryland
MA	Massachusetts
MI	Michigan
MN	Minnesota
MS	Mississippi
MO	Missouri
MT	Montana

NE	Nebraska
NV	Nevada
NB	New Brunswick
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NY	New York
NL	Newfoundland & Labrador
NC	North Carolina
ND	North Dakota
NT	Northwest Territory
NS	Nova Scotia
NU*	Nunavut
OH	Ohio
OK	Oklahoma
ON	Ontario
OR	Oregon
PA	Pennsylvania
PE	Prince Edward Island
QC	Quebec
RI	Rhode Island
SK	Saskatchewan
SC	South Carolina
SD	South Dakota
TN	Tennessee
TX	Texas
UT	Utah
VT	Vermont
VA	Virginia
WA	Washington
WV	West Virginia
WI	Wisconsin
WY	Wyoming
YT	Yukon Territory

* The same FIPS code, NU, is used for Nicaragua and the province of Nunavut, Canada in the PC*MILER database.

Mexican Estados

AG	Aguascalientes
BJ	Baja California
BS	Baja California Sur
CP	Campeche
CH	Chiapas
CI	Chihuahua
CU	Coahuila de Zaragoza
CL	Colima
DF	Distrito Federal
DG	Durango
GJ	Guanajuato
GR	Guerrero
HG	Hidalgo
JA	Jalisco
EM	Mexico (Estado)
MH	Michoacan de Ocampo
MR	Morelos
NA	Nayarit
NX *	Nuevo Leon
OA	Oaxaca
PU	Puebla
QA	Queretaro Arteaga
QR	Quintana Roo
SL	San Luis Potosi
SI	Sinaloa
SO	Sonora
TA	Tabasco
TM	Tamaulipas
TL	Tlaxcala
VZ	Veracruz
YC	Yucatan
ZT	Zacatecas

* Please note that by default, "NX" is used for Nuevo Leon because the province of Newfoundland and Labrador in Canada already utilizes "NL" in the database. However, there is an option that sets "NL" as the abbreviation for Nuevo Leon: in the red File menu, select *Application Settings* > **Geocoding**. In the **NL Abbreviation** drop-down, select *Use NL for Nuevo Leon* and click **Save**.

Country Codes for All Worldwide Regions

Africa

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Algeria	AG	DZ	DZA	DZ	DZA
Angola	AO	AO	AGO	AO	AGO
Benin	BN	BJ	BEN	BJ	BEN
Botswana	BC	BW	BWA	BW	BWA
Burkina Faso	UV	BF	BFA	BF	BFA
Burundi	BY	BI	BDI	BI	BDI
Cameroon	CM	CM	CMR	CM	CMR
Cape Verde	CV	CV	CPV	CV	CPV
Central African Republic	CT	CF	CAF	CF	CAF
Chad	CD	TD	TCD	TD	TCD
Comoros	CN	KM	COM	KM	COM
Congo Democratic Republic (Kinshasa)	CG	CG	COD	CD	COD
Congo, Republic of the (Brazzaville)	CF	CD	COG	CG	COG
Djibouti	DJ	DJ	DJI	DJ	DJI
Egypt	EG	EG	EGY	EG	EGY
Equatorial Guinea	EK	GQ	GNQ	GQ	GNQ
Eritrea	ER	ER	ERI	ER	ERI
Ethiopia	ET	ET	ETH	ET	ETH
Gabon	GB	GA	GAB	GA	GAB
Gambia	GA	GM	GMB	GM	GMB
Ghana	GH	GH	GHA	GH	GHA
Guinea	GV	GN	GIN	GN	GIN
Guinea-Bissau	PU	GW	GNB	GW	GNB
Ivory Coast (Côte d'Ivoire)	IV	CI	CIV	CI	CIV
Kenya	KE	KE	KEN	KE	KEN
Lesotho	LT	LS	LSO	LS	LSO
Liberia	LI	LR	LBR	LR	LBR
Libya	LY	LY	LBY	LY	LBY
Madagascar	MA	MG	MDG	MG	MDG
Malawi	MI	MW	MWI	MW	MWI
Mali	ML	ML	MLI	ML	MLI
Mauritania	MR	MR	MRT	MR	MRT
Mauritius	MP	MU	MUS	MU	MUS
Mayotte	MF	YT	MYT	YT	MYT
Morocco	MO	MA	MAR	MA	MAR
Mozambique	MZ	MZ	MOZ	MZ	MOZ
Namibia	WA	NA	NAM	NA	NAM
Niger	NG	NE	NER	NE	NER
Nigeria	NI	NG	NGA	NG	NGA

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Reunion	RE	RE	REU	RE	REU
Rwanda	RW	RW	RWA	RW	RWA
Saint Helena	SH	SH	SHN	SH	SHN
Sao Tome and Principe	TP	ST	STP	ST	STP
Senegal	SG	SN	SEN	SN	SEN
Seychelles	SE	SC	SYC	SC	SYC
Sierra Leone	SL	SL	SLE	SL	SLE
Somalia	SO	SO	SOM	SO	SOM
South Africa	SF	ZA	ZAF	ZA	ZAF
South Sudan	OD	SD	SDW	SS	SSD
Sudan	SU	SD	SDN	SD	SDN
Swaziland	WZ	SZ	SWZ	SZ	SWZ
Tanzania	TZ	TZ	TZA	TZ	TZA
Togo	TO	TG	TGO	TG	TGO
Tunisia	TS	TN	TUN	TN	TUN
Uganda	UG	UG	UGA	UG	UGA
Western Sahara	WI	EH	ESH	EH	ESH
Zambia	ZA	ZM	ZMB	ZM	ZMB
Zimbabwe	ZI	ZW	ZWE	ZW	ZWE

Asia

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Bangladesh	BG	BD	BGD	BD	BGD
Bhutan	BT	BT	BTN	BT	BTN
British Indian Ocean Territory	IO	--	--	--	--
Brunei	BX	BN	BRN	BN	BRN
Burma (Myanmar)	BM	MM	MMR	MM	MMR
Cambodia	CB	KH	KHM	KH	KHM
China	CH	CN	CHN	CN	CHN
Guam	GQ	GU	GUM	GU	GUM
Hong Kong	HK	HK	HKG	HK	HKG
India	IN	IN	IND	IN	IND
Indonesia	ID	ID	IDN	ID	IDN
Japan	JA	JP	JPN	JP	JPN
Korea, North	KN	KP	PRK	KP	PRK
Korea, South	KS	KR	KOR	KR	KOR
Laos	LA	LA	LAO	LA	LAO
Macao	MC	MO	MAC	MO	MAC
Malaysia	MY	MY	MYS	MY	MYS
Maldives	MV	MV	MDV	MV	MDV
Mongolia	MG	MN	MNG	MN	MNG
Nepal	NP	NP	NPL	NP	NPL
Northern Mariana Islands	CQ	MP	MNP	MP	MNP

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Pakistan	PK	PK	PAK	PK	PAK
Palau	PS	PW	PLW	PW	PLW
Papua New Guinea	PP	PG	PNG	PG	PNG
Philippines	RP	PH	PHL	PH	PHL
Singapore	SN	SG	SGP	SG	SGP
Solomon Islands	BP	SB	SLB	SB	SLB
Sri Lanka	CE	LK	LKA	LK	LKA
Taiwan	TW	TW	TWN	TW	TWN
Thailand	TH	TH	THA	TH	THA
Timor-Leste	TT	--	TMP	TL	TMP
Vietnam	VM	VN	VNM	VN	VNM

Europe

Akrotiri	AX	--	--	QZ	XQZ
Albania	AL	AL	ALB	AL	ALB
Armenia	AM	AM	ARM	AM	ARM
Andorra	AN	AND	AND	AD	AND
Austria	AU	A	AUT	AT	AUT
Azerbaijan	AJ	AZ	AZE	AZ	AZE
Belarus	BO	BY	BLR	BY	BLR
Belgium	BE	B	BEL	BE	BEL
Bosnia and Herzegovina	BK	BIH	BIH	BA	BIH
Bulgaria	BU	BG	BGR	BG	BGR
Croatia	HR	HR	HRV	HR	HRV
Cyprus	CY	CY	CYP	CY	CYP
Czech Republic	EZ	CZ	CZE	CZ	CZE
Denmark	DA	DK	DNK	DK	DNK
Dhekelia	DX	--	--	XD	XXD
Estonia	EN	EST	EST	EE	EST
Faroe Islands	FO	FO	FRO	FO	FRO
Finland	FI	FIN	FIN	FI	FIN
France	FR	FR	FRA	FR	FRA
Georgia	GG	GE	GEO	GE	GEO
Germany	GM	D	DEU	DE	DEU
Gibraltar	GI	GI	GIB	GI	GIB
Greece	GR	GR	GRC	GR	GRC
Guernsey	GK	--	--	GG	GGY
Hungary	HU	H	HUN	HU	HUN
Iceland	IC	IS	ISL	IS	ISL
Ireland	EI	IE	IRL	IE	IRL
Isle of Man	IM	--	IMN	IM	IMN
Italy	IT	I	ITA	IT	ITA

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Jersey	JE	--	--	JE	JEY
Kazakhstan	KZ	KZ	KAZ	KZ	KAZ
Kosovo	KV	--	XKS	XK	XKS
Kyrgyzstan	KG	KGZ	KGZ	KG	KGZ
Latvia	LG	LV	LVA	LV	LVA
Liechtenstein	LS	FL	LIE	LI	LIE
Lithuania	LH	LT	LTU	LT	LTU
Luxembourg	LU	L	LUX	LU	LUX
Macedonia	MK	MK	MKD	MK	MKD
Malta	MT	M	MLT	MT	MLT
Moldova	MD	MD	MDA	MD	MDA
Monaco	MN	MC	MCO	MC	MCO
Montenegro	MJ	MNE	MNE	ME	MNE
Netherlands	NL	NL	NLD	NL	NLD
Norway	NO	N	NOR	NO	NOR
Poland	PL	PL	POL	PL	POL
Portugal	PO	P	PRT	PT	PRT
Romania	RO	RO	ROU	RO	ROU
Russia	RS	RUS	RUS	RU	RUS
San Marino	SM	RSM	SMR	SM	SMR
Serbia	RI	SRB	SRB	RS	SRB
Slovakia	LO	SK	SVK	SK	SVK
Slovenia	SI	SLO	SVN	SI	SVN
Spain	SP	E	ESP	ES	ESP
Svalbard and Jan Mayen Islands	SV	SJ	SJM	XR	XSV
Sweden	SW	S	SWE	SE	SWE
Switzerland	SZ	CH	CHE	CH	CHE
Tajikistan	TI	TJ	TJK	TJ	TJK
Turkey	TU	TR	TUR	TR	TUR
Turkmenistan	TX	TM	TKM	TM	TKM
Ukraine	UP	UA	UKR	UA	UKR
United Kingdom	UK	GB	GBR	GB	GBR
Uzbekistan	UZ	UZ	UZB	UZ	UZB
Vatican City	VT	V	VAT	VA	VAT

Middle East

Afghanistan	AF	AF	AFG	AF	AFG
Bahrain	BA	BH	BHR	BH	BHR
Gaza Strip	GZ	--	XGZ	XG	XGZ
Iran	IR	IR	IRN	IR	IRN
Iraq	IZ	IQ	IRQ	IQ	IRQ
Israel	IS	IL	ISR	IL	ISR

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Jordan	JO	JO	JOR	JO	JOR
Kuwait	KU	KW	KWT	KW	KWT
Lebanon	LE	LB	LBN	LB	LBN
Oman	MU	OM	OMN	OM	OMN
Palestinian Territory	--	PS	PSE	PS	PSE
Qatar	QA	QA	QAT	QA	QAT
Saudi Arabia	SA	SA	SAU	SA	SAU
Syria	SY	SY	SYR	SY	SYR
United Arab Emirates	AE	AE	ARE	AE	ARE
West Bank	WE	--	XWB	XW	XWB
Yemen	YM	YE	YEM	YE	YEM

North America

	FIPS	ISO2	ISO3	GENC2	GENC3
Canada	CA	CA	CAN	CA	CAN
Greenland	GL	GL	GRL	GL	GRL
Mexico	MX	MX	MEX	MX	MEX
Puerto Rico*	PR*	PR	PRI	PR	PRI
Saint Pierre and Miquelon	SB	PM	SPM	PM	SPM
United States	US	US	USA	US	USA
Virgin Islands, U.S.	VI	VI	VIR	VI	VIR

* Note: "PR" for Puerto Rico is a USPS code, not a FIPS code.

Oceania

	FIPS	ISO2	ISO3	GENC2	GENC3
American Samoa	AQ	AS	ASM	AS	ASM
Australia	AS	AU	AUS	AU	AUS
Cook Islands	CW	CK	COK	CK	COK
Fiji	FJ	FJ	FJI	FJ	FJI
French Polynesia	FP	PF	PYF	PJ	PYF
French Southern and Antarctic Islands	FS	TF	ATF	TF	ATF
Kiribati	KR	KI	KIR	KI	KIR
Marshall Islands	RM	MH	MHL	MH	MHL
Micronesia, Federated States of	FM	FM	FSM	FM	FSM
Midway Island	MQ	UM	--	QM	XMW
Nauru	NR	NR	NRU	NR	NRU
New Caledonia	NC	NC	NCL	NC	NCL
New Zealand	NZ	NZ	NZL	NZ	NZL
Niue	NE	NU	NIU	NU	NIU
Norfolk Island	NF	NF	NFK	NF	NFK
Pitcairn Islands	PC	PN	PCN	PN	PCN
Samoa (Western Samoa)	WS	WS	WSM	WS	WSM

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Tokelau	TL	TK	TKL	TK	TKL
Tonga	TN	TO	TON	TO	TON
Tuvalu	TV	TV	TUV	TV	TUV
Vanuatu	NH	VU	VUT	VU	VUT
Wake Island	WQ	WQ	XWK	QW	XWK
Wallis and Futuna	WF	WF	WLF	WF	WLF

South America

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Anguilla	AV	AI	AIA	AI	AIA
Antigua and Barbuda	AC	AG	ATG	AG	ATG
Argentina	AR	AR	ARG	AR	ARG
Aruba	AA	AW	ABW	AW	ABW
Bahamas	BF	BS	BHS	BS	BHS
Barbados	BB	BB	BRB	BB	BRB
Belize	BH	BZ	BLZ	BZ	BLZ
Bermuda	BD	BM	BMU	BM	BMU
Bolivia	BL	BO	BOL	BO	BOL
Bonaire, Sint Eustatius, Saba	--	--	--	BQ	BES
Brazil	BR	BR	BRA	BR	BRA
Caribbean Netherlands	NT	AN	BES	BQ	BES
Cayman Islands	CJ	KY	CYM	KY	CYM
Chile	CI	CL	CHL	CL	CHL
Colombia	CO	CO	COL	CO	COL
Costa Rica	CS	CR	CRI	CR	CRI
Cuba	CU	CU	CUB	CU	CUB
Curacao	UC	--	--	CUW	CUW
Dominica	DO	DM	DMA	DM	DMA
Dominican Republic	DR	DO	DOM	DO	DOM
Ecuador	EC	EC	ECU	EC	ECU
El Salvador	ES	SV	SLV	SV	SLV
Falkland Islands (Islas Malvinas)	FK	FK	FLK	FK	FLK
French Guiana	FG	GF	GUF	GF	GUF
Grenada	GJ	GD	GRD	GD	GRD
Guadeloupe	GP	GP	GLP	GP	GLP
Guantanamo Bay	--	--	--	A2	AX2
Guatemala	GT	GT	GTM	GT	GTM
Guyana	GY	GY	GUY	GY	GUY
Haiti	HA	HT	HTI	HT	HTI
Honduras	HO	HN	HND	HN	HND
Jamaica	JM	JM	JAM	JM	JAM
Martinique	MB	MQ	MTQ	MQ	MTQ
Montserrat	MH	MS	MSR	MS	MSR

COUNTRY NAME	FIPS	ISO2	ISO3	GENC2	GENC3
Nicaragua*	NU*	NI	NIC	NI	NIC
Panama	PM	PA	PAN	PA	PAN
Paraguay	PA	PY	PRY	PY	PRY
Peru	PE	PE	PER	PE	PER
Saint Barthalemy	TB	--	BLM	BL	BLM
Saint Kitts and Nevis Islands	SC	KN	KNA	KN	KNA
Saint Lucia	ST	LC	LCA	LC	LCA
Saint Martin	RN	--	MAF	MF	MAF
Saint Vincent and the Grenadines	VC	VC	VCT	VC	VCT
Sint Maarten	NN	--	SXM	SX	SXM
Suriname	NS	SR	SUR	SR	SUR
Trinidad and Tobago	TD	TT	TTO	TT	TTO
Turks and Caicos Islands	TK	TC	TCA	TC	TCA
Uruguay	UY	UY	URY	UY	URY
Venezuela	VE	VE	VEN	VE	VEN
Virgin Islands, British	VG	VG	VGB	VG	VGB

 * The same FIPS code, NU, is used for Nicaragua and the province of Nunavut, Canada in the PC*MILER database.

Official Sources

FIPS Country Codes:
http://geonames.nga.mil/ggmagaz/geonames4.asp and
http://www.state.gov/s/inr/rls/4250.htm

ISO2 Country Codes:
http://www.iso.org/iso/country_codes/iso_3166_code_lists/english_country_names_and_code_elements.htm and
http://www.iso.org/iso/english_country_names_and_code_elements#s

ISO 3 Country Codes:
http://unstats.un.org/unsd/methods/m49/m49alpha.htm

GENC2 and GENC3 Country Codes (Geopolitical Entities, Names and Codes):
Issued by the National Geospatial-Intelligence Agency
https://www1.nga.mil/Pages/default.aspx

For PC*MILER|Streets users, valid directional and street type abbreviations for street address entry in North America are listed below. Spelling out the whole word is also acceptable. Capitalization is not necessary.

Directional Synonyms for Address Entry – Prefix or Suffix

Full Spelling	Valid in PC*MILER
EAST	E
EAST	E.
NORTH	N
NORTH	N.
NORTH	NO
NORTH	NO.
NORTHEAST	N-E
NORTHEAST	N.E
NORTHEAST	N.E.
NORTHEAST	NE
NORTHEAST	NE.
NORTHEAST	NORTH-EAST
NORTHWEST	N-W
NORTHWEST	N.W
NORTHWEST.	N.W.
NORTHWEST	NORTH-WEST
NORTHWEST	NW
NORTHWEST	NW.
SOUTH	S
SOUTH	S.
SOUTH	SO
SOUTH	SO.
SOUTHEAST	S-E
SOUTHEAST	S.E
SOUTHEAST	S.E.
SOUTHEAST	SE
SOUTHEAST	SE.
SOUTHEAST	SOUTH-EAST
SOUTHWEST	S-W
SOUTHWEST	S.W
SOUTHWEST	S.W.
SOUTHWEST	SOUTH-WEST
SOUTHWEST	SW
SOUTHWEST	SW.
WEST	W
WEST	W.

Synonyms for Street Types

Full Spelling	Valid in PC*MILER
ALLEY	AL
ALLEY	AL.
ALLEY	ALL
ALLEY	ALL.
ALLEY	ALY
ALLEY	ALY.
ARCADE	ARC
ARCADE	ARC.
AVENUE	AV
AVENUE	AV.
AVENUE	AVDA
AVENUE	AVDA.
AVENUE	AVE
AVENUE	AVE.
AVENUE	AVEN
AVENUE	AVEN.
AVENUE	AVENIDA
AVENUE	AVENIDA.
AVENUE DES	AV DES
AVENUE DES	AV DES.
BASSIN	BAS
BASSIN	BAS.
BASSINS	BAS
BASSINS	BAS.
BEACH	BCH
BEACH	BCH.
BEND	BND
BEND	BND.
BERGE	BER
BERGE	BER.
BLUFFS	BLFS
BLUFFS	BLFS.
BOUCLE	BCLE
BOUCLE	BCLE.
BOULEVARD	BD
BOULEVARD	BD.
BOULEVARD	BL
BOULEVARD	BL.
BOULEVARD	BLVD
BOULEVARD	BLVD.
BOULEVARD	BOUL
BOULEVARD	BOUL.
BRIDGE	BRDG
BRIDGE	BRDG.
BRIDGE	BRG
BRIDGE	BRG.
BROOK	BRK
BROOK	BRK.
BROOKS	BRKS
BROOKS	BRKS.
BUTTE	BUT
BUTTE	BUT.
BYPASS	BYP
BYPASS	BYP.
CALE	CAL
CALE	CAL.
CAPE	CPE
CAPE	CPE.
CARREFOUR	CAR
CARREFOUR	CAR.
CARRIERE	CARE
CARRIERE	CARE.
CAUSEWAY	CAUSE
CAUSEWAY	CAUSE.
CAUSEWAY	CSWY
CAUSEWAY	CSWY.
CAVEE	CAV
CAVEE	CAV.
CENTER	CNTR
CENTER	CNTR.
CENTER	CTR
CENTER	CTR.
CHATEAU	CHA
CHATEAU	CHA.
CHEMIN	CH
CHEMIN	CH.
CHEMIN	CHE
CHEMIN	CHE.
CHEMINEMENT	CHEM
CHEMINEMENT	CHEM.
CIRCLE	CIR
CIRCLE	CIR.
CIRCLE	CIRC
CIRCLE	CIRC.
CIRCLES	CIRS
CIRCLES	CIRS.
CLIFFS	CLFS
CLIFFS	CLFS.
CITE	CIT
CITE	CIT.
CLOS	CL
CLOS	CL.
COLONEL	COL
COLONEL	COL.
COMMON	CMN
COMMON	CMN.
COMMONS	CMN
COMMONS	CMN.

COMMONS	CMNS	EXPRESSWAY	EXPR
COMMONS	CMNS.	EXPRESSWAY	EXPR.
CORNER	COR	EXPRESSWAY	EXPY
CORNER	COR.	EXPRESSWAY	EXPY.
CORNERS	CORS	EXPRESSWAY	EXWY
CORNERS	CORS.	EXPRESSWAY	EXWY.
CONTOUR	CTR	EXTENSION	EXT
CORNICHE	CORN	EXTENSION	EXT.
COTE	COT	EXTENSIONS	EXTS
COUR	C	EXTENSIONS	EXTS.
COUR	CR	FALLS	FLS
COURS	CRS	FALLS	FLS.
COURT	CRT	FARM-TO-MARKET	F-M
COURT	CRT.	FARM-TO-MARKET	FM
COURT	CT	FARM-TO-MARKET	FM.
COURT	CT.	FAUBOURG	FAUB
COURTS	CTS	FAUBOURG	FAUB.
COURTS	CTS.	FIELD	FLD
COVE	CV	FIELD	FLD.
COVE	CV.	FIELDS	FLDS
COVES	CVS	FIELDS	FLDS.
COVES	CVS.	FLATS	FLTS
CREEK	CRK	FLATS	FLTS.
CREEK	CRK.	FORKS	FRKS
CRESCENT	CRES	FORKS	FRKS.
CRESCENT	CRES.	FORUM	FORM
CRESCENT	CRESC	FREEWAY	FRWY
CRESCENT	CRESC.	FREEWAY	FRWY.
CRESCENT	CRESNT	FREEWAY	FWY
CREST	CRST	FREEWAY	FWY.
CREST	CRST.	GLEN	GLN
CROSSING	CRSG	GLEN	GLN.
CROSSING	CRSG.	GRAND BOULEVARD	GBD
CROSSING	XING	GRAND BOULEVARD	GBLVD
CROSSING	XING.	GREEN	GRN
CROSSROADS	XRDS	GREEN	GRN.
CROSSROADS	XRDS.	GREENS	GRNS
DESCENTE	DESC	GREENS	GRNS.
DRIVE	DR	GROVE	GRV
DRIVE	DR.	GROVE	GRV.
DRIVE	DRV	GROVES	GRVS
DRIVE	DRV.	GROVES	GRVS.
DRIVES	DRS	GRANDE RUE	GR
DRIVES	DRS.	GRIMPETTE	GRP
ENCLAVE	ENC	GRIMPETTE	GRP.
ENCLOS	ENC	HARBOR	HBR
ESPACE	ESP	HAVEN	HVN
ESPLANADE	ESP	HAVEN	HVN.
ESTATE	EST	HEIGHTS	HTS
ESTATE	EST.	HIGHWAY	HWY
ESTATES	ESTS	HIGHWAY	HWY.
ESTATES	ESTS.	HIGHWAY	HY

HIGHWAY	HY.	MANORS	MNRS
HIGHWAY	HIWAY	MANORS	MNRS.
HIGHWAY	HIWAY.	MEADOW	MDW
HILL	HL	MEADOW	MDW.
HILLS	HLS	MEADOWS	MDWS
HILLS	HLS.	MEADOWS	MDWS.
HOLLOW	HOLW	MILLS	MLS
HOLLOW	HOLW.	MILLS	MLS.
IMMEUBLE	IMM	MOTORWAY	MRWY
IMMEUBLE	IMM.	MOTORWAY	MRWY.
IMPASSE	IMP	MOTORWAY	MTRWY
IMPASSE	IMP.	MOTORWAY	MTRWY.
ISLAND	IS	MOTORWAY	MTWY
ISLAND	IS.	MOTORWAY	MTWY.
JARDIN	J	MOUNT	MT
KEY	KY	MOUNT	MT.
KEY	KY.	OVERPASS	OPAS
KEYS	KYS	OVERPASS	OPAS.
KEYS	KYS.	OVERPASS	OVER
KNOLL	KNL	OVERPASS	OVER.
KNOLL	KNL.	OVERPASS	OVPS
KNOLLS	KNLS	OVERPASS	OVPS.
KNOLLS	KNLS.	OVERPASS	OVRPS
LAKES	LKS	OVERPASS	OVRPS.
LAKES	LKS.	PARK	PK
LAND	LAND	PARK	PK.
LAND	LAND.	PARK	PRK
LANDING	LNDG	PARK	PRK.
LANDING	LNDG.	PARKWAY	PKY
LANE	LA	PARKWAY	PKY.
LANE	LA.	PARKWAY	PKW
LANE	LN	PARKWAY	PKW.
LANE	LN.	PARKWAY	PKWY
LEVEE	LEV	PARKWAY	PKWY.
LIEU DIT	L-D	PARKWAY	PKWAY
LIEU DIT	LD	PARKWAY	PKWAY.
LIEU DIT	LIEU	PARKWAY	PRKWY
LIEU-DIT	L-D	PARKWAY	PRKWY.
LIEU-DIT	LD	PARVIS	PAR
LIEU-DIT	LIEU	PASEO	PSO
LIGHTS	LGTS	PASS	PS
LIGHTS	LGTS.	PASS	PS.
LOCKS	LCKS	PASSAGE	PASS
LOCKS	LCKS.	PATH	PTH
LOOP	LP	PATH	PTH.
LOOP	LP.	PETITE AVENUE	PTA
LOTISSEMENT	LOT	PETITE IMPASSE	PTI
LOTISSEMENT	LOT.	PETITE ROUTE	PRT
MALL	ML	PETITE RUE	PTR
MALL	ML.	PIKE	PKE
MANOR	MNR	PIKE	PKE.
MANOR	MNR.	PINE	PNE

PINE	PNE.	ROND POINT	RP.
PINES	PNES	ROND-POINT	ROND
PINES	PNES.	ROND-POINT	RP
PLACE	PL	ROND-POINT	RP.
PLACE	PL.	ROTONDE	ROT
PLACE	PLA	ROTONDE	RTD
PLACE	PLA.	ROUTE	RTE
PLACE	PLAC	RUE	R
PLACE	PLAC.	RUE	R.
PLACE	PLC	RUE DE	RUE
PLACE	PLC.	SENTIER	SENT
PLAINS	PLNS	SENTIER	SENT.
PLAINS	PLNS.	SHOALS	SHLS
PLAZA	PLZ	SHOALS	SHLS.
PLAZA	PLZ.	SHORES	SHRS
POINT	PNT	SHORES	SHRS.
POINT	PNT.	SKYWAY	SKWY
POINT	PT	SKYWAY	SKWY.
POINT	PT.	SPRINGS	SPGS
POINTS	PTS	SPRINGS	SPGS.
POINTS	PTS.	SQUARE	SQ
PORTE	PTE	SQUARE	SQ.
POURTOUR	POUR	SQUARE	SQR
POURTOUR	POUR.	SQUARE	SQR.
PRAIRIE	PR	SQUARES	SQS
PRAIRIE	PR.	SQUARES	SQS.
PROMENADE	PROM	STRASSE	STR
QUAI	Q	STRASSE	STR.
QUAI	Q.	STREET	ST
QUARTIER	QUA	STREET	ST.
RACCOURCI	RAC	STREET	STR
RACCOURCI	RAC.	STREET	STR.
RAMP	RMP	STREETS	STS
RAMP	RMP.	STREETS	STS.
RAMPE	RPE	TERRACE	TER
RAPIDS	RPDS	TERRACE	TER.
RAPIDS	RPDS.	TERRACE	TERR
REMPART	REM	TERRACE	TERR.
RESIDENCE	RES	TERRACE	TRC
RESIDENCE	RES.	TERRACE	TRC.
RIDGE	RDG	TERRASSE	TER
RIDGE	RDG.	TERTRE	TRT
RIDGES	RDGS	THROUGHWAY	THRUWAY
RIDGES	RDGS.	THROUGHWAY	THWY
ROAD	RD	THROUGHWAY	THWY.
ROAD	RD.	TOUR	TR
ROADS	RDS	TOUR	TR.
ROADS	RDS.	TRACK	TRAK
ROCADE	ROC	TRACK	TRAK.
ROCADE	ROC.	TRAFFICWAY	TFCWY
ROND POINT	ROND	TRAFFICWAY	TFCWY.
ROND POINT	RP	TRAFFICWAY	TFWY

TRAFFICWAY	TFWY.	VENELLE	VEN
TRAFFICWAY	TRFY	VIEILLE ROUTE	VRTE
TRAFFICWAY	TRFY.	VIEUX CHEMIN	VCHE
TRAFFICWAY	TRWY	VIEW	VW
TRAFFICWAY	TRWY.	VIEW	VW.
TRAIL	TRL	VIEWS	VWS
TRAIL	TRL.	VIEWS	VWS.
TRAILER	TRLR	VILLAGE	VGE
TRAILER	TRLR.	VILLAGE	VLG
TRAVERSE	TRA	VILLAGE	VLG.
TUNNEL	TUN	VILLAGES	VLGS
TUNNEL	TUN.	VILLAGES	VLGS.
TUNNEL	TUNL	VOIE	V
TUNNEL	TUNL.	WAY	WY
TUNNEL	TUNN	WAY	WY.
TUNNEL	TUNN.	WAYS	WAYS
TURNPIKE	TPK	WAYS	WAYS.
TURNPIKE	TPK.	WELLS	WLS
TURNPIKE	TPKE	WELLS	WLS.
TURNPIKE	TPKE.	ZONE ARTISANALE	ZA
UNDERPASS	UNP	ZONE D'ACTIVITE	Z.A.
UNDERPASS	UNP.	ZONE D'ACTIVITE	ZA.
UNDERPASS	UNPS	ZONE INDUSTRIELLE	Z.I
UNDERPASS	UNPS.	ZONE INDUSTRIELLE	Z.I.
UNDERPASS	UNRPS	ZONE INDUSTRIELLE	ZI
UNDERPASS	UNRPS.		
UNDERPASS	UPAS		
UNDERPASS	UPAS.		

The table below lists PC*MILER default road speeds worldwide by jurisdiction and PC*MILER road category. Speeds are in miles per hour. To see default speeds for any world region, you can also select the File menu > *Application Settings* > **General**, select a region, and then click the **Road Speeds** tab and select a country from the pick list. *(PC*MILER/Worldwide must be licensed and installed for regions other than North America.)*

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Africa	**Algeria**	**AG**	62	56	56	43	50	31	37	25	25	18	26	26
Africa	**Angola**	**AO**	50	45	40	35	35	30	30	25	20	15	18	18
Africa	**Botswana**	**BC**	50	45	40	35	35	30	30	25	20	15	21	21
Africa	**Benin**	**BN**	50	45	40	35	35	30	30	25	20	15	18	18
Africa	**Burundi**	**BY**	50	45	40	35	35	30	30	25	20	15	18	18
Africa	**Chad**	**CD**	50	45	40	35	35	30	30	25	20	15	21	21
Africa	**Congo**	**CF**	50	45	40	35	35	30	30	25	20	15	18	18
Africa	**Republic of Congo**	**CG**	50	45	40	35	35	30	30	25	20	15	23	23
Africa	**Cameroon**	**CM**	50	45	40	35	35	30	30	25	20	15	21	21
Africa	**Comoros**	**CN**	50	45	40	35	35	30	30	25	20	15	15	15
Africa	**Central African Republic**	**CT**	50	45	40	35	35	30	30	25	20	15	18	18
Africa	**Cape Verde**	**CV**	50	45	40	35	35	30	30	25	20	15	23	23
Africa	**Djibouti**	**DJ**	50	45	40	35	35	30	30	25	20	15	21	21
Africa	**Egypt**	**EG**	62	56	56	43	37	31	25	25	18	12	27	27
Africa	**Equatorial Guinea**	**EK**	50	45	40	35	35	30	30	25	20	15	21	21

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Africa	Eritrea	ER	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Ethiopia	ET	62	56	56	43	50	31	37	25	25	18	18	18
Africa	Gambia	GA	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Gabon	GB	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Ghana	GH	62	56	56	43	50	31	37	25	25	18	21	21
Africa	Guinea	GV	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Ivory Coast	IV	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Kenya	KE	62	56	56	43	50	31	37	25	25	18	21	21
Africa	Liberia	LI	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Lesotho	LT	50	45	40	35	35	30	30	25	20	15	23	23
Africa	Libya	LY	50	45	40	35	35	30	30	25	20	15	26	26
Africa	Madagascar	MA	50	45	40	35	35	30	30	25	20	15	15	15
Africa	Mayotte	MF	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Malawi	MI	62	56	56	43	50	31	37	25	25	18	21	21
Africa	Mali	ML	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Morocco	MO	62	56	56	43	50	31	37	25	25	18	26	26
Africa	Mauritius	MP	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Mauritania	MR	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Mozambique	MZ	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Niger	NG	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Nigeria	NI	62	56	56	43	50	31	37	25	25	18	21	21
Africa	South Sudan	OD	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Guinea-Bissau	PU	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Reunion	RE	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Rwanda	RW	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Seychelles	SE	50	45	40	35	35	30	30	25	20	15	18	18

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Africa	South Africa	SF	68	62	56	43	50	31	37	25	25	18	24	24
Africa	Senegal	SG	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Saint Helena	SH	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Sierra Leone	SL	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Somalia	SO	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Sudan	SU	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Togo	TO	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Sao Tome and Principe	TP	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Tunisia	TS	62	56	56	43	50	31	37	25	25	18	26	26
Africa	Tanzania	TZ	62	56	56	43	50	31	37	25	25	18	23	23
Africa	Uganda	UG	62	56	56	43	50	31	37	25	25	18	23	23
Africa	Burkina Faso	UV	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Namibia	WA	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Western Sahara	WI	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Swaziland	WZ	50	45	40	35	35	30	30	25	20	15	18	18
Africa	Zambia	ZA	50	45	40	35	35	30	30	25	20	15	21	21
Africa	Zimbabwe	ZI	62	56	50	43	43	31	37	25	25	18	23	23
Asia	Bangladesh	BG	50	50	50	43	43	31	31	18	25	12	21	21
Asia	Burma (Myanmar)	BM	50	50	50	43	43	31	31	18	25	12	21	21
Asia	Bhutan	BT	50	50	50	43	43	31	31	18	25	12	16	16
Asia	British Indian Ocean Territory	IO	50	43	43	37	37	31	31	25	25	18	18	18
Asia	Brunei Darussalam	BX	50	50	50	43	43	31	31	18	25	12	18	18
Asia	Cambodia	CB	56	56	56	50	43	31	31	25	25	18	18	18
Asia	Sri Lanka	CE	50	50	50	43	43	31	31	18	25	12	22	22
Asia	China	CH	68	62	56	50	50	31	37	18	25	12	27	27

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Asia	Guam	GQ	45	45	45	35	35	35	35	25	25	18	18	18
Asia	Hong Kong	HK	31	31	31	31	25	25	18	18	12	12	27	27
Asia	Indonesia	ID	50	50	50	43	43	31	31	18	25	12	27	27
Asia	India	IN	62	49	49	37	43	31	31	18	25	12	22	22
Asia	Japan	JA	62	56	50	43	37	31	31	18	25	12	26	26
Asia	Korea, North	KN	56	56	56	50	43	31	31	25	25	18	21	21
Asia	Korea, South	KS	56	56	56	50	43	31	31	25	25	18	21	21
Asia	Lao People's Democratic Republic	LA	56	56	56	50	43	31	31	25	25	18	16	16
Asia	Macao	MC	50	50	50	43	43	31	31	18	25	12	27	27
Asia	Mongolia	MG	56	56	56	50	43	31	31	25	25	18	16	16
Asia	Maldives	MV	56	56	56	50	43	31	31	25	25	18	22	22
Asia	Malaysia	MY	50	50	50	43	43	31	31	18	25	12	27	27
Asia	Nepal	NP	50	50	50	43	43	31	31	18	25	12	16	16
Asia	Northern Mariana Islands	CQ	50	43	43	37	37	31	31	25	25	18	15	15
Asia	Pakistan	PK	56	56	56	50	43	31	31	25	25	18	21	21
Asia	Palau	PS	50	43	43	37	37	31	31	25	25	18	15	15
Asia	Papua New Guinea	PP	50	50	50	43	43	31	31	18	25	12	18	18
Asia	Philippines	RP	50	50	50	43	43	31	31	18	25	12	25	25
Asia	Singapore	SN	56	56	56	50	43	31	31	25	25	18	27	27
Asia	Solomon Islands	BP	50	43	43	37	37	31	31	25	25	18	18	18
Asia	Thailand	TH	50	50	50	43	43	31	31	18	25	12	21	21
Asia	East Timor	TT	50	50	50	43	43	31	31	18	25	12	18	18
Asia	Taiwan	TW	50	50	50	43	43	31	31	18	25	12	25	25
Asia	Vietnam	VM	50	50	50	43	43	31	31	18	25	12	21	21

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Europe	Albania	AL	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Andorra	AN	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Armenia	AM	56	56	56	50	43	31	31	25	25	18	16	16
Europe	Austria	AU	50	50	34	31	34	25	25	16	18	12	16	16
Europe	Azerbaijan	AJ	56	56	56	50	43	31	31	25	25	18	20	20
Europe	Belgium	BE	56	56	45	31	30	25	25	16	18	12	16	16
Europe	Bosnia and Herzegovina	BK	62	43	50	31	39	25	25	16	18	12	16	16
Europe	Belarus	BO	62	56	40	31	39	25	25	16	18	12	16	16
Europe	Bulgaria	BU	62	62	34	31	34	25	25	16	18	12	16	16
Europe	Cyprus	CY	56	56	56	50	43	31	31	25	25	18	25	25
Europe	Denmark	DA	50	50	34	31	34	25	25	16	18	12	16	16
Europe	Ireland	EI	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Estonia	EN	56	43	45	31	45	25	25	16	18	12	16	16
Europe	Czech Republic	EZ	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Finland	FI	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Faroe Islands	FO	50	43	40	31	31	25	25	16	18	12	16	16
Europe	France	FR	56	43	40	31	31	25	25	16	18	12	16	16
Europe	Georgia	GG	56	56	56	50	43	31	31	25	25	18	20	20
Europe	Gibraltar	GI	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Germany	GM	50	43	35	31	30	25	25	16	18	12	16	16
Europe	Greece	GR	43	43	34	31	34	25	25	16	18	12	16	16
Europe	Croatia	HR	50	50	34	31	34	25	25	16	18	12	16	16
Europe	Cyprus	CY	56	56	56	50	43	31	31	25	25	18	25	25
Europe	Hungary	HU	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Iceland	IC	50	43	40	31	31	25	25	16	18	12	16	16

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Europe	Isle of Man	IM	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Italy	IT	50	43	35	31	34	25	25	16	18	12	16	16
Europe	Kosovo	KV	50	50	34	31	34	30	25	16	18	12	16	16
Europe	Kazakhstan	KZ	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Kyrgyzstan	KG	56	56	56	50	43	31	31	25	25	18	16	16
Europe	Latvia	LG	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Lithuania	LH	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Slovakia	LO	50	50	40	37	39	30	25	16	18	12	16	16
Europe	Liechtenstein	LS	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Luxembourg	LU	56	56	38	31	38	25	25	16	18	12	16	16
Europe	Moldavia	MD	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Montenegro	MJ	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Macedonia	MK	43	43	34	31	34	25	25	16	18	12	16	16
Europe	Monaco	MN	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Malta	MT	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Netherlands	NL	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Norway	NO	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Poland	PL	50	50	40	31	34	25	25	16	18	12	16	16
Europe	Portugal	PO	50	50	34	25	34	20	25	16	18	12	16	16
Europe	Serbia	RI	50	50	34	31	34	30	25	16	18	12	16	16
Europe	Romania	RO	56	56	40	31	34	25	25	16	18	12	16	16
Europe	Russian Federation	RS	62	56	40	31	39	25	25	16	18	12	16	16
Europe	Slovenia	SI	50	50	34	31	34	25	25	16	18	12	16	16
Europe	San Marino	SM	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Spain	SP	56	43	40	31	34	25	25	16	18	12	16	16

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Europe	Svalbard and Jan Mayen Islands	SV	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Sweden	SW	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Switzerland	SZ	50	50	40	31	39	25	25	16	18	12	16	16
Europe	Tajikistan	TI	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Turkey	TU	62	56	40	31	39	25	25	16	18	12	16	16
Europe	Turkmenistan	TX	56	56	56	50	43	31	31	25	25	18	20	20
Europe	United Kingdom	UK	60	40	46	30	32	24	25	16	18	12	16	16
Europe	Ukraine	UP	62	56	40	31	39	25	25	16	18	12	16	16
Europe	Uzbekistan	UZ	50	43	40	31	31	25	25	16	18	12	16	16
Europe	Vatican City	VT	50	43	40	31	31	25	25	16	18	12	16	16
Middle East	Afghanistan	AF	56	56	56	50	43	31	31	25	25	18	16	16
Middle East	Bahrain	BA	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Gaza Strip	GZ	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Iran (Islamic Republic of)	IR	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Iraq	IZ	56	56	56	50	43	31	31	25	25	18	21	21
Middle East	Israel	IS	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Jordan	JO	56	56	56	50	43	31	31	25	25	18	16	16
Middle East	Kuwait	KU	56	56	56	50	43	31	31	25	25	18	20	20
Middle East	Lebanon	LE	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Oman	MU	56	56	56	50	43	31	31	25	25	18	21	21
Middle East	Palestinian Territory	--	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Qatar	QA	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Saudi Arabia	SA	62	56	56	43	37	31	31	18	25	12	25	25
Middle East	Syrian Arab Republic	SY	56	56	56	50	43	31	31	25	25	18	16	16

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Middle East	United Arab Emirates	AE	68	62	62	56	50	37	37	25	25	18	27	27
Middle East	West Bank	WE	56	56	56	50	43	31	31	25	25	18	25	25
Middle East	Yemen	YM	56	56	56	50	43	31	31	25	25	18	21	21
N. America	Alberta	AB	62	62	62	43	56	37	43	37	31	25	21	21
N. America	Aguascalientes	AG	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Alaska	AK	65	55	55	40	45	35	45	35	30	25	17	17
N. America	Alabama	AL	68	60	55	40	45	35	45	35	30	25	15	15
N. America	Arkansas	AR	65	55	55	40	45	35	45	35	35	25	15	15
N. America	Arizona	AZ	68	60	60	40	50	35	45	35	35	25	15	15
N. America	British Columbia	BC	68	62	62	37	56	37	43	37	31	25	21	21
N. America	Baja California	BJ	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Baja California Sur	BS	68	62	56	43	49	37	43	31	31	25	23	23
N. America	California	CA	55	55	55	40	45	30	40	30	30	25	16	16
N. America	Chiapas	CH	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Chihuahua	CI	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Colima	CL	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Colorado	CO	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Campeche	CP	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Connecticut	CT	65	55	55	40	45	30	35	30	25	25	13	13
N. America	Coahuila de Zaragoza	CU	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Dist. of Columbia	DC	55	50	45	40	40	35	35	30	25	25	13	13
N. America	Delaware	DE	65	55	55	40	45	30	35	30	25	25	13	13
N. America	Distrito Federal	DF	62	62	43	43	37	37	31	31	25	25	23	23
N. America	Durango	DG	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Mexico (Estado)	EM	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Florida	FL	68	60	55	40	45	35	45	35	30	25	13	13

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
N. America	Georgia	GA	68	60	55	40	45	35	40	30	30	25	13	13
N. America	Guanajuato	GJ	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Greenland	GL	45	45	45	35	35	35	35	25	25	20	13	13
N. America	Guerrero	GR	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Hidalgo	HG	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Hawaii	HI	60	50	45	35	35	35	25	25	25	25	13	13
N. America	Iowa	IA	68	55	60	40	45	35	45	35	35	25	15	15
N. America	Idaho	ID	65	60	60	40	50	35	45	35	35	25	15	15
N. America	Illinois	IL	65	55	55	40	45	35	45	35	35	25	15	15
N. America	Indiana	IN	65	55	55	40	45	35	40	30	30	25	15	15
N. America	Jalisco	JA	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Kansas	KS	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Kentucky	KY	65	60	55	40	45	35	40	30	30	25	15	15
N. America	Louisiana	LA	68	60	55	40	45	35	45	35	35	25	15	15
N. America	Massachusetts	MA	65	60	55	40	45	30	35	30	25	25	13	13
N. America	Manitoba	MB	68	62	62	43	56	37	43	37	31	25	21	21
N. America	Maryland	MD	65	60	55	40	45	30	35	30	25	25	13	13
N. America	Maine	ME	65	60	60	40	45	35	45	35	30	25	13	13
N. America	Michoacan de Ocampo	MH	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Michigan	MI	60	55	55	40	45	35	40	30	30	25	18	18
N. America	Minnesota	MN	68	60	60	40	45	35	45	35	35	25	15	15
N. America	Missouri	MO	68	60	60	40	45	35	45	35	35	25	15	15
N. America	Morelos	MR	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Mississippi	MS	68	60	55	40	45	35	45	35	30	25	15	15
N. America	Montana	MT	65	60	60	40	50	35	45	35	35	25	15	15
N. America	Nayarit	NA	68	62	56	43	49	37	43	31	31	25	23	23

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
N. America	New Brunswick	NB	62	62	56	43	56	37	43	31	31	25	21	21
N. America	North Carolina	NC	68	60	55	40	45	35	40	30	30	25	13	13
N. America	North Dakota	ND	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Nebraska	NE	68	60	60	40	50	35	45	35	35	25	15	15
N. America	New Hampshire	NH	65	60	55	40	45	35	45	35	30	25	13	13
N. America	New Jersey	NJ	65	55	55	40	45	30	35	30	25	25	13	13
N. America	Newfoundland and Labrador	NL	62	62	62	43	56	37	43	31	31	25	21	21
N. America	New Mexico	NM	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Nova Scotia	NS	62	62	62	43	56	37	43	31	31	25	21	21
N. America	Northwest Territory	NT	56	56	56	43	56	37	43	31	31	25	21	21
N. America	Nunavut	NU	59	50	41	27	27	18	23	14	16	9	5	5
N. America	Nevada	NV	68	60	60	40	50	35	45	35	35	25	21	21
N. America	Nuevo Leon	NX	68	62	56	43	49	37	43	31	31	25	23	23
N. America	New York	NY	65	60	55	40	45	30	35	30	25	25	13	13
N. America	Oaxaca	OA	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Ohio	OH	65	60	55	40	45	35	40	30	30	25	15	15
N. America	Oklahoma	OK	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Ontario	ON	62	62	62	43	49	37	43	31	31	25	21	21
N. America	Oregon	OR	55	55	50	40	45	35	40	30	30	25	16	16
N. America	Pennsylvania	PA	65	55	55	40	45	30	35	30	25	25	13	13
N. America	Prince Edward Island	PE	62	62	56	43	56	37	49	37	31	25	21	21
N. America	Puerto Rico	PR	65	55	45	40	45	30	30	30	30	25	15	15
N. America	Puebla	PU	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Queretaro Arteaga	QA	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Quebec	QC	62	62	56	37	56	37	49	37	31	25	21	21

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
N. America	Quintana Roo	QR	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Rhode Island	RI	65	55	55	40	45	30	35	30	25	25	13	13
N. America	South Carolina	SC	68	60	55	40	45	35	40	30	30	25	13	13
N. America	South Dakota	SD	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Sinaloa	SI	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Saskatchewan	SK	62	62	62	43	56	37	43	37	31	25	21	21
N. America	San Luis Potosi	SL	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Sonora	SO	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Tabasco	TA	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Tlaxcala	TL	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Tamaulipas	TM	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Tennessee	TN	68	60	55	40	45	35	40	30	30	25	15	15
N. America	Texas	TX	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Utah	UT	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Virginia	VA	65	60	55	40	45	30	40	30	30	25	13	13
N. America	Vermont	VT	65	55	55	40	45	35	45	35	30	25	15	15
N. America	Veracruz	VZ	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Virgin Islands, U.S.	VI	56	43	43	37	37	31	31	25	18	18	24	24
N. America	Washington	WA	60	60	55	40	45	30	35	30	30	25	16	16
N. America	Wisconsin	WI	65	60	60	40	45	35	45	35	35	25	18	18
N. America	West Virginia	WV	68	55	55	40	45	35	35	30	30	25	15	15
N. America	Wyoming	WY	68	60	60	40	50	35	45	35	35	25	15	15
N. America	Yucatan	YC	68	62	56	43	49	37	43	31	31	25	23	23
N. America	Yukon Territory	YT	56	56	56	43	56	37	49	37	31	25	21	21
N. America	Zacatecas	ZT	68	62	56	43	49	37	43	31	31	25	23	23
Oceania	American Samoa	AQ	50	43	43	37	37	31	31	25	25	18	18	18

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
Oceania	Australia	AS	68	56	56	43	50	37	37	25	25	18	22	22
Oceania	Cook Islands	CW	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	Fiji	FJ	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	Micronesia, Federated States of	FM	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	French Polynesia	FP	50	43	43	37	37	31	31	25	25	18	20	20
Oceania	French Southern and Antarctic Islands	FS	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Kiribati	KR	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Midway Island	MQ	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	New Caledonia	NC	50	43	43	37	37	31	31	25	25	18	22	22
Oceania	Niue	NE	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Norfolk Island	NF	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	Vanuatu	NH	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Nauru	NR	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	New Zealand	NZ	62	56	56	43	43	31	37	25	25	18	23	23
Oceania	Pitcairn	PC	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Marshall Islands	RM	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	Tokelau	TL	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Tonga	TN	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Tuvalu	TV	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Wallis & Futuna Islands	WF	50	43	43	37	37	31	31	25	25	18	15	15
Oceania	Wake Island	WQ	50	43	43	37	37	31	31	25	25	18	18	18
Oceania	Western Samoa	WS	50	43	43	37	37	31	31	25	25	18	18	18
S. America	Aruba	AA	56	43	43	37	37	31	31	25	18	18	24	24
S. America	Antigua and Barbuda	AC	56	43	43	37	37	31	31	25	18	18	16	16

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
S. America	Argentina	AR	68	50	50	37	37	31	31	25	18	12	21	21
S. America	Anguilla	AV	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Barbados	BB	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Belize	BH	62	56	56	43	49	37	37	31	31	25	21	21
S. America	Bermuda	BD	56	49	49	43	43	37	31	31	25	25	21	21
S. America	Bahamas	BF	56	43	43	37	37	31	31	25	18	18	26	26
S. America	Bolivia	BL	62	50	50	37	37	31	31	25	18	12	21	21
S. America	Brazil	BR	68	43	50	37	37	25	31	18	18	12	21	21
S. America	Chile	CI	62	50	43	37	31	31	25	25	18	12	21	21
S. America	Cayman Islands	CJ	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Colombia	CO	62	50	43	37	31	31	25	25	18	12	21	21
S. America	Costa Rica	CS	56	49	49	43	43	37	31	31	25	25	21	21
S. America	Cuba	CU	56	43	43	37	37	31	31	25	18	18	23	23
S. America	Curacao	UC	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Dominica	DO	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Dominican Republic	DR	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Ecuador	EC	62	50	43	37	31	31	25	25	18	12	21	21
S. America	El Salvador	ES	62	56	56	43	49	37	37	31	31	25	21	21
S. America	French Guiana	FG	62	50	50	37	37	31	31	25	18	12	21	21
S. America	Falkland Islands (Malvinas)	FK	56	43	43	37	37	31	31	25	18	18	12	12
S. America	Grenada	GJ	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Guadeloupe	GP	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Guantanamo Bay	--	56	43	43	37	37	31	31	25	18	18	23	23
S. America	Guatemala	GT	62	56	56	43	49	37	37	31	31	25	21	21
S. America	Guyana	GY	62	50	50	37	37	31	31	25	18	12	21	21

Region	State	FIPS	Interstate Highway		Major Highway		Primary Highway		Secondary Highway		Local		Ferries	
			Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
S. America	Haiti	HA	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Honduras	HO	62	56	56	43	49	37	37	31	31	25	21	21
S. America	Jamaica	JM	56	43	43	37	37	31	31	25	18	18	23	23
S. America	Martinique	MB	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Montserrat	MH	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Netherlands Antilles	NT	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Nicaragua	NU	59	50	41	27	27	18	23	14	16	9	5	5
S. America	Panama	PM	62	56	56	43	49	37	37	31	31	25	21	21
S. America	Paraguay	PA	62	50	50	37	37	31	31	25	18	12	21	21
S. America	Peru	PE	62	50	43	37	31	31	25	25	18	12	21	21
S. America	Saint Barthelemy	TB	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Saint Martin	RN	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Saint Kitts and Nevis Islands	SC	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Saint Lucia	ST	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Saint Vincent and the Grenadines	VC	56	43	43	37	37	31	31	25	18	18	20	20
S. America	Sint Maarten	NN	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Suriname	NS	62	50	50	37	37	31	31	25	18	12	21	21
S. America	Trinidad and Tobago	TD	62	50	43	37	31	31	25	25	18	12	25	25
S. America	Turks and Caicos Isl.	TK	56	43	43	37	37	31	31	25	18	18	16	16
S. America	Uruguay	UY	62	50	50	37	37	31	31	25	18	12	21	21
S. America	Venezuela	VE	62	50	43	37	31	31	25	25	18	12	21	21
S. America	Virgin Islands, British	VG	56	43	43	37	37	31	31	25	18	18	24	24

The chart below identifies the toll authorities that have assigned multiple names to the same toll plaza location. When generating a route using PC*MILER|Tolls, only one name for each toll plaza location is provided in the Detailed Route Report. Because a vehicle can travel through any of the sub-plazas at one of these locations, this chart may help you match up agency names to the names that appear along a route in the Detailed Route Report.

Currently there is only one toll plaza location in the database that has multiple names assigned to it:

Agency	Toll Road	Toll Plaza Name in PC*MILER|Connect	Toll Plaza Abbreviation in Detailed Route Report	Other Plaza Abbreviations Used By Agency at the Same Location	Other Plaza Names Used by Agency at the Same Location
VDOT	Chesapeake Expressway	Chesapeake Expressway	16, 17	18*	

* 18 is the abbreviation used for Discount Program Members.

Table 1 below lists roads that only accept toll discount programs. No cash or other payment option is offered, and driving on one of these roads without a transponder and discount program membership will cause an invoice to be sent with a surcharge added to the toll rate.

Table 2 lists all electronic toll roads (Open Road Tolling). Like the roads in Table 1, drivers without a transponder on these roads will receive an invoice with a video toll rate amount.

What differentiates these two types of roads is the amount of the surcharge on the roads in Table 1: these roads carry a relatively expensive surcharge, and the transportation authorities strongly advise against driving on these roads without a transponder.

TABLE 1. **Roads Accepting Only Toll Discount Programs – Additional Surcharge on Violations**

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
Florida	**Florida's Turnpike**	SunPass	None	For the Florida Turnpike, the five exits listed are SunPass Only. Drivers without SunPass are required to exit before or after these exits. If used by mistake then an invoice is sent home with a surcharge.
	Becker Road exit 138	SunPass	None	
	Jog Road exit 98	SunPass	None	
	SR 710 exit 107	SunPass	None	
	Consulate Drive exit 255	SunPass	None	
	Kissimmee Park Rd exit 240	SunPass	None	

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
Florida	**Polk Parkway -** Pace Road exit 23	SunPass	None	This exit on the Polk Parkway is SunPass only. If used by mistake an invoice is sent to the user with a surcharge.
	I-595 Express Lane	SunPass	None	Express Lanes tolling violators shall be charged $25 per trip plus the applicable toll amount.
Pennsylvania	**Pennsylvania Turnpike**	E-ZPass	None	For the four exits listed here a video toll plus a surcharge is sent in an invoice to the user.
	Virginia Drive exit 340	E-ZPass	None	
	Street Road exit 352			
	SR 29 exit 320	E-ZPass	None	
	SR 903 exit 87	E-ZPass	None	
Texas	**Camino Colombia Toll Road**	EZ Tag, TxTag, TollTag	None	You must have a TxTag account or other accepted prepaid account to pay tolls on Camino Colombia. Under Texas law, non-payment of tolls is a misdemeanor offense, and you may be subject to Administrative fees and fines of up to $350 per violation.
	Fort Bend Westpark Tollway	EZ Tag, TxTag	None	A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
Texas				a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.
	Fort Bend Parkway Toll Road (Fort Bend Section)	EZ Tag, TxTag, TollTag	None	A fee is added to the toll rate and an invoice it sent to drivers without EZ Tag.
	Westpark Tollway	EZ Tag, TxTag, TollTag	None	Driving without an EZ TAG results in a violation event. A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.
	Grand Parkway (Fort Bend section)	EZ Tag, TxTag, TollTag	None	A fee is added to the toll rate and an invoice it sent to drivers without EZ Tag.
	Texas State Highway 99	EZ Tag, TxTag, TollTag	None	A Notice of Toll Violation with a $5.00 fee for each toll charge is issued. Drivers who fail to pay violation notices on time are subject to collection fees and court fines that can add up to $350 per violation.

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Texas SH 242 Direct Connectors	EZ Tag, TxTag, TollTag	None	A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.
	Sam Houston Tollway	EZ Tag, TxTag, TollTag	None	There are nineteen plazas that require an EZ TAG. A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.
	North Gessner	EZ Tag, TxTag, TollTag	None	
	West Road Entrance Ramp	EZ Tag, TxTag, TollTag	None	
	Hammerly Blvd Entrance Ramp	EZ Tag, TxTag, TollTag	None	
	Bellaire Blvd Entrance Ramp	EZ Tag, TxTag, TollTag	None	
	Tidwell Road	EZ Tag, TxTag, TollTag	None	
	Garrett Road	EZ Tag, TxTag, TollTag	None	

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Generation Parkway	EZ Tag, TxTag, TollTag	None	
	Northeast Mainline Toll Plaza	EZ Tag, TxTag, TollTag	None	
	W Lake Houston Parkway	EZ Tag, TxTag, TollTag	None	
	John Ralston Road	EZ Tag, TxTag, TollTag	None	
	Wilson Road	EZ Tag, TxTag, TollTag	None	
Texas	Tanner Road Exit Ramp	EZ Tag, TxTag, TollTag	None	
	Clay Road Exit Ramp	EZ Tag, TxTag, TollTag	None	
	South Main Entrance Ramp	EZ Tag, TxTag, TollTag	None	
	Almeda Road Entrance Ramp	EZ Tag, TxTag, TollTag	None	
	Cullen Exit Ramp	EZ TAG, TxTag, TollTag	None	
	Wayside Entrance Ramp	EZ TAG, TxTag, TollTag	None	
	Red Bluff/ San Augustine Entrance Ramp	EZ TAG, TxTag, TollTag	None	
	Monroe Exit Ramp	EZ TAG, TxTag, TollTag	None	
	South Main	EZ TAG, TxTag, TollTag	None	
	Sam Houston Ship Channel Bridge	EZ TAG, TxTag, TollTag	None	A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Hardy Toll Road	EZ Tag, TxTag, TollTag	None	A toll violation event can result in a Toll Violation Invoice being sent to the registered owner/renter for the past-due toll amount plus fees. Independent of a Toll Violation Invoice, any toll violation event may also result in a traffic stop and the issuance of a traffic citation, which carries a significant fine plus court costs.
	Rankin Road	EZ Tag, TxTag, TollTag	None	
	Central Green Blvd	EZ Tag, TxTag, TollTag	None	
	Richey Road	EZ Tag, TxTag, TollTag	None	
	Aldine Mail Route	EZ Tag, TxTag, TollTag	None	
	Little York	EZ Tag, TxTag, TollTag	None	
	Tidwell Road	EZ Tag, TxTag, TollTag	None	

TABLE 2. Electronic Toll Roads (Open Road Tolling)

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
British Columbia	Golden Ears Bridge	Quickpass	Pay As You Go	If the driver is not a registered customer, the license plate information is forwarded electronically to ICBC when the bridge is crossed. TransLink uses the information received from ICBC to send a bill for

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
				the toll amount to the registered owner of the vehicle.
	Port Mann Bridge	TReO	Pay By Mail	
California	Golden Gate Bridge	FasTrak	Pay-by-Plate	
	Foothills-Eastern Toll Road	FasTrak	ExpressAccount Invoice	
	San Joaquin Hills Corridor	FasTrak	ExpressAccount Invoice	
Colorado	E-470	EXpressToll, GO-PASS	License Plate Toll	
	Northwest Parkway	EXpressToll, GO-PASS	License Plate Toll	
	I-25 HOV Express Lanes	EXpressToll, GO-PASS	License Plate Toll	
Florida	Snapper Creek Expressway SR 878	SunPass	Toll-By-Plate	
	Don Shula Expressway SR 874	SunPass	Toll-By-Plate	
	Gratigny Parkway SR 924	SunPass	Toll-By-Plate	
	Homestead Extension Of Florida's Turnpike - Exit 1 to Exit 47 including Miramar Plaza	SunPass	Toll-By-Plate	
	Sawgrass Expressway	SunPass	Toll-By-Plate	
	Veterans Expressway	SunPass	Toll-By-Plate	
	Airport Expressway	SunPass	Toll-By-Plate	
	Broad Causeway	SunPass	Toll-By-Plate	
	I-4/Selmon Expressway Interchange (Connector)	SunPass	Toll-By-Plate	
	Orchard Pond Parkway	SunPass	Toll-By-Plate	

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Poinciana Parkway	E-Pass	Pay by Plate	
	Dolphin Expressway SR 836	SunPass	Toll-By-Plate	
	Rickenbacker Causeway	SunPass	Toll-By-Plate	
	Venetian Causeway	SunPass	Toll-By-Plate	
	Mid-Bay Bridge Connector	SunPass	Toll-By-Plate	
	Florida's Turnpike –	SunPass	Toll-By-Plate	
	Griffin Road	SunPass	Toll-By-Plate	
	Hollywood Boulevard	SunPass	Toll-By-Plate	
	NW 27th Avenue	SunPass	Toll-By-Plate	
	Miramar Plaza	SunPass	Toll-By-Plate	
	County Line Road	SunPass	Toll-By-Plate	
	SR 417 X251	SunPass	Toll-By-Plate	
	Golden Glades Toll Plaza	SunPass	Toll-By-Plate	
	Central Florida Greeneway	E-Pass	Pay by Plate	
	East West Expressway	E-Pass	Pay by Plate	
	SR414 John Land Apopka	E-Pass	Pay by Plate	
	Western Expressway FL 429	E-Pass	Pay by Plate	
	Beachline Expressway	E-Pass	Pay by Plate	
	Wekiva Parkway	SunPass	Toll-By-Plate	
Illinois	Tri-State Tollway	I-Pass, E-ZPass	Video Toll Rate	For the highlighted exit which is an all electronic tolling ramps, no cash accepted. Cash customers will incur an unpaid toll and are responsible for paying the cash fare indicated within 7 days of the event.
	147th Street I-57/1294	I-Pass, E-ZPass	Video Toll Rate	
	Balmoral Northbound	I-Pass, E-ZPass	Video Toll Rate	

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Ronald Reagan Tollway	I-Pass, E-ZPass	Video Toll Rate	For the highlighted exit which is an all electronic tolling ramps, no cash accepted. Cash customers will incur an unpaid toll and are responsible for paying the cash fare indicated within 7 days of the event.
	Eola Road	I-Pass, E-ZPass	Video Toll Rate	
	Jane Addams Tollway	I-Pass, E-ZPass	Video Toll Rate	
	Irene Road	I-Pass, E-ZPass	Video Toll Rate	
	IL 47 EB ent WB exit	I-Pass, E-ZPass	Video Toll Rate	
	IL 47 EB ent WB exit	I-Pass, E-ZPass	Video Toll Rate	
Maryland	Intercounty Connector MD	E-ZPass	Video Toll Rate	Toll facility customers who do not have an E-ZPass and travel the ICC will be sent a bill in the mail and charged the Video Toll Rate (VRT). VRTs at all Maryland toll facilities are 150% of the base toll rates with a minimum of $1 and a maximum of $15 above the base toll rate.
Massachusetts	Tobin Memorial Bridge	E-ZPass	Pay-By-Plate	A photo of the license plate is taken and the registered owner of the vehicle receives a PAY BY PLATE MA invoice in the mail. Commercial customers will also see a 50 cent surcharge per toll. A convenience fee of $2.95 per PAY BY PLATE MA invoice payment will be charged for cash payments.

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
New York	Henry Hudson Bridge	E-ZPass	Tolls By Mail	A photograph is taken of the license plate and the registered owner of the vehicle will receive a bill in the mail.
	Tappan Zee Bridge	E-ZPass	Tolls By Mail	Starting April 1, 2016
North Carolina	Triangle Expressway	NC Quick Pass	Bill By Mail	
Ontario	407 ETR	407 ETR Transponder	Video Toll Charge	
Quebec	A 25 Bridge	A25 Transponder	Video Toll Charge	
Texas	183A	EZ Tag, TxTag, TollTag	Pay By Mail	
	Central Texas Tollways Loop 1	EZ Tag, TxTag, TollTag	Pay By Mail	
	Central Texas Tollways SH 130	EZ Tag, TxTag, TollTag	Pay By Mail	
	Central Texas Tollways SH 45	EZ Tag, TxTag, TollTag	Pay By Mail	
	Loop 49	TxTag, TollTag, EZ TAG	Pay By Mail	
	Manor Expressway	EZ Tag, TxTag, TollTag	Pay By Mail	
	Addison Airport Tunnel	TollTag, TxTag	ZipCash	
	Dallas North Tollway	TollTag, TxTag	ZipCash	
	Lewisville Lake Toll Bridge	TollTag, TxTag	ZipCash	
	Mountain Creek Lake Toll Bridge	TollTag, TxTag	ZipCash	
	Sam Rayburn Tollway	TollTag, TxTag	ZipCash	
	President George Bush Turnpike	TollTag, TxTag	ZipCash	
	PGBT Western Extension SH 161	TollTag, TxTag	ZipCash	

State	Toll Road/Exits	Discount Program	Video Toll/Cash	Comments
	Chisholm Trail Parkway	TollTag, TxTag	ZipCash	
	Tomball Tollway	EZ Tag, TxTag, TollTag	Video Toll	A photo of the license plate is taken and the registered owner of the vehicle receives a violation notice with a $11.00 fee added to the amount of the toll rate. This is a new toll road that opened on April 12, 2015.
	Texas SH 550	EZ Tag, TxTag, TollTag	Pay By Mail Rate	
	Texas State Highway 99	EZ Tag, TxTag, TollTag	Notice By Mail	
	Sam Houston Tollway			
	SH 249 Direct Connector	EZ Tag, TxTag, TollTag	Video Toll	
Virginia	Pocahontas Parkway	E-ZPass	E-ZPass, Visa or Mastercard	The two listed exits are no cash exits, The Mainline Plaza is also cashless overnight from 11 p.m to 5 a.m. Payment options are Visa/Mastercard Debit/Credit cards
	Laburnum Avenue	E-ZPass	E-ZPass, Visa or Mastercard	
	Airport Connector	E-ZPass	E-ZPass, Visa or Mastercard	
	South Norfolk Jordan Bridge	E-ZPass	Pay by Plate	
	Midtown Tunnel	E-ZPass	Pay by Plate	
	Downtown Tunnel	E-ZPass	Pay by Plate	
Washington	SR 520 Bridge	Good To Go	Pay By Mail	

| **Legend:** | A = alphabetic (A,B,C,…Z) |
| | N = numeric (0,1,2,...9) |

NOTE: The version of PC*MILER in which postal code coverage was started is noted for each country listed below. This refers to postal code coverage only, the country may have been available for routing without postal code access in previous versions.

North America
Canada
ANA NAN or ANANAN

Mexico, starting in Version 25.1
NNNNN

Puerto Rico, starting in Version 27.1
NNNNN

United States
NNNNN

South America
Brazil, starting in Version 24.1
NNNNN

Europe
United Kingdom
AANA N or AAN N or AANN N
or, starting in PCM24, AANAN or AANN or AANNN
or, starting in Version 25.1, AANA NAA or AANANAA or AAN NAA or AANNAA or AANN NAA or AANNNAA

France, Germany, Italy, Vatican City, Spain, and Finland
NNNNN

Russian Federation, starting in Version 22.1
NNNNNN

Romania, starting in Version 23.1
NNNNNN

Estonia and Croatia, starting in Version 22.1
NNNNN

Lithuania, starting in Version 23.1
NNNNN

Andorra, starting in Version 26.1
AANNN

Monaco, starting in Version 26.1
NNNNN

Ukraine and Turkey, starting in Version 24.1
NNNNN

Netherlands, Belgium, Luxemburg, Austria, Switzerland, Liechtenstein, Denmark, Norway and Hungary
NNNN

Latvia and Slovenia, starting in Version 22.1
NNNN

Bulgaria, starting in Version 23.1
NNNN

Iceland
NNN

Ireland (Dublin only)
NN (single digit postcodes N are not supported for input in PC*MILER)

Poland
NN-NNN
or, starting in Version 24.1: NNNNN

Portugal
NNNN
or, starting in Version 24.1: NNNN-NNN or NNNNNNN

San Marino, starting in Version 26.1
NNNNN

Sweden
NNN
or, starting in Version 22.1: NNN NN or NNNNN

Czech Republic and Slovakia
NNN NN or NNNNN

Greece, starting in Version 22.1
NNN NN or NNNNN

Africa
Lesotho, starting in Version 27.1
NNNN

South Africa, starting in Version 24.1
NNNN

Swaziland, starting in Version 27.1
ANNN

Asia
Japan, starting in Version 24.1
NNN-NNNN or NNNNNNN

India, starting in Version 24.1
NNNNNN

Indonesia, starting in Version 27.1
NNNNN

Malaysia, starting in Version 27.1
NNNNN

Taiwan, starting in Version 27.1
NNN

Thailand, starting in Version 27.1
NNNNN

Oceania
Australia, starting in Version 24.1
NNNN

New Zealand, starting in Version 27.1
NNNN

Federated States of Micronesia, Guam, Marshall Islands, Northern Mariana Islands, and Palau, starting in Version 27.1
NNNNN

Appendix J: Worldwide Data Coverage & Postal Code Access

PC*MILER Version 30* data highlights include extensive updates in over 180 countries and territories, with 8 countries and territories upgraded to High and Comprehensive coverage since the previous version. *Worldwide data is updated several months after the base version release each year.*

Highway and Street-Level Data Coverage by Region

Region	Number of Countries	Highway Distance (Miles)	Streets Distance[1] (Miles)	Number of Cities	Number of Postal Codes
Africa	58	439,511	4,460,338	157,407	9,130
Asia	32	1,047,834	5,614,942	984,462	1,014,694
Europe	58	1,895,973	10,508,441	756,048	1,089,622
Middle East	16	225,906	623,647	148,012	55,396
North America	7	1,031,430	7,998,520	268,311	1,049,223[2]
Oceania	23	157,606	838,042	22,027	24,889
South America	48	520,416	2,326,722	126,295	106,029
TOTAL	**242**	**5,318,676**	**32,370,652**	**2,462,562**	**3,348,983**

[1] Available with purchase of the PC*MILER/Streets add-on. Street-level coverage for each region is available only for select countries with coverage level Comprehensive and High. Street-level mileage includes highway miles.
[2] Includes Canadian Postal Codes available with purchase of data add-on

Countries With Significant Street-Level Coverage* – Version 30

Region	Countries
Africa	Botswana, Egypt, Kenya, Lesotho, Mayotte, Morocco, Mozambique, Namibia, Reunion, South Africa, Swaziland, Tunisia, Western Sahara, Zambia, Zimbabwe
Asia	Brunei, Hong Kong, India, Indonesia, Macau, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam
Europe	All countries except Armenia, Azerbaijan, Cyprus, Faroe Islands, Georgia, Kyrgyzstan, Svalbard, Tajikistan, Turkmenistan, and Uzbekistan
Middle East	Bahrain, Cyprus, Israel & the West Bank, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, UAE
North America	Canada, Puerto Rico, United States
Oceania	Australia, New Zealand
South America	Argentina, Bahamas, Brazil, Cayman Islands, Chile, Colombia, Costa Rica, Falkland Islands, French Guiana, Guadeloupe, Martinique, Panama, Paraguay, Peru, Saint Barthelemy, Uruguay, Venezuela

* Includes High and Comprehensive coverage (see next page), data for some countries does not include truck attributes.

NOTE: When calculating routes using Streets data sets in regions outside North America, note that routes cannot be run within or across countries not included in the selected data set. The Worldwide Highway data set must be used to run routes to/from countries that are not covered in the Streets data set.

PC*MILER|Worldwide 30 Data Coverage - Overview

The map and table below shows a high level overview of the map data coverage offered in PC*MILER|Worldwide 30. For more information, please contact ALK at pcmsupport@alk.com.

PC*MILER|Worldwide 30 Map Data Coverage
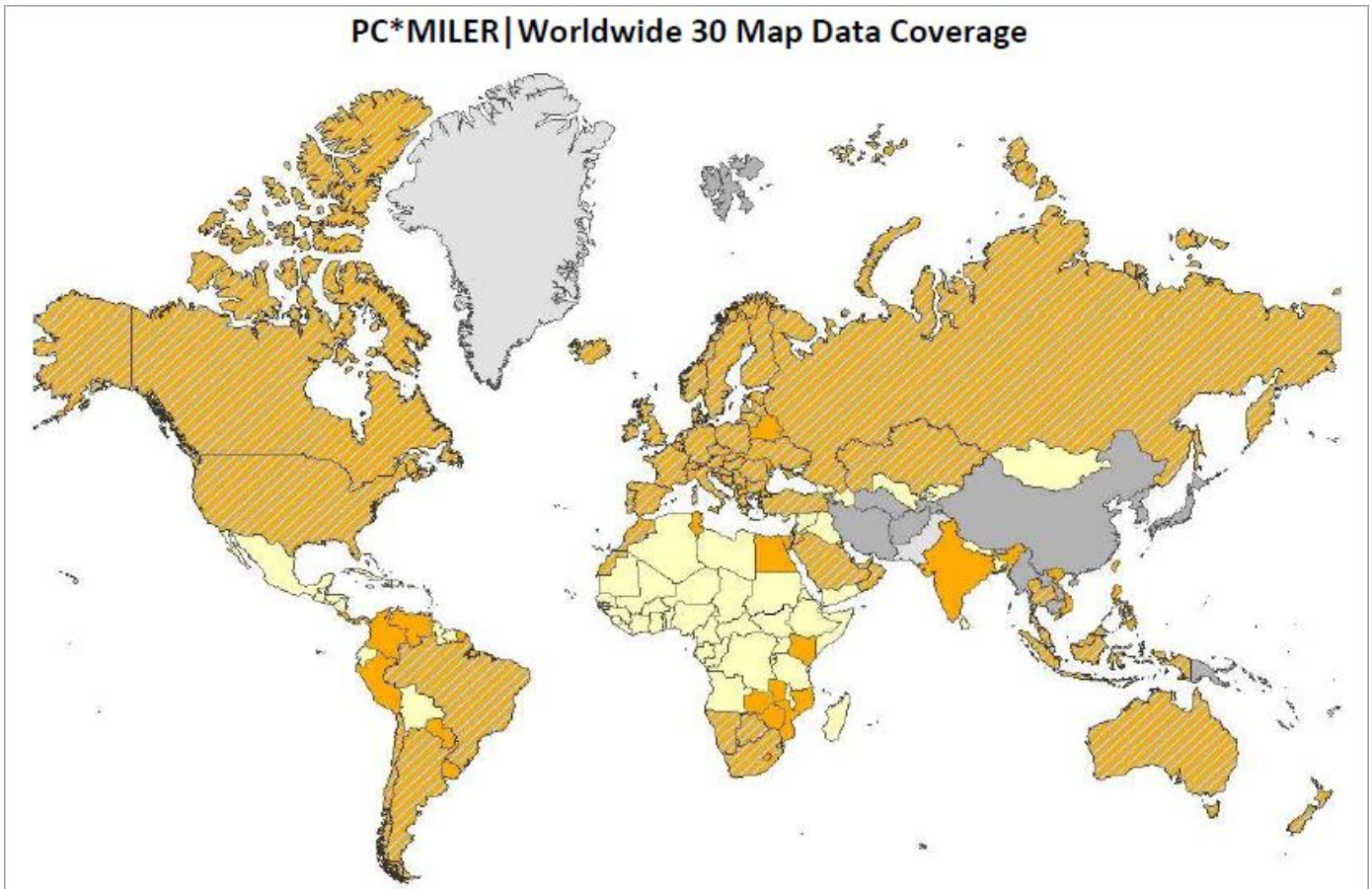
Coverage Level*	Road Coverage	Locations	Truck-Specific Attributes
Comprehensive	Comprehensive Street Level	Cities, postal codes, addresses	Yes
High	Comprehensive Street Level	Cities, postal codes, addresses	No
Intermediate	Complete Highway + Street Level	Cities, some postal codes, some addresses	No
Entry	Basic Highway + Some Streets	Cities, some postal codes	No
Basic	City to City Road Network	Cities	No

* Coverage levels are assigned based on road coverage. Postal code attributes generally correspond to the level of road coverage, with some exceptions

The categories in PC*MILER's Weather Alerts Display dialog and Alerts map legend include the weather alert types listed below. All weather alerts data is provided by the U.S. National Weather Service/National Oceanic and Atmospheric Administration and Environment Canada.

Winter/Snow Alerts

- Avalanche Advisory
- Avalanche Warning
- Avalanche Watch
- Blizzard Warning
- Blizzard Watch
- Extreme Cold Warning
- Extreme Cold Watch
- Freeze Warning
- Freeze Watch
- Freezing Fog Advisory
- Freezing Rain Advisory
- Freezing Spray Advisory
- Frost Advisory
- Hard Freeze Warning
- Heavy Freezing Spray Warning
- Heavy Freezing Spray Watch
- Ice Storm Warning
- Lake Effect Snow Advisory
- Lake Effect Snow Warning
- Lake Effect Snow Watch
- Wind Chill Advisory
- Wind Chill Warning
- Wind Chill Watch
- Winter Storm Warning
- Winter Storm Watch
- Winter Weather Advisory

Storm Alerts

- Evacuation – Immediate
- Extreme Wind Warning
- Gale Warning
- Gale Watch
- Hazardous Weather Outlook
- High Wind Warning
- High Wind Watch
- Hurricane Force Wind Warning

- Hurricane Force Wind Watch
- Hurricane Local Statement
- Hurricane Warning
- Hurricane Watch
- Lake Wind Advisory
- Severe Thunderstorm Warning
- Severe Thunderstorm Watch
- Severe Weather Statement
- Shelter In Place Warning
- Short Term Forecast
- Special Weather Statement
- Storm Warning
- Storm Watch
- Tornado Warning
- Tornado Watch
- Tropical Depression Local Statement
- Tropical Storm Local Statement
- Tropical Storm Warning
- Tropical Storm Watch
- Typhoon Local Statement
- Typhoon Warning
- Typhoon Watch
- Volcano Warning
- Wind Advisory

Heat Alerts

- Excessive Heat Warning
- Extreme Fire Danger
- Heat Advisory

Hazmat Alerts

- Hazardous Materials Warning
- Nuclear Power Plant Warning
- Radiological Hazard Warning

Flood/Water Alerts

- Arroyo and Small Stream Flood Advisory
- Beach Hazards Statement
- Coastal Flood Advisory
- Coastal Flood Statement
- Coastal Flood Warning
- Coastal Flood Watch
- Flash Flood Statement
- Flash Flood Warning
- Flash Flood Watch
- Flood Advisory

- Flood Statement
- Flood Warning
- Flood Watch
- Hazardous Seas Warning
- Hazardous Seas Watch
- High Surf Advisory
- High Surf Warning
- Hydrologic Advisory
- Hydrologic Outlook
- Lakeshore Flood Advisory
- Lakeshore Flood Statement
- Lakeshore Flood Warning
- Lakeshore Flood Watch
- Low Water Advisory
- Marine Weather Statement
- Rip Current Statement
- Small Craft Advisory
- Small Craft Advisory For Hazardous Seas
- Small Craft Advisory For Rough Bar
- Small Craft Advisory For Winds
- Small Stream Flood Advisory
- Special Marine Warning
- Tsunami Advisory
- Tsunami Warning
- Tsunami Watch
- Urban and Small Stream Flood Advisory

Fire Alerts

- Fire Warning
- Fire Weather Watch

Earthquake Alerts

- Earthquake Warning

Civil Alerts

- 911 Telephone Outage
- Administrative Message
- Child Abduction Emergency
- Civil Danger Warning
- Civil Emergency Message
- Law Enforcement Warning
- Local Area Emergency
- Test

Air Quality Alerts

- Air Quality Alert
- Air Stagnation Advisory
- Ashfall Advisory
- Ashfall Warning
- Blowing Dust Advisory
- Brisk Wind Advisory
- Dense Fog Advisory
- Dense Smoke Advisory
- Dust Storm Warning
- Red Flag Warning

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