Version Release Notes

PC*MILER® 29

Technology Beyond Miles

alk
A TRIMBLE COMPANY

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Section 1 New Features & Enhancements

Described on the following pages are the new features and enhancements included in Version 29 of:

- PC*MILER Windows Interactive
- PC*MILER|Connect
- PC*MILER|Mapping
- PC*MILER|Spreadsheets
- PC*MILER|BatchPro
- PC*MILER|TCP/IP

PC*MILER INTERACTIVE

SUMMARY:

- **NEW!** HOS Manager provides built-in Hours of Service compliance for route planning.
- **NEW!** Ability to search for Points of Interest (POIs) along a route from the route window.
- **NEW!** Ability to search along a route for fuel stops and current fuel prices.
- **NEW!** Elevation Discouraged Routing – set a custom threshold to limit the elevation of roads on a route.
- **NEW!** Ferry Discouraged Routing to avoid ferry distances except where no alternate route exists.
- **NEW!** Energy Land Survey Addresses are now available for PC*MILER|Energy users.
- **NEW!** Ability to set a global road speed for Energy roads.
- **NEW!** ALK Cloud Services for sharing and automatic backup of customized data over a network.
- **NEW!** Map display of temporary road closures.
- **NEW!** Addition of two more zoom levels to the RouteMap.
- **NEW!** Installation of PC*MILER on Windows 10 systems is now supported.
- **NEW!** Addition of the U.S. Virgin Islands to the North American database.
- **ENHANCED!** **(PLEASE TAKE NOTE)** New routes now default to "Streets" mode when PC*MILER|Streets, PC*MILER|Energy or RouteSync is installed.
- **ENHANCED!** Via Points Manager has been revamped to be more user-friendly.
- **ENHANCED!** Geofence Manager includes a map for creating/editing geofences in the Manager window.
- **ENHANCED!** Updated hazardous material routing with implementation of new NHMRR routes.
- **ENHANCED!** The "General" hazardous material route type has been renamed "Other".
- **ENHANCED!** Improved organization of information in the Application Settings dialog.
- **ENHANCED!** PC*MILER|Tolls discount program update.
- **ENHANCED!** Annual updates of defaults for US$/CAD$ conversion rate and trip costs.
- **ENHANCED!** Yearly database enhancements and routing improvements in North America, including U.S. ZIP Code and SPLC updates.

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FEATURE DETAILS:

NEW! HOS Manager.

NOTE: PC*MILER|Streets must be licensed and installed to use the HOS Manager. 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.

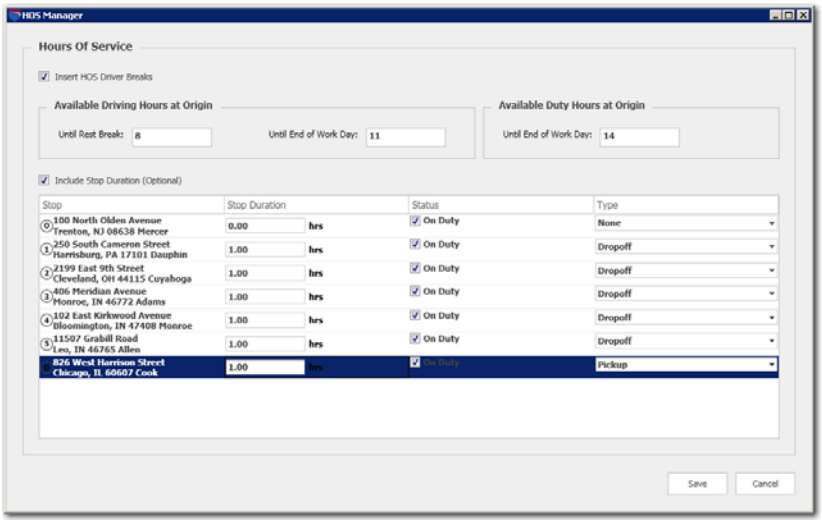
The HOS Manager provides users with the option to incorporate the requirements of the Federal Hours of Service (HOS) regulations into route calculations. Users can enter the driver's available remaining hours of service and, optionally, expected stop times at each stop along a route. When the route is generated, the Manager then inserts rest stops along the route at time intervals that meet the HOS requirements. Users also have the option to enter stop times without enabling HOS breaks (this functionality replaces the Route Options dialog > **Stops** tab in previous versions).

The rest stop locations that PC*MILER selects can be customized as needed. When you choose to edit a 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 logic avoids a possible violation of HOS regulations, due to traffic or other unforeseen conditions, if the driver were to continue moving forward on the route past the time when a rest stop is due.

Federal Hours of Service regulations are summarized on the following web page:
https://cms.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations
Also see the Addendum, *Overview of HOS Functionality in PC*MILER 29,* at the end of these Version Release Notes.

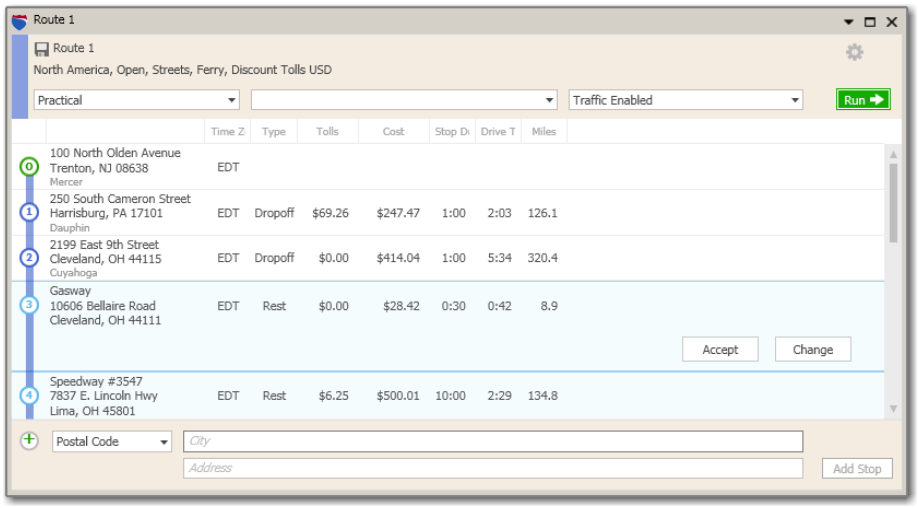
To use the new HOS Manager, follow these steps:

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 the route options are changed, you will need to enter all your HOS options again and re-run the route.)
2. Select the Routes tab > Route group > *HOS Manager.*



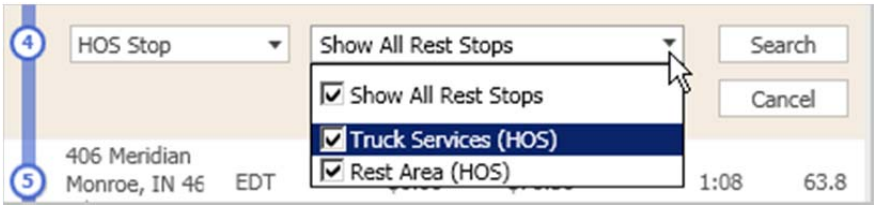
HOS Manager

3. In the HOS Manager, check **Insert HOS Driver Breaks**.
4. Enter the driver's **driving hours remaining** 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**.
5. Enter the driver's **duty hours remaining** until he/she needs to take a 10-hour end-of-work-day break under **Available Duty Hours at Origin**.
6. (Optional) To enter stop information, check **Include Stop Duration** and then enter one or more of the settings to the right: a number of hours next to the stop (**Stop Duration**) in hh.hh format (e.g. "1.25" would equal 1 hour and 15 minutes); whether the duration of the stop is on duty time (**Status**); and the stop **Type** (**Pickup**, **Dropoff**, **RestStop** or **FuelStop**). 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 Drivers 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.)
7. Click **Save** to save your entries and begin HOS route calculations.
8. In the route window after processing is finished, you'll see the rest stops that PC*MILER inserted into the trip. All stops will be numbered in order, with the rest stops numbered in a different color than the stops you entered manually.



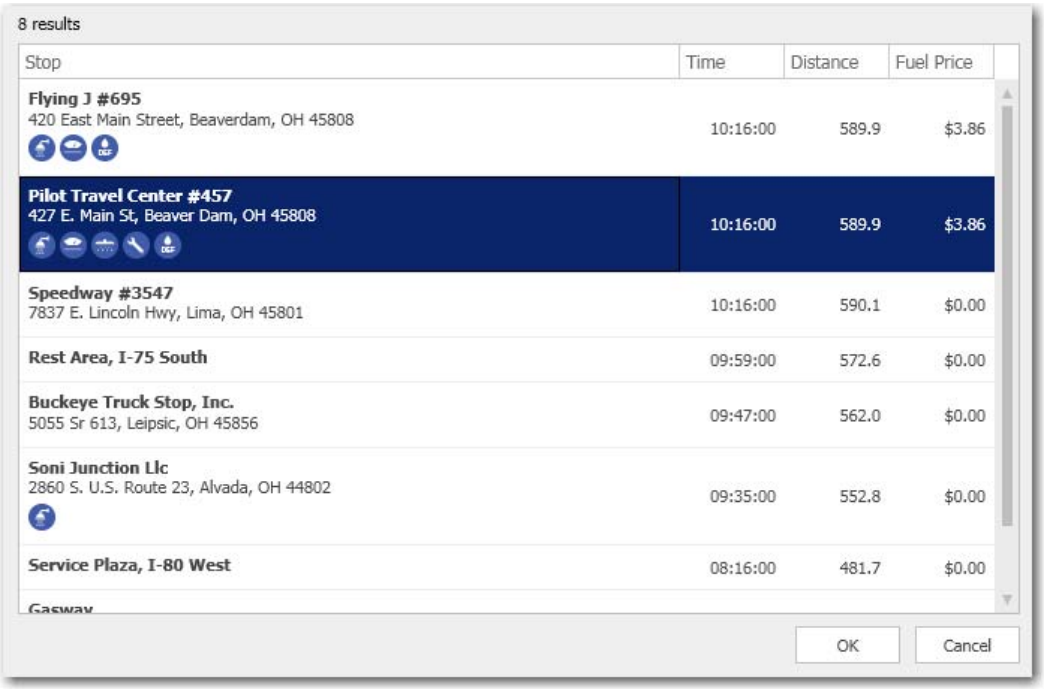
Route with HOS Rest Stops Inserted

9. Now you have the option to either **Accept** each inserted stop, or **Change** it to an alternate rest stop. If you accept all the inserted stops, the route does not need to be rerun.
10. Click **Change** next to any 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 choose to search for **Fuel Stops**, **HOS Stops**, or **Places of Interest**. The options in the drop-down on the right will reflect the stop type and enable you to narrow the search further.



11. Click **Search** to generate a pick list of alternate POIs along this route segment. The pick list will include columns that show amenities where available, the time and distance from the origin of the trip, and fuel price where price data is available. (Fuel prices require an internet connection. If a fuel price is listed as $0.00, it is because the current price data is not available.)

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



Pick List of Alternate Rest Stops

12. In addition to the pick list, all the rest stops found along the route segment will be visible on the RouteMap. (Note that when rest stops are displayed after a search, all other POIs will be temporarily hidden.) To zoom to any rest stop on the map, just highlight it on the pick list.

Zoomed View of an Alternate Stop

13. To choose an alternate from the list, select it and click **OK**. If you click **Cancel**, you will be returned to the route window to perform another search. An alternate rest stop must be selected, or you must open the HOS Manager and uncheck **Insert HOS Driver Breaks** to delete all HOS stops.
14. After editing an HOS stop, the new stop will be accepted and the trip will re-run automatically.

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 before 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 changing an HOS rest stop, all POIs other than rest stops found by your search 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. There must be at least one stop in the U.S.
- If you delete a recommended HOS stop, PC*MILER will rerun the route and insert new stop recommendations.
- 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.

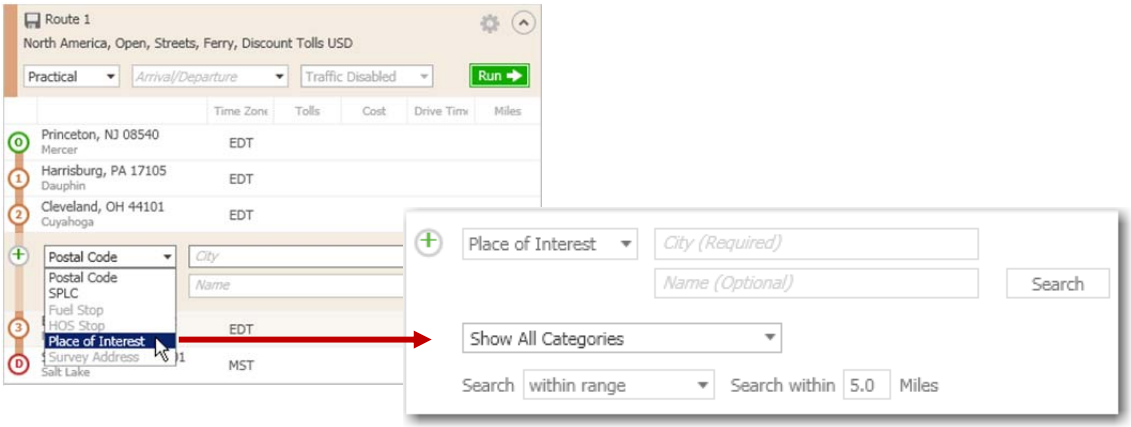
NEW! Ability to Search for Points of Interest (POIs) Along a Route.

This new feature enables users to search for POIs from within a route window. The area covered by the search can be a user-specified radius around a location or a corridor along a route; and optionally, the search can target user-specified POI categories and can include a key word.

Searching Within a Radius Around a Location

To search for POIs within a user-specified radius of a location, follow the steps below. To search along a route, skip to page 7.

1. In a route window, select Place of Interest from the stop type drop-down. You can do this either before or after stops have been entered. To insert a POI above an existing stop, right-click that stop and choose *Insert Stop Above*, then select **Place of Interest** from the stop type drop-down.



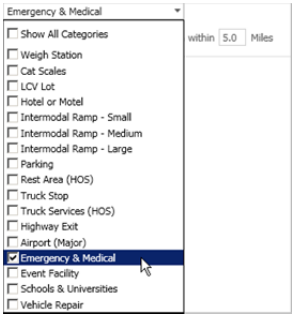
Beginning a POI Search in the Route Window

2. In the *City* field, if no stops have been entered you must specify a location around which to search. If one or more stops have been entered and you don't specify a location, PC*MILER will search around the previous stop.

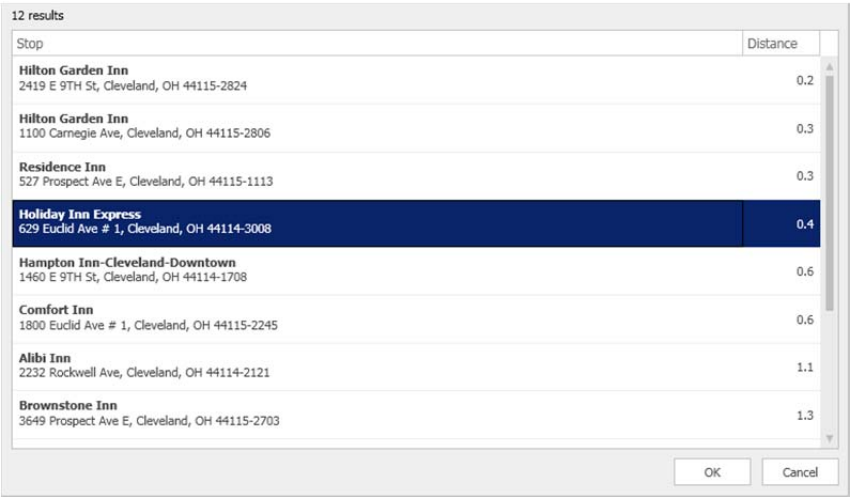
3. (Optional) To narrow the search, you can enter a word or name to search for in the *Name* field. For example, you could enter "inn" and all POIs with a name that includes "inn" will be found.

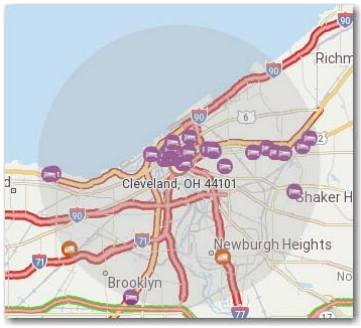
4. In the **Search within** field, enter a number of **Miles** to specify a radius. The default here is 5.0 miles.

5. (Optional) In the categories drop-down, uncheck the POI categories that you don't want to include in the search. To clear the list of check marks, you can uncheck **Show All Categories** and then check the ones you want.



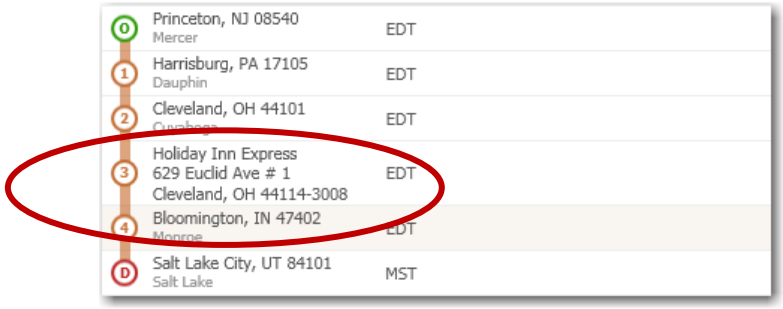
6. Click **Search**. A pick list of POIs will be created and displayed on the map.





7. To zoom to any POI on the map, just highlight it on the pick list. Click **OK** to enter the selected POI as a stop.

8. The POI you select will be entered as a stop. It can be edited, deleted or moved like any other stop on the trip.

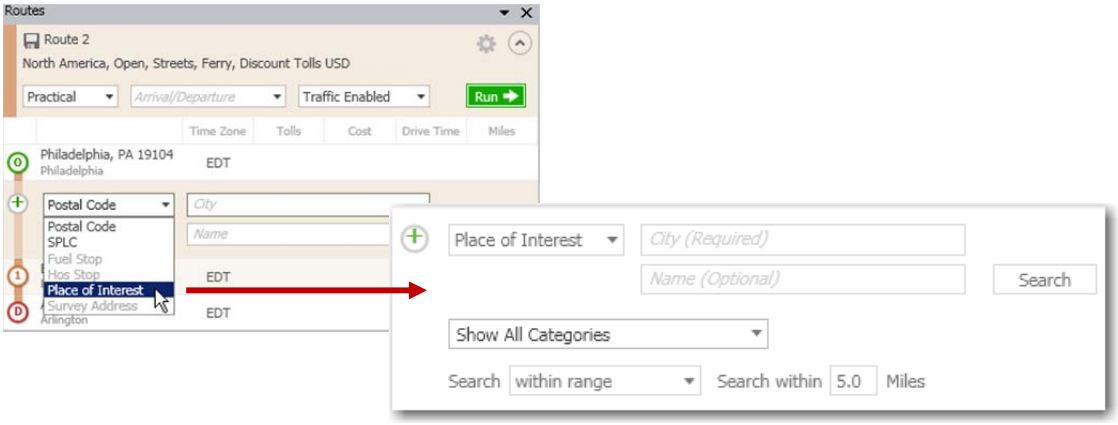


POI Found and Added to the Stop List

Searching for POIs Along a Route

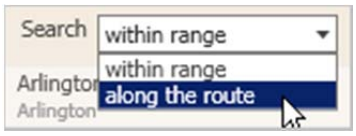
To search for POIs along a route, the steps are similar to the above but with a few modifications. A route must be generated before the search.

1. First enter and run a route.
2. Right-click a stop on the route and choose *Insert Stop Above.* The stop type drop-down will be inserted above the stop.
3. Select **Place of Interest** from the stop type drop-down.

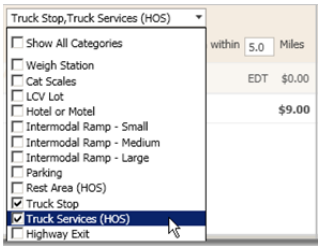


Beginning a POI Search in the Route Window

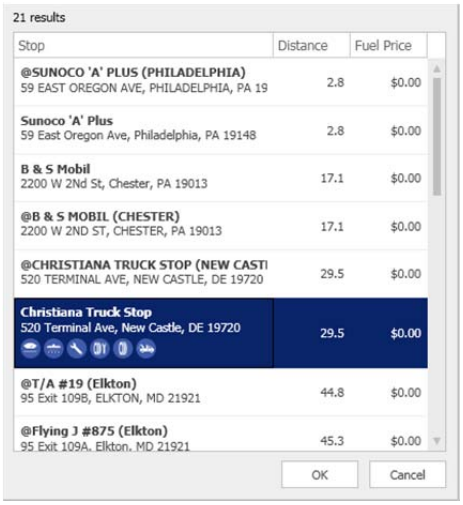
4. Select **along the route** from the **Search** drop-down. This specifies a corridor between the previous and next stops on the list.

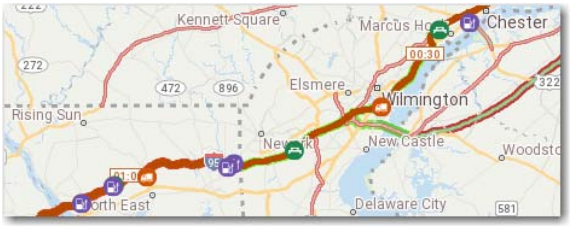


5. (Optional) In the categories drop-down, uncheck the POI categories that you don't want to include in the search. To clear the list of check marks, you can uncheck **Show All Categories.**



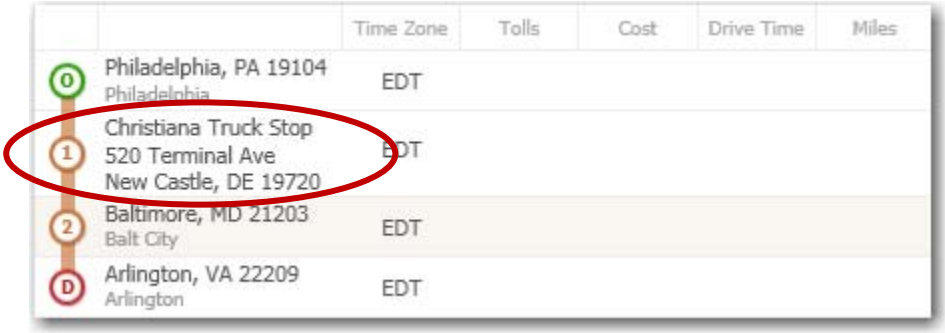
6. Click **Search** to create a pick list of POIs and to see them along the route on the map.





7. To see any POI on the map, just highlight it on the pick list. To enter a POI from the pick list as a stop, select it and click **OK** or simply double-click it (click **Cancel** to close the list without making a selection).

8. The POI you select as a stop can be edited, deleted or moved within the route window like any other stop on the trip.



POI Found and Added to the Stop List

NEW! Elevation Discouraged Routing.

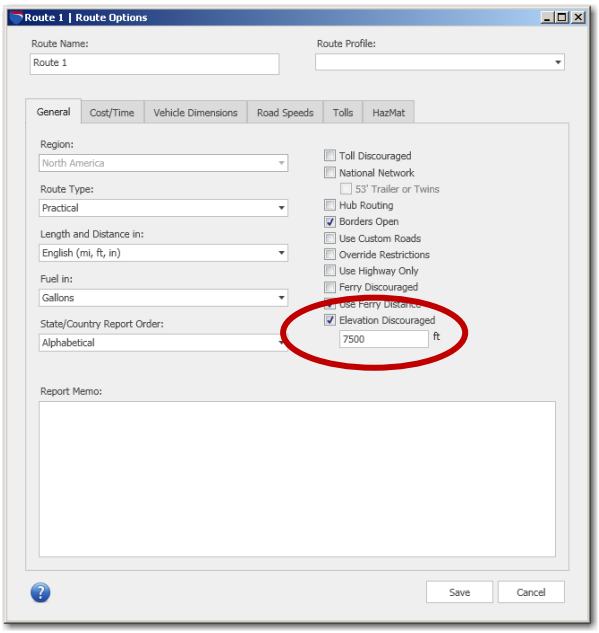
*(PC*MILER|Streets must be licensed and installed.)* This new option enables users to set a customized limit on the elevation of the roads a route will use. Elevations at or above this height will be avoided unless 1) it is extremely impractical to do so; or 2) a stop or destination on the route is located at the higher elevation. The source of ALK's elevation data is the National Elevation Data produced by the U.S. Geological Survey.

To activate Elevation Discouraged routing, select the Routes tab > Route group > *Options.* In the **General** tab, check **Elevation Discouraged**, and enter the elevation in feet that will cause PC*MILER to calculate an alternate route unless it's too impractical. The default value is 7500 feet. Click **Save** to save this option and exit the dialog. Warnings are not provided if the threshold is crossed.

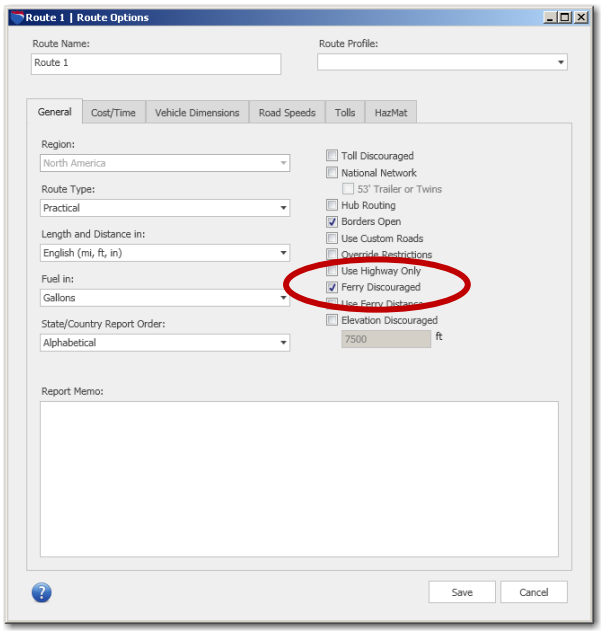
NEW! Ferry Discouraged Routing.

The new Ferry Discouraged routing will avoid ferries if possible, i.e. unless it would be extremely impractical to do so. By contrast, the Use Ferry Distance option controls whether ferry distances contribute to the mileage and cost calculations for a route but does not affect the actual route that is generated.

To select this option, go to the Routes tab > Route group > *Options* and check **Ferry Discouraged** in the **General** tab. Click **Save** to save this option and exit the dialog. No warnings are issued if a route must use a ferry because it is required to get to the origin/stop/destination or unless an extreme detour would need to be taken .



Elevation Discouraged Route Option



Ferry Discouraged Route Option

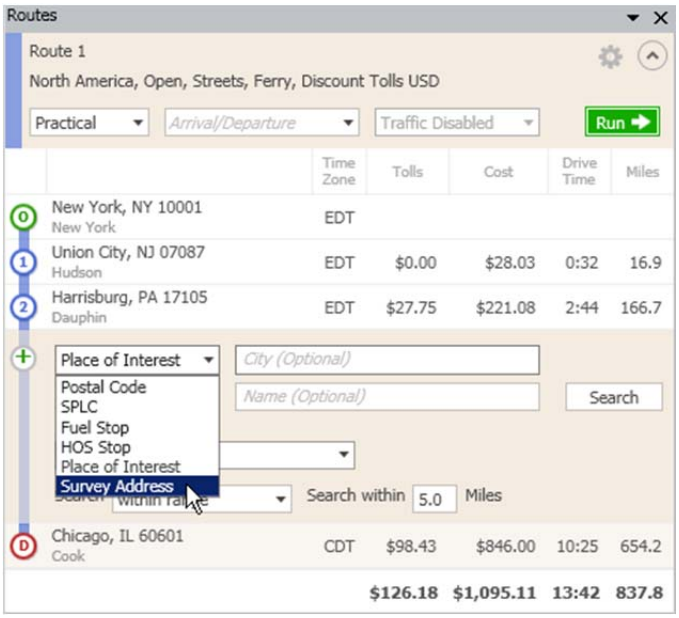
NEW! Addition of Energy Land Survey Addresses.

(Not available in the Beta Release) If PC*MILER|Energy and PC*MILER|Streets are licensed and installed, the database of energy-related roads in Version 29 will include Land Survey addresses as points of interest (POIs).* As POIs, Land Survey addresses will be searchable with an exact character match, e.g. "**SW NW S27 T010N R020W, OH**".

Within the rapidly shifting landscape of oil and energy producing properties in the U.S. and Canada, Land Survey POIs will 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.

This new feature gives users access to land surveys in the Public Land Survey System (PLSS) and the Dominion Land Survey (DLS) including Land Survey Grids (LSDs). Like other POIs, a land survey location can be added as a stop on a route, saved as a custom place, or displayed on the map.

** Oil and Gas field content provided by GeoTrac Systems Inc. ©Copyright 2015. All rights reserved.*



Land Survey Address Search

NEW! Ability to Set a Global Road Speed for Energy Roads.

If PC*MILER|Energy and PC*MILER|Streets are licensed and installed, a new category – Energy Roads – will be included in the **Road Speeds** tab of the Route Options and Default Route Options dialogs. In PC*MILER 29, PC*MILER|Energy users will be able to set their own estimated average road speed for all energy roads. Road speeds affect the estimated travel times that PC*MILER calculates for each route.

NEW! ALK Cloud Services For Sharing Customized Data Over a Network.

ALK Cloud Services is now available for users who are interested in sharing data. *(An active internet connection is required.)* Currently, ALK Cloud Services enables sharing of custom place data generated by users of the PC*MILER graphical user interface. It also enables RouteSync users to dispatch routes and trip options to drivers equipped with ALK's CoPilot Truck navigation software on mobile devices in the cab. 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.

To create an ALK Cloud Account:

1. In PC*MILER, select the ALK Cloud tab > ALK Cloud group > *User Login.*
2. In the **ALK Cloud Login** dialog, click the secure link to the right.
3. On the web page that opens, click **Sign Up**.
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** tab in PC*MILER.

Login, Settings and Options:

1. To login to your new account from PC*MILER, select *User Login* on the ALK Cloud ribbon in PC*MILER.
2. 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.
3. If the login was successful, you'll see the icon on the ALK Cloud tab turn green:

4. After login, select *Manage Account* from the ALK Cloud ribbon 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. You can also send the unique short code for the account to other users including CoPilot Truck-equipped drivers, inviting them to join the account and receive PC*MILER routes via RouteSync in the cab.

For detailed instructions on using ALK Cloud Services and RouteSync, please see the PC*MILER *User's Guide.*

NEW! Addition of the U.S. Virgin Islands to the North American Database.

The U.S. Virgin Islands were added to the North American database (includes St. Croix, St. John and St. Thomas).

NEW! Map Display of Temporary Road Closures.

Road segments that have a temporary road closure are now marked with a dashed red bar on the RouteMap. To display the Road Legend, select the Map tab > Customize group > *Legends > Roads.*

Road Closure on the Pulaski Skyway in New Jersey

NEW! Addition of Two More Zoom Levels to the RouteMap.

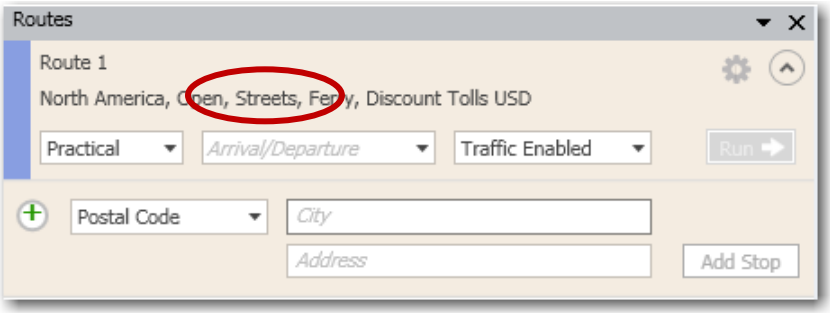
The PC*MILER RouteMap now has two additional zoom levels – 19 and 20 – for even tighter closeup viewing of locations on the map. Here is West 23rd Street in New York City, at zoom level 20:

NEW! Windows 10 Installations Now Supported.

PC*MILER can now be installed on Windows 10 systems – see *System Requirements* at the end of these Version Release Notes.

ENHANCED! (PLEASE TAKE NOTE) New Routes Default to "Streets" Mode When PC*MILER|Streets, PC*MILER|Energy or RouteSync Is Installed.

In previous versions of PC*MILER, every new route defaulted to Highway Only mode (*Use Highway Only* was checked in the Route Options dialog). In Version 29, new routes now default to "Streets" mode if PC*MILER|Energy, PC*MILER|Streets or RouteSync is installed, based on the assumption that local street routing will be used. Default options can be changed in the Default Route Options dialog (Routes tab > General group > *Defaults*).

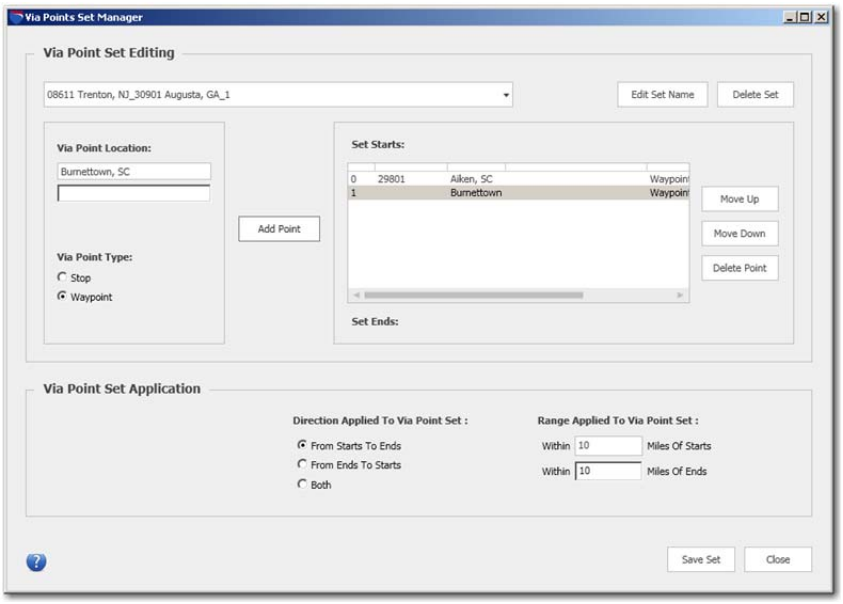


*New Route Window With PC*MILER|Streets Installed*

ENHANCED! Revamped Via Points Set Manager.

The Via Points Set Manager dialog has been revamped to be more user-friendly, keeping the same functionality as in previous versions. Via points are used to guide a route along user-preferred roads. One or more via points between two stops can be created and then saved for future use. Follow the steps below to create a set of via points using the new Manager.

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 > Route group > *Create Via Point Set* to open the Via Points Set Manager.



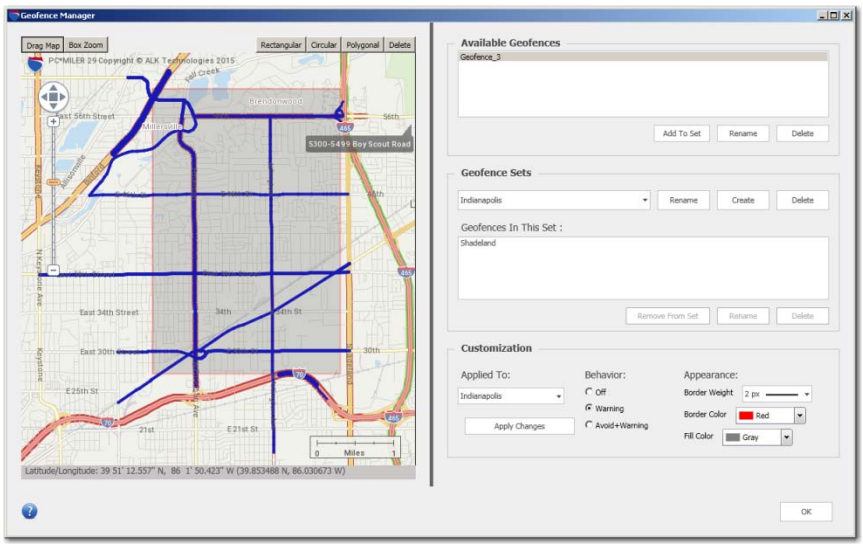
Via Points Set Manager

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**. Waypoints are treated like stops (routes travel through the centroid of a town or city) but are shown with a flag of a different color on the map. Additionally, when using RouteSync and CoPilot, the navigation system will tell you to stop at a stop or to drive by a waypoint.
6. Press **<Enter>** or click **Add Point** to add the location you entered to the list on the right. The list displays all points in the new via point set.
7. Under **Direction Applied To Via Point Set**, select whether the new set will be applied only when the route travels **From Starts To Ends** (referring to the order of points on the set list), **From Ends To Starts**, or in **Both** directions.
8. Under **Range Applied To Via Point Set**, enter a new radial value or keep the default value (10 miles). This setting defines a radius around the origin and destination (from the city center or postal code center) of the trip leg to which the set will be applied. The set you are creating will be an option for all future routes run between any location within the origin radius and any location within the destination radius.

9. Steps 4-8 can be repeated to add any number of additional via points to the set.
10. When finished adding points to this set, click **Save Set** to save the new via points, then click **Close** to close the Manager.
11. In the route window, you will see a line inserted into the stop list under the origin of the O/D pair used 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 the button and the via points won't be used. From now on, unless the via point set is deleted, entering this same O/D pair will trigger the via option.
12. To edit a set, select Routes tab > Utilities group > *Manage Via Point Sets.* After making changes, be sure to click **Save** before closing the Manager. 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 box.
    - 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 – select a point on the list and click **Move Up** or **Move Down**.

ENHANCED! The Revamped Geofence Manager Now Includes a Map.

A simplified Geofence Manager now includes a map for creating and editing geofences from within the Manager window.



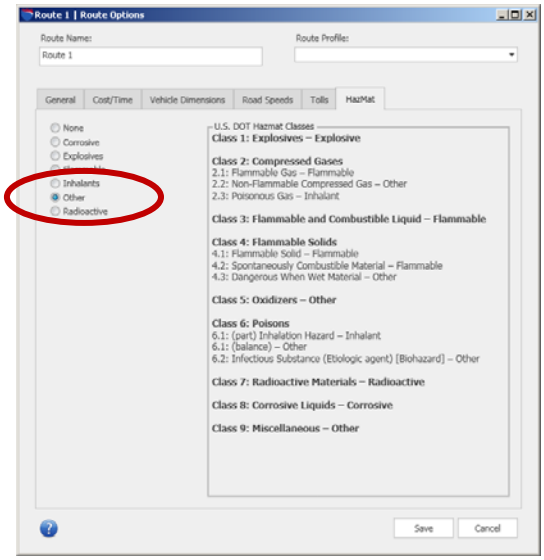
Geofence Manager

ENHANCED! Implementation of New NHMRR Routes for Hazmat Routing.

*(PC*MILER|HazMat add-on data must be licensed and installed)* ALK's hazardous material routing database has been updated with designations and restrictions published on July 14, 2014 by the National Hazardous Material Route Registry (NHMRR).

ENHANCED! The “General” Hazmat Route Type Has Been Renamed “Other”.

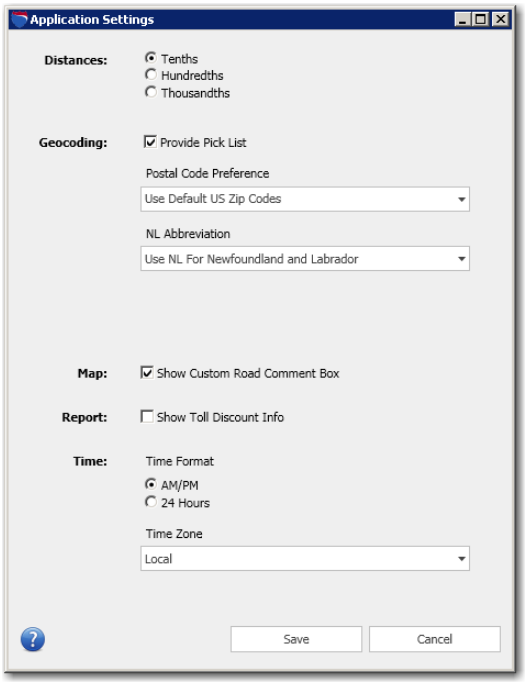
*(PC*MILER|HazMat add-on data must be licensed and installed)* For those who use PC*MILER for hazardous material routing, the General route type has been renamed “Other”. The new name more accurately reflects the variety of hazardous materials that are suitable for this route type, especially for our customers in Europe. To access the Route Options dialog, either click the gear button in a route window ( ) and select *Options*, or select the Routes tab > Route group > *Options*.



Renamed Hazmat Route Type in the Route Options Dialog

ENHANCED! Improved Organization of Information in the Application Settings Dialog.

The options in the Application Settings dialog have been reorganized into a more intuitive layout, as shown below.

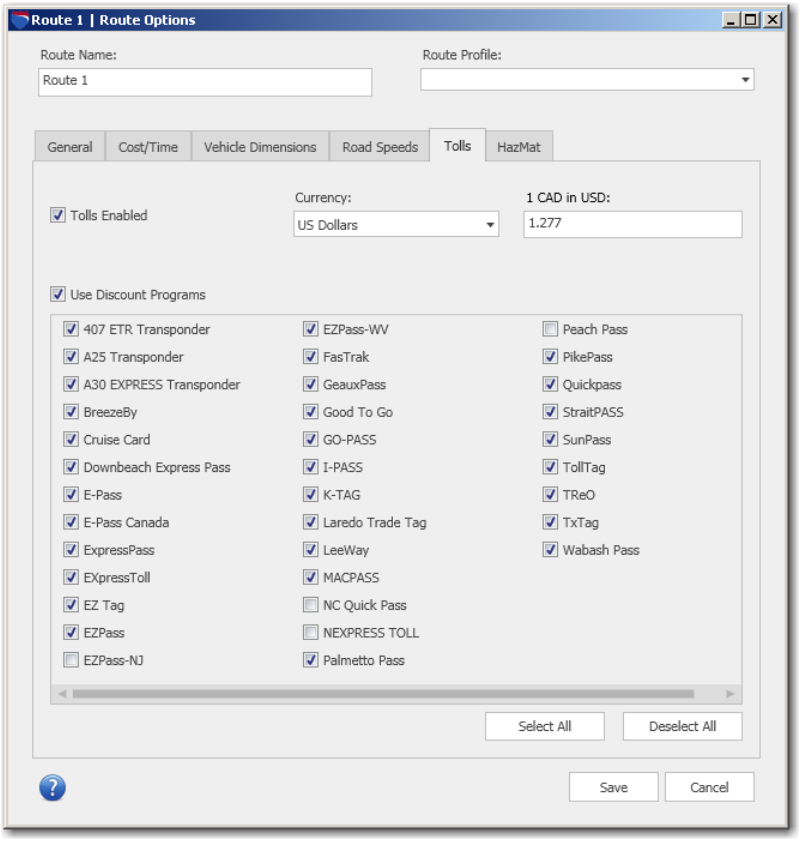


Application Settings Dialog in Version 29 (Worldwide options not displayed)

ENHANCED! PC*MILER|Tolls Discount Program Update.

*(PC*MILER|Tolls must be licensed and installed.)* As shown in the table below, three toll discount programs have been removed in Version 29. No new discount programs were added. To access the Route Options dialog, either click the gear button in a route window ( ) and select *Options*, or select the Routes tab > Route group > *Options*.

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



Toll Discount Programs in the Route Options Dialog, Tolls Tab

ENHANCED! Annual Updates of Defaults for US$/CAD$ Conversion Rate and Trip Costs.

In Version 29, the default U.S. dollar/Canadian dollar conversion rate (see the **Tolls** tab in the Route Options dialog box*) and the default fuel/trip costs (see the **Cost/Time** tab in the Route Options dialog box) are as follows:

Cost/Time Parameter	*Version 29*	*Version 28*
US$/Canadian$ Conversion Rate (note 1)	$1.00/$1.277	$1.00/$1.051
Fuel Cost Per Gallon (note 2)	$2.78	$3.95
Fuel Cost Per Liter	$.73	$1.04
Fuel Cost Per Mile (Loaded or Empty)	$.43	$.61
Fuel Cost Per Kilometer (Loaded or Empty)	$.43	$.61
Other Cost Per Mile (Loaded or Empty)	$.19	$.18
Other Cost Per Kilometer (Loaded or Empty)	$.12	$.11
Labor Cost Per Hour (Loaded or Empty)	$32.89	$31.64
Greenhouse Gas Estimates (note 3)	22.2	22.2
MPG – Loaded and Empty (note 4)	6.48	6.48

Reference Notes:
(1) As of 3.31.2015, from:
http://www.fiscal.treasury.gov/fsreports/rpt/treasRptRateExch/treasRptRateExch_home.htm
(2) *Transport Topics* 4/13/2015, p. 30
(3) Emission Facts, U.S. Environmental Protection Agency publication EPA420-F-05-003, February 2005, p. 2
(4) 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.
* *PC*MILER|Tolls license is required.*

ENHANCED! Routing Improvements in North America.

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. We have added many routing enhancements to improve PC*MILER's truck-specific database, mileage calculations and driving directions. (Please note that the routing and map data for this Beta Release has not been finalized and may change before the final version release.)

This version release integrates the following routing improvements:

- Addition of newly constructed roads and interchanges
- Addition of U.S. Virgin Islands to the North American database (includes St. Croix, St. John and St. Thomas)
- Realignment of the existing road network to GPS standards
- Update and addition of exit interchanges and alignment of ramp structures
- 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
- Update of street-level address changes
- 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)
- Updated address and road access to intermodal facilities

PC*MILER|CONNECT

SUMMARY:

- **NEW!** Two Road Speed APIs to set and get road speeds for PC*MILER road types.
- **NEW!** Two APIs that activate and set an elevation threshold for Elevation Discouraged routing.
- **NEW!** One API that enables Ferry Discouraged routing.
- **NEW!** *(PC*MILER|RouteMatrix users only)* New RouteMatrix API for faster transaction times.
- **NEW!** Five Hours of Service (HOS) APIs for creating an HOS management system.
- **NEW!** Eight APIs that enable searches for POIs along a route.
- **NEW!** RouteSync Blob Viewer diagnostic tool for RouteSync users.
- **NEW!** JSON (v3) Format Setting in the PCMSERVE.INI for RouteSync users.
- **ENHANCED!** Updated sample code.
- **ENHANCED!** Connect logging now includes RouteSync blobs.
- **Deprecated in Version 29:** See the table of deprecated APIs and options on page 22-23.

VERSION NOTES:

- A number of APIs have been deprecated in favor of newer functions that offer better performance. See the list of APIs deprecated in Version 29 below, with alternate functions listed where they apply. Additionally, the PC*MILER|Connect *User's Guide, Appendix H* provides a table that includes deprecations from Version 26 through 29.
- PC*MILER|Connect users who are accessing RouteSync APIs should use the 6-digit decimal format for latitude/longitudes for more precision.
- .NET 4.5 framework is now required for PC*MILER|Connect, and is downloaded automatically with the installation.

FEATURE DETAILS:

NEW! PCMSSetRoadSpeed() and PCMSGetRoad Speed().

```
int _PCMSFN PCMSSetRoadSpeed(Trip trip, long speed, const char *state, long type, bool urban =
false);
```

This function sets the road speed for the given jurisdiction and road type. *Trip* is the trip. *Speed* is a value above 0 to set the selected road type to. *State* is the state/province/country abbreviation of the desired state to change. In North America it would be examples like "NY" or "QC." If

PC*MILER|Worldwide or DTOD data is installed, in worldwide regions it would be country abbreviations as in other Connect APIs that use a state abbreviation.

Type is a new set of defined constants that begin with ROADTYPE. Below are the valid road types that can be changed, they are identical to the road types in PCM Interactive:

#define	ROADTYPE_INTERSTATE	1
#define	ROADTYPE_DIVIDED	2
#define	ROADTYPE_PRIMARY	3
#define	ROADTYPE_FERRY	4
#define	ROADTYPE_SECONDARY	5
#define	ROADTYPE_RAMP	6
#define	ROADTYPE_LOCAL	7

Urban, which defaults to false, indicates if the roads are urban or not. To set all roads of a type, both the urban and non-urban (rural) must be set using two calls.

Returns non-negative on success. Returns a -1 and an INVALIDARGUMENT error code if any supplied arguments are out of range, or if an invalid state is passed in.

```
int _PCMSFN PCMSGetRoadSpeed(Trip trip, const char *state, long type, bool urban = false);
```

This function returns the road speed for the indicated values. Returns a -1 and an INVALIDARGUMENT error code if any supplied arguments are out of range, or if an invalid state is passed in.

NEW! PCMSSetElevationDiscouraged().

```
void _PCMSFN PCMSSetElevationDiscouraged(Trip trip, BOOL onOff);
```

This function sets a customized limit on the elevation of the roads a route will use. As in the PC*MILER GUI, elevations at or above this height will be avoided unless 1) it is extremely impractical to do so; or 2) a stop or destination on the route is located at the higher elevation. Use with PCMSSetElevationLimit() below.

NEW! PCMSSetElevationLimit().

```
void _PCMSFN PCMSSetElevationLimit(Trip trip, long altitude);
```

This function sets the threshold for the elevation (in feet) to avoid when “Elevation Discouraged” is enabled. The default here is 7500 feet and above, as in the PC*MILER User Interface. A “get” option is not provided, you should make sure you are using the right elevation every time Elevation Routing is used.

NEW! PCMSSetFerryDiscouraged().

```
void _PCMSFN PCMSSetFerryDiscouraged(Trip trip, BOOL onOff);
```

This function determines if ferry miles will be avoided on a route. As in the PC*MILER GUI, ferries will be avoided unless the resulting alternate route would be extremely impractical or impossible. TRUE means ferry distances will be avoided.

NEW! PCMSMatrixAddOrigin().

```
int _PCMSFN PCMSMatrixAddOrigin(const char *stop);
```

*(PC*MILER|RouteMatrix must be licensed and installed)* The above function configures RouteMatrix to only calculate N number of rows, allowing faster transaction times. It should be added just before the API that calculates the trip matrix.

For example, PCMSMatrixAddOrigin("35.173099517822266n, 107.89029693603515w") will produce only one row of output, like the one below, for each stop that is added to the matrix.

0.00	253.40	636.04	1688.83	1184.59

NEW! Hours of Service (HOS) APIs.

*(PC*MILER|Streets for U.S. Streets must be licensed and installed, and Streets routing must be enabled.)* The new HOS function, used in conjunction with the APIs for POI searches along a route described below, can be used as a tool box to build your own HOS management system. These APIs were designed to validate whether a trip conforms to the rules that PC*MILER uses for HOS management of a route. If it does not conform, a report is generated that specifies where off duty stops are needed along a route to comply with PC*MILER HOS rules. Users can then determine which stops to insert along a route and at what point to insert them. The trip validation process can be repeated until compliance with the HOS rules is confirmed.

```
int PCMSSetStopOptions(Trip trip, int stopIndex, bool onDuty, int stopDuration, int stopType)
int PCMSGetStopOptions(Trip trip, int stopIndex, bool* pOnDuty, int* pStopDuration, int*
        pStopType)
int PCMSSetHOSAvailableTime(Trip trip, int drivingTimeUntilRestBreak, int drivingTimeUntil EOD,
        int onDutyTimeUntilEOD)
int PCMSValidateRouteHOS(Trip trip)
int PCMSGetHOSRouteReport(Trip trip, char* buffer, int bufSize)
```

For detailed descriptions of these APIs, see the PC*MILER|Connect *User's Guide.*

NEW! Find POIs Along a Route (FPAR) APIs.

*(PC*MILER|Streets for U.S. Streets must be licensed and installed, and Streets routing must be enabled.)* These new APIs can be used to search for points of interest (POI's), including fuel stops, along a route. If PC*MILER|Streets is not installed, an error code specific to that issue will be returned. A second requirement is that at least one stop on the route must be within U.S. borders. These APIs can be used as part of a tool box for creating an Hours of Service (HOS) management system, in conjunction with the Hours of Service APIs described above.

```
int PCMSGetNumFPARPOICategories(PCMServerID server)
int PCMSGetFPARPOICategoryName(PCMServerID server, int poiCatIndex, char* buffer, int bufSize)
int PCMSFindPOIsAlongRoute(Trip trip, float start, float end, bool bDistanceSearch, int sortOrder,
        float offRouteDistThreshold, const int* pPOITypes, int numPOITypes)
int PCMSFindPOIsAlongRoute2(Trip trip, int legIndex, int sortOrder, float offRouteDistThreshold,
        const int* pPOITypes, int numPOITypes)
int PCMSGetPOIAlongRouteResult(Trip trip, int result, char* stopBuffer, int bufSize, int*
        distanceFromOrigin, int* timeFromOrigin, float* pFuelPrice , char* amenityBuffer, int
        amenityBufSize)
int PCMSGetFuelProviders(PCMServerID server, char* buffer, int bufSize)
int PCMSFindFuelStopsAlongRoute(Trip trip, float start, float end, bool bDistanceSearch, int
        sortOrder, float offRouteDistThreshold, const char* pFuelProviders)
int PCMSFindFuelStopsAlongRoute2(Trip trip, int legIndex, int sortOrder, float
        offRouteDistThreshold, const char* pFuelProviders)
```

For detailed descriptions of these APIs, see the PC*MILER|Connect *User's Guide.*

NEW! RouteSync Blob Viewer.

For those who are integrating RouteSync features into an application, the RouteSync trip_test.exe blob viewer is a diagnostic tool to help troubleshoot a route sent through RouteSync. The tool generates a report that tells you if the blob is in V2 or JSON (V3) format, and includes the compliance level, route options, stop names, and lat/longs between trip legs in the sent route. The blob viewer output is a file saved in the App folder of the PC*MILER installation. It can be opened in a text editor program.

NEW! JSON Format Setting in PCMSERVE.INI.

To change the format of the RouteSync blobs that you send, you will need to add the following line in the OPTIONS section of the PCMSERVE.INI file:

```
[OPTIONS]
RouteSyncJSONFormat= True
```

With this option set to TRUE, RouteSync blobs will be generated in JSON (v3) format. By default, the format is v2.

ENHANCED! Updated Sample Code.

Updated sample code for .Net and C++ can be found in the **StaticLink** folder of your PC*MILER installation, usually C:\ALK Technologies\PCMILER29\Connect\C_CPP\StaticLink. Other folders in the PC*MILER|Connect installation include additional files containing sample code and additional documentation, along with descriptive ReadMe files. Some sample code in the PC*MILER|Connect *User's Guide* has been updated as well.

APIs and Options Marked As Deprecated in Version 29.

APIs and options that have been newly marked as deprecated in Version 29 are shown below, along with an alternate if one exists. A note about ALK's deprecation policy is below the table. The list below reflects the most recent changes but is not a comprehensive list of all deprecated APIs.

Deprecated in Version 29	Alternate API or Option
GEOCODING Functions:	
PCMSAddStop2	PCMSAddStop(), or stop validation via PCMSLookup() with easyMatch option 5 to get extended geocoding error codes for nonexact matches, if necessary PCMSGetMatch() to get a routable stop and PCMSAddStop()
PCMSAddressToLatLong	PCMSNewTrip(), PCMSLookup() with easyMatch option 2 for exact same results, or option 5 to get extended geocoding error codes for cases where you do not have an exact match, then PCMSGetFmtMatch4() and PCMSDeleteTrip()
PCMSAddressToLatLong2	PCMSNewTrip(), PCMSLookup() with easyMatch option 2 for exact same results, or option 5 to get extended geocoding error codes for cases where you do not have an exact match, then PCMSGetFmtMatch4() and PCMSDeleteTrip()
PCMSCheckPlaceName	PCMSLookup() with option 2 for the exact same results; or easyMatch option 5 to get extended geocoding error codes for cases where you do not have an exact match
PCMSGetMaxTrustLevel	None
PCMSGetTrustLevel	None
ROUTING Functions:	
PCMSLocRadLookup2	PCMSLocRadLookup()
PCMSSetRoadNameOnly	None
PCMSSetOnRoad	None
ROUTE OPTIONS:	
OPTS_FERRYDISTANCE option flag	OPTS_FERRYMILES 0x0040L

Deprecated in Version 29	Alternate API or Option
PCMSGetBorderWaitHours	None
PCMSGetBreakHours	None
PCMSGetBreakWaitHours	None
PCMSSetBorderWaitHours	None
PCMSSetBreakHours	None
PCMSSetBreakWaitHours	None
PCMSGetRemainingHoursOfService	None
PCMSSetRemainingHoursOfService	None
PCMSSetDefaultRegion	PCMSNewTripWithRegion()
TIME & DISTANCE CALC:	
PCMSCalcDistance	Combination of PCMSNewTrip(), PCMSCalcTrip(), and PCMSDeleteTrip()
PCMSCalcDistance2	Combination of PCMSNewTrip(), PCMSetCalcType(), PCMSCalcTrip(), and PCMSDeleteTrip()
PCMSCalcDistance3	Combination of PCMSNewTrip(), PCMSSetCalcType(), PCMSCalcTrip(), PCMSGetDuration(), and PCMSDeleteTrip().
PCMSCalcTrip2	PCMSCalcTrip()
PCMSAirDistToRte2	PCMSAirDistanceToRte()
MISCELLANEOUS Functions:	
PCMSIsValid	Combination of PCMSNewTrip(), PCMSCalcTrip() using static test stops, and PCMSDeleteTrip()
PCMSTripCacheLoad	None
PCMSTripCacheSave	None

NOTE on ALK's DEPRECATION POLICY: If the "deprecated" status is applied to an API, it indicates that the API should be avoided when interfacing to PC*MILER. ALK generally deprecates an API when a better alternative has been developed, in order to encourage users to work with the newer functionality.

Although deprecated APIs may remain in the software, their use can produce warning messages and/or non-optimal results. Features are deprecated, rather than immediately removed, in order to provide backward compatibility and give developers who have been using the feature time to bring their code into compliance with the new standards. A deprecated API may be removed from the product in the future.

If a deprecated API is used in your interface to PC*MILER, when logging is turned on, a message will indicate where interface changes are suggested to bring your code into compliance as well as for best performance.

PC*MILER|MAPPING

SUMMARY:

- **NEW!** An additional "Large Cities" map layer.
- **NOTE:** No existing features have been deprecated or changed.

VERSION NOTES:

- No APIs were deprecated in Version 29, but APIs deprecated in Version 28 are listed in the *What's New* section of the PC*MILER|Mapping *User's Guide.* See note above, in the PC*MILER|Connect section, for ALK's deprecation policy.

FEATURE DETAILS:

NEW! An Additional "Large Cities" Layer.

A new map drawer, "Large Cities", now handles large cities like New York, Philadelphia, Los Angeles, etc. The Large Cities layer can be displayed or hidden using the PCMGShowLayer or PCMGHideLayer function. When using these functions to hide or show all cities on the map, two calls – "Cities" and "Large Cities" – are now needed.

PC*MILER|SPREADSHEETS

SUMMARY:

- No new features were added to the Beta Release.
- **Deprecated in Version 29:** The toll discount programs C-Pass, FAST LANE, and Smart Tag have been removed from the PC*MILER User Interface and can no longer be used with the =DiscountTolls() and =DiscountedTollsEx() functions.

PC*MILER|BATCHPRO

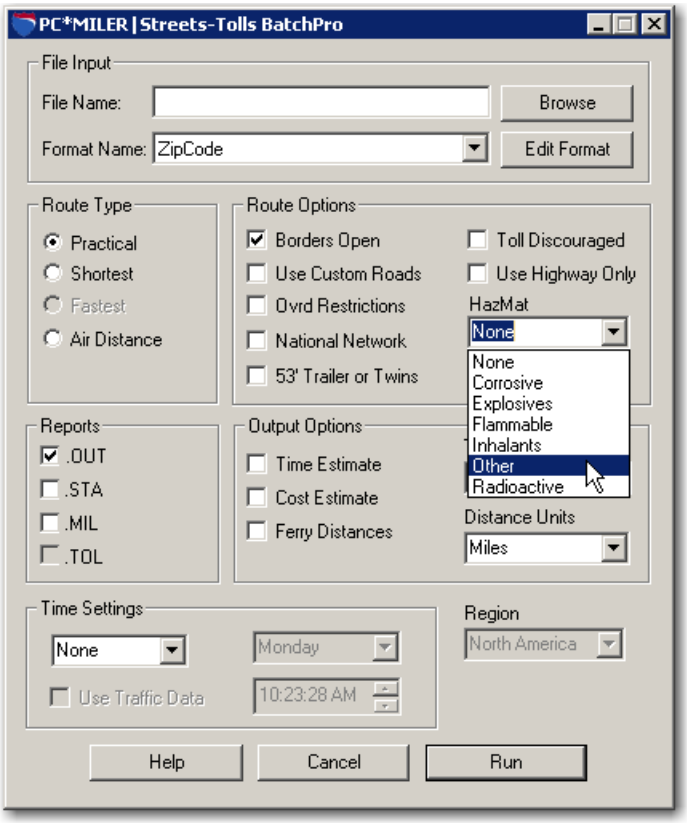
SUMMARY:

- **ENHANCED!** The HazMat route type category "General" has been changed to "Other".
- **NOTE:** No existing features have been deprecated or changed.

FEATURE DETAILS:

ENHANCED! The "General" Hazmat Route Type Has Been Renamed "Other".

If PC*MILER|HazMat is licensed and installed, BatchPro users will see the new "Other" category in the drop-down list of HazMat route types. This enhancement reflects the same change in the PC*MILER User Interface (described on page 15).



*HazMat Route Options in PC*MILER|BatchPro*

PC*MILER|TCP/IP

SUMMARY:

- No new features were added to the Beta Release.
- **NOTE:** No existing features have been deprecated or changed.

Section 2 System Requirements

SYSTEM REQUIREMENTS

PC*MILER for Windows Version 29 Requirements:

- PC with a minimum 1.5-2 GHz processor
- Windows® 7, 8 and 10 running in 32-bit compatibility mode for the Interactive GUI (the PC*MILER Connect, Mapping, BatchPro and Spreadsheets programs will run on 64-bit processors)
- Citrix 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 Interactive GUI and on 64-bit processors for PC*MILER Connect, Mapping, BatchPro, and Spreadsheets)
- 512 MB RAM minimum, 1 GB strongly recommended for standard desktop users. For Citrix and Terminal Server, 200 MB RAM per user for PC*MILER|Connect and PC*MILER|Spreadsheets.
- 2.6 GB Hard Disk Space for full install (including all available Add-ons – PC*MILER|Energy not available in the Beta Release)
- Color Quality Settings Supported: 16-bit and 32-bit (8-bit and 24-bit not supported)
- Minimum Screen Resolution of 800 x 600
- Internet Connection for License Activation and access to select features such as Satellite imagery, real-time Traffic data on the RouteMap, and updated fuel prices.

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.

NOTE: Beginning in Version 29, Windows XP is no longer supported. Platforms not supported include Windows 95, 98 First/Second Edition, Me, 2000, NT, 2003, Vista, XP, Windows Server 2000, and Windows Server 2003.

Addendum: Overview of HOS Functionality in PC*MILER 29

The table below summarizes the U.S. government's Hours of Service (HOS) regulations that PC*MILER's HOS functionality incorporates into Version 29.

Hours of Service Rules (HOS) for Property Carrying Drivers in the U.S. – PC*MILER 29	
11-Hour Driving Limit	May drive a maximum of 11 hours after 10 consecutive hour's off-duty.
14-Hour 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]

A summary of federal HOS regulations can be found on the following web page:
https://cms.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations