PC★MILER® 28

Technology Beyond Miles

alk
A TRIMBLE COMPANY

Take a Guided Tour Through PC*MILER!

The Tour on the following pages will enable you to fully experience the functionality, speed, ease of use, and accuracy of PC*MILER. Please take a little time to become comfortable with the basic features of PC*MILER by following the instructions in this tour, step by step. By taking this guided tour, you will quickly become familiar with the product's major features and capabilities.

If you want more information at any point during this tutorial, with the PC*MILER application window active, press the **<F1>** key on your keyboard to bring up online help; or open the *PC*MILER User's Guide* – if you don't see this PDF document on your desktop, click the Windows **Start** menu > *All Programs* (or the equivalent in your version of Windows) > *PCMILER 28 > User Guides > User's Guide*.

Now on to the Guided Tour, welcome aboard and we hope you enjoy the ride!

This Way for the Guided Tour…

Stops On The Tour

PC*MILER 28 Application Window Overview

To begin the Tour, double-click on the PC*MILER icon on your desktop to open the program or click the Windows **Start** menu and select **All Programs** (or the equivalent for your version of Windows) **> PCMILER 28**.

When you first open PC*MILER, you'll see an active route window on the left, the RouteMap 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 Microsoft Office Word® or Excel® 2007 and higher will already 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 RouteMap window. The screenshot below shows your initial view of PC*MILER, with the Routes toolbar visible. This toolbar has three groups of tools: General, Utilities and "Route 1" (the name of this group reflects the name of the currently active route in the Routes window).
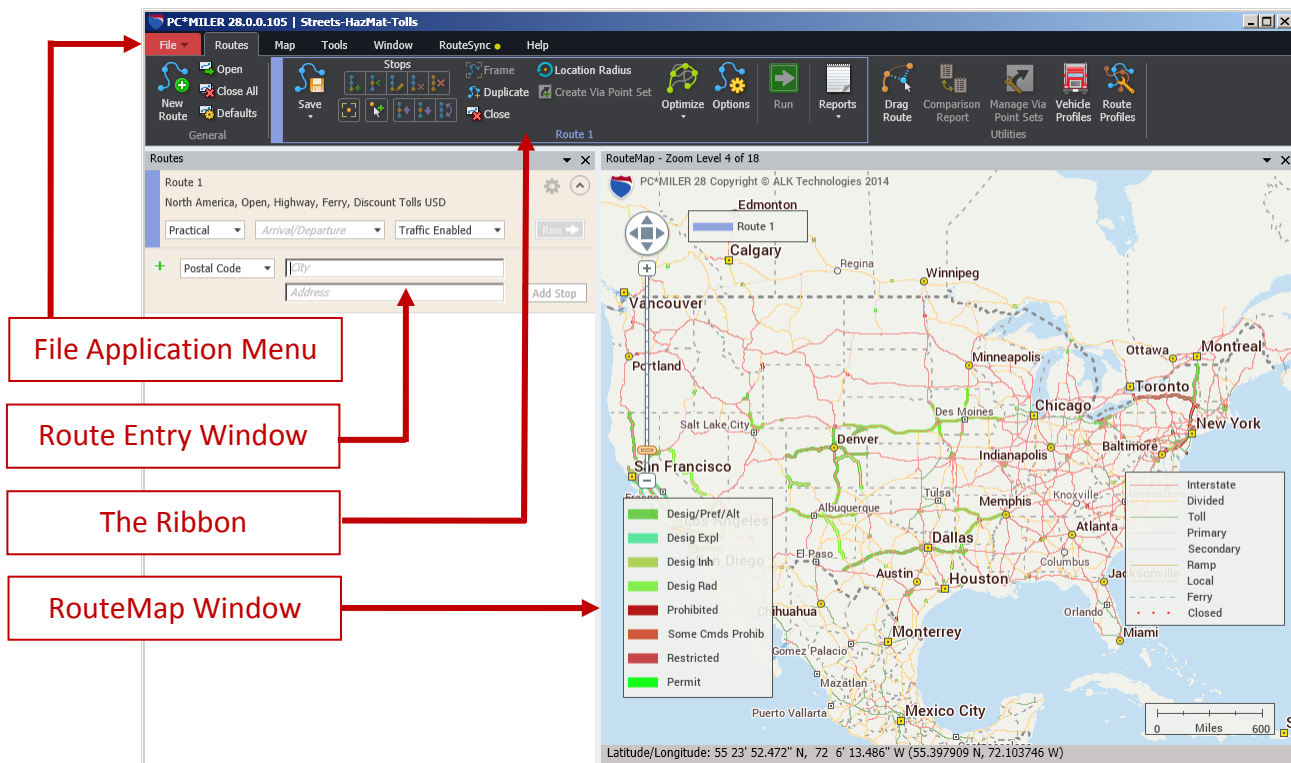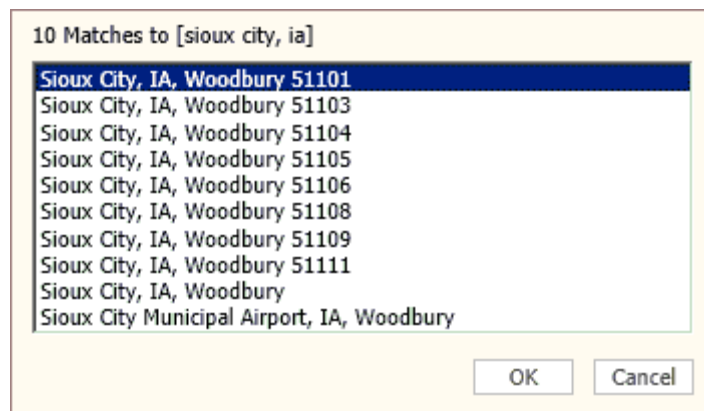
Getting Started: First Run a Route

To generate a route, you need to enter at least two stops (an origin and a destination). We will enter an origin, a destination, and three intermediate stops. Your cursor should be in the Route 1 window, in the *City* field. (If you don't see this window, click *New Route* in the Routes tab > General group.) For now, we'll ignore the time-of-day, day-of-week, and traffic settings that are available in the route window.

1. As the first step, select the red File application menu (upper left corner of the PC*MILER window) > *Application Settings* and make sure **Provide Pick List** is checked. This option displays a pick list when there is more than one possible match in the PC*MILER database for a location you enter. Click **Save** to close the window.

2. In the *City* field of the route window, enter the trip origin as a city/state: type "**sioux city, ia**" (with or without a space between the city and state) and click **Add Stop** or press **<Enter>**. Click **OK** in the pick list that pops up to enter the first match on the list. You entered "**51101 Sioux City, IA, Woodbury**". The **Time Zone** column to the right of the stop name tells us that the time zone at this location is Central Daylight Time (**CDT**).

Postal Code ▾	sioux city, ia	
	Address	Add Stop

```
10 Matches to [sioux city, ia]

Sioux City, IA, Woodbury 51101
Sioux City, IA, Woodbury 51103
Sioux City, IA, Woodbury 51104
Sioux City, IA, Woodbury 51105
Sioux City, IA, Woodbury 51106
Sioux City, IA, Woodbury 51108
Sioux City, IA, Woodbury 51109
Sioux City, IA, Woodbury 51111
Sioux City, IA, Woodbury
Sioux City Municipal Airport, IA, Woodbury

                              OK      Cancel
```

3. Next, type "**urbandale, ia**" and click **Add Stop**. With "**50322 Urbandale, IA, Polk**" selected in the pick list , click **OK** or press **<Enter>** to add this stop.

4. Type "**52585**" in the *City* field and click **Add Stop**. Choose "**Richland, IA, Keokuk**" as the next stop.

5. Get help with spelling when you enter a third stop: type "**ma,ia**" and click **Add Stop**. In the pick list, scroll down and highlight "**Manchester, IA, Delaware 52057**" then click **OK**. (The cities at the top of the pick list are not in alphabetical order – this is because with multiple matches, PC*MILER will list the most densely populated and popular locations first, with an alphabetical listing of other potential matches underneath.)

```
107 Matches to [ma, ia]
Marion, IA, Linn 52302
Marion, IA, Linn
Marshalltown, IA, Marshall 50158
Marshalltown, IA, Marshall
Mason City, IA, Cerro Gordo 50401
Mason City, IA, Cerro Gordo
Madrid, IA, Boone 50156
Madrid, IA, Boone
Manchester, IA, Delaware 52057
Manchester, IA, Delaware
Manson, IA, Calhoun 50563
Manson, IA, Calhoun
Maquoketa, IA, Jackson 52060
Maquoketa, IA, Jackson
Marengo, IA, Iowa 52301
Marengo, IA, Iowa
Macedonia, IA, Pottawattamie 51549
Macedonia, IA, Pottawattamie
Macksburg, IA, Madison 50155
Macksburg, IA, Madison
Magnolia, IA, Harrison 51550

                              OK      Cancel
```

6. Use the ZIP Code Helper to enter the final destination of the route: type **50** and click **Add Stop**. Scroll down the pick list and highlight "**50514 Armstrong, IA, Emmet**" then click **OK**.

```
2179 Matches to [50]
Woden, IA, Hancock 50484
Fort Dodge, IA, Webster 50501
Albert City, IA, Buena Vista 50510
Algona, IA, Kossuth 50511
Armstrong, IA, Emmet 50514
Ayrshire, IA, Palo Alto 50515
Badger, IA, Webster 50516
Bancroft, IA, Kossuth 50517
Barnum, IA, Webster 50518
Bode, IA, Humboldt 50519
Bradgate, IA, Humboldt 50520
Burnside, IA, Webster 50521
Burt, IA, Kossuth 50522
Callender, IA, Webster 50523
Clare, IA, Webster 50524
Clarion, IA, Wright 50525
Clarion, IA, Wright 50526
Curlew, IA, Palo Alto 50527
Cylinder, IA, Palo Alto 50528
Dakota City, IA, Humboldt 50529
Dayton, IA, Webster 50530

                              OK      Cancel
```

7. Click the **Run** button or press the **<F10>** key to generate your route.

PC*MILER will calculate the mileage for each leg of the trip, along with cost and time* estimates, and cumulative totals below the stop list. If PC*MILER|Tolls is installed, toll costs will be calculated as well. The route will be drawn and framed in the RouteMap window.

*This and subsequent routes in the Tour were run with PC*MILER|Traffic features enabled. If this add-on was not purchased and installed, your drive time estimates will vary slightly from what you see here.*

Search a Location Radius

The Location Radius tool can help with rate determination and pre-operations planning. We'll just take a quick look at it.

1. Click **Manchester, IA** to highlight it on the stop list for the route you just ran.

2. In the Routes tab > Route 1 group, click *Location Radius* to open the Location Radius dialog box. You'll see Manchester entered in the **City** field. Any valid PC*MILER location can be entered for a location radius search.

3. Enter "15" as the number of miles for a **Radius** around Manchester, uncheck **Cities** and check **Postal Codes** instead.

4. Click **Find**. All postal codes within 15 miles of Manchester will be listed:

5. Now we'll select some points on the list to plot on the map: holding the **Shift** key down, click the first location on the list (Manchester) then click **Edgewood, IA 52042** to select it and all the postal codes in between:

Place	Type	Dis'
Manchester, IA 52057	Postal Code	0.0
Delaware, IA 52057	Postal Code	0.0
Delaware, IA 52036	Postal Code	5.5
Masonville, IA 50654	Postal Code	6.9
Delhi, IA 52223	Postal Code	7.5
Dundee, IA 52038	Postal Code	8.0
Earlville, IA 52041	Postal Code	9.1
Greeley, IA 52050	Postal Code	9.1
Ryan, IA 52330	Postal Code	9.3
Edgewood, IA 52042	Postal Code	11.4
Littleport, IA 52042	Postal Code	11.4

6. Click **Plot Points**. You'll see the points plotted on the map, represented by small red squares. At this point you could also **Save** the highlighted points in a text file, or click **Add Stops** to add them as stops in the active route window, replacing Manchester. But we'll move on to search for points of interest (POI).
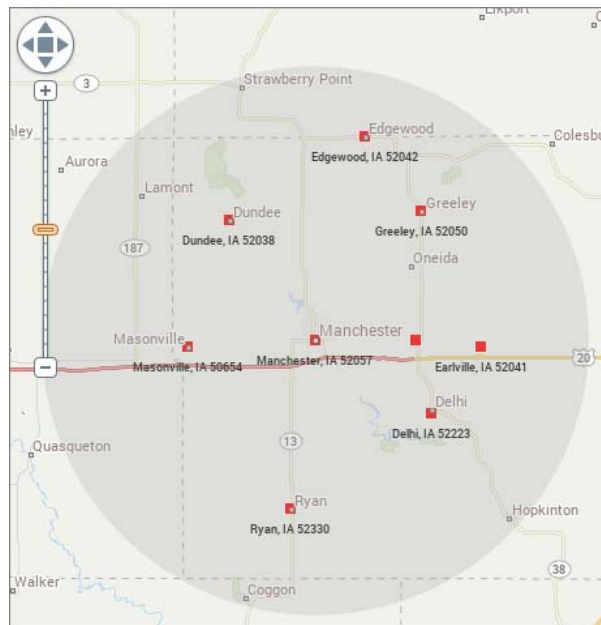
7. Click **Clear** to clear the map and results list.

8. Change the **Radius** to **50**, uncheck **Postal Codes**, and check **POIs**.

9. In the **POI Categories** pick list, scroll down and highlight **Cat Scales**, then click **Find**. This will generate a list of all CAT weigh scales within 50 miles of Manchester:

Place	Type	Distan
#Center Point Travel Plaza	POI	27.1
#Highway 20 Auto Truck Plaza	POI	34.4
#Road Ranger / Pilot	POI	40.3
#Flying J Travel Plaza	POI	40.7
#Kwik Stop	POI	40.7
#Casey's Just Diesel	POI	42.7
#Casey's General Store	POI	48.5

10. Scroll back to the top of the POI Categories list and notice that custom categories are listed at the top:

POI Categories	
Custom Category	▲
Custom	▣
Island	
Default Category	
Airport	
Attractions	▼

PC*MILER lets you create custom categories of POI that can be searched and plotted on the map. For now though, we'll just exit the Location Radius dialog and continue with the Tour – click the "X" in the upper right corner to close the Location Radius window.

## Look at the Route Displayed in the RouteMap Window

Next, let's look at your route framed in the RouteMap window:

1. The RouteMap window can be floated as a separate window – right click on the gray title bar and select *Float*. The window now appears with a dark border and can be dragged to any position on your screen.
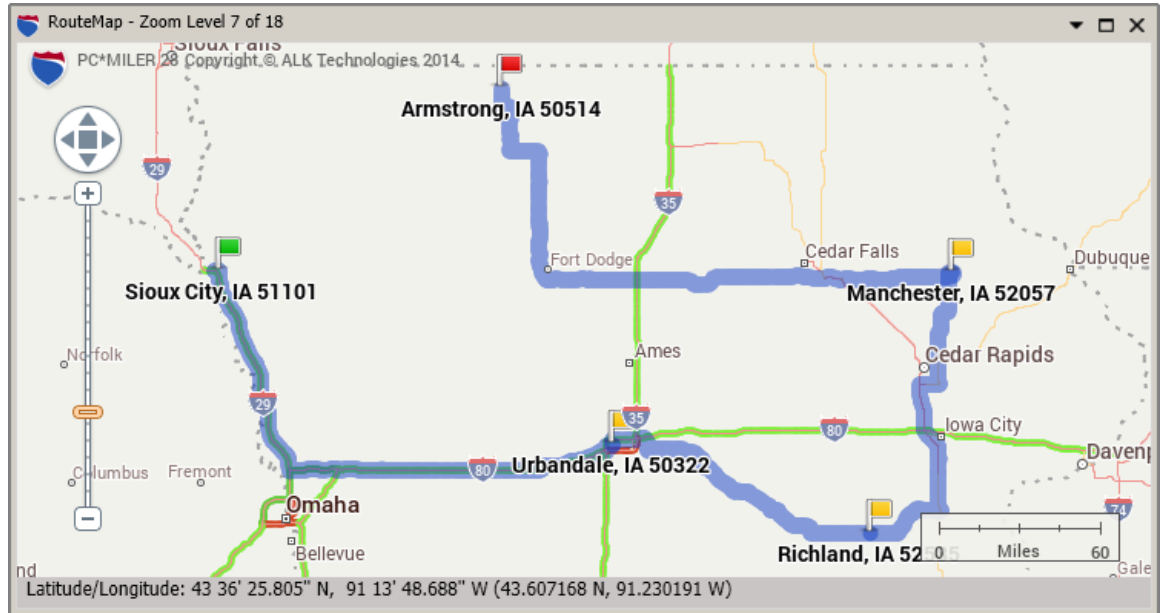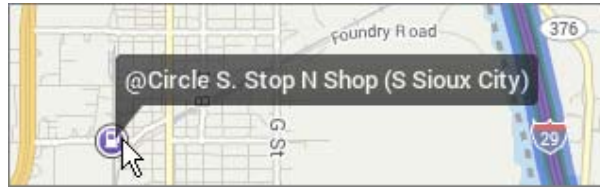

2. Select the Map tab > Customize group > *Legends* menu to control which legends appear on the map. Try checking/unchecking a legend in this menu to display/hide it. Legends on the map can be positioned anywhere you choose: place your cursor on a legend, hold down the left mouse button and drag it to another spot.

3. By default the map is in drag map mode (the cursor is shaped like a hand). Click and drag the map to pan your view.

4. Use the Zoom Level slider bar to adjust the zoom level (+ to zoom in, - to zoom out) and use the compass above it to pan the map north, south, east or west.

5. Another way to shift the map view is to use the hidden scroll bars. To activate a scroll bar, place your cursor near any edge of the RouteMap window. Click on the scroll bar to move the map incrementally in the direction indicated by the arrow, or click and hold to pan the view quickly:

Scroll Bar with directional arrow
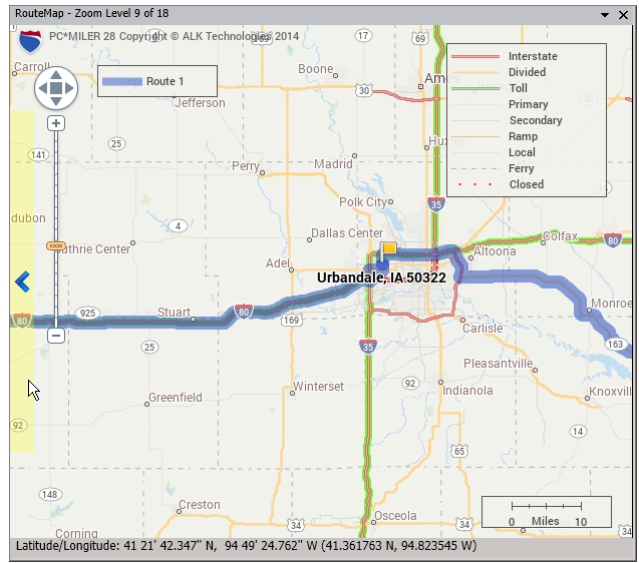
6. You can also click and hold the mouse on the map and drag a box around an area to zoom in to it: first select the Tools tab > View group > *Box Zoom.*

7. In the Route 1 window, double-click Sioux City on the stop list to zoom in on it. Notice that at Detail Level 11 of 18 (look at the title bar of the RouteMap window), truck stops and fueling stations begin to display.

8. As you zoom in closer, other points of interest (POI) will appear. At higher zoom levels, you can place the cursor over any POI to see its name:

9. Select the Map tab > Customize group > *Tooltips > Route Distance*. When this feature is turned on, if the cursor is placed at any point on a generated route on the map, a tooltip will appear that displays the distance from the origin and destination at that point:

10. A **right mouse** map menu gives you quick access to many of the features described above and more – with your cursor in the RouteMap window, click the right mouse button and select *Features… .*

11. In the Map Features dialog, all the listed features can be displayed or hidden. Features that are checked will be displayed. Features on the left can be raised or lowered to change the order in which they are drawn on the map (for example, raising "Cities" to the top of the list will draw city names on top of all other features, making them more visible).
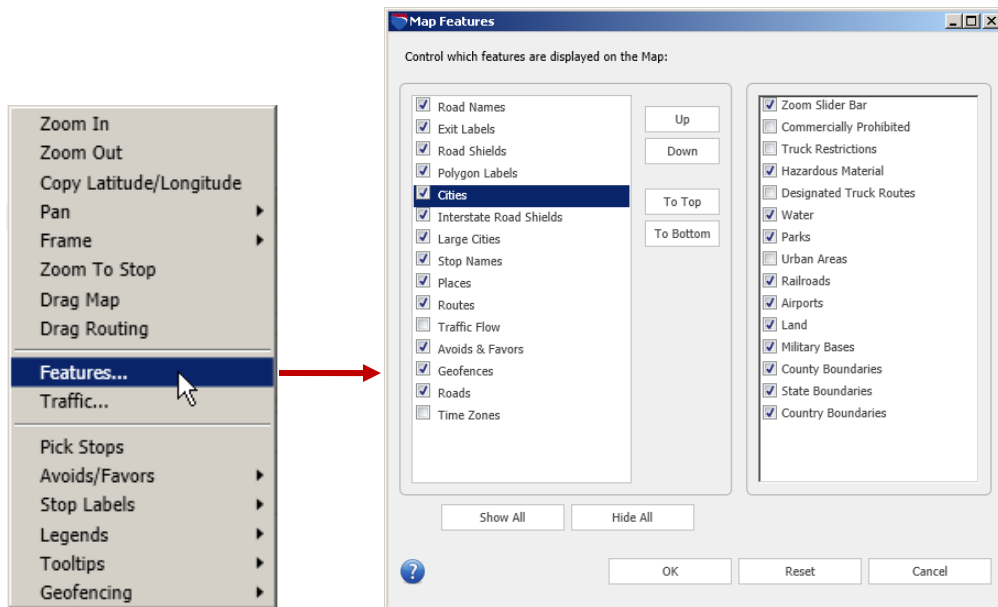
12. We will leave the features in their default positions. Click **Cancel** in the Map Features dialog, then right mouse click on the title bar of the RouteMap window and select *Dock*.

Duplicate a Route and Change the Route Type

We are now going to open a second route by duplicating Route 1:

1. Click on the **Route 1** entry window to activate it.

2. Click the minimize button in the upper right corner to shrink the window

3. Select the Routes tab > Route 1 group > *Duplicate*. A duplicate route will open.

4. In the **Route 1 - Copy** window, use the pick list in the upper left corner to change the route type to **Shortest**, then click **Run** or press the **<F10>** key.

5. Look at the two routes on the map to see how the route from Sioux City to Armstrong has been altered because you changed the route type.
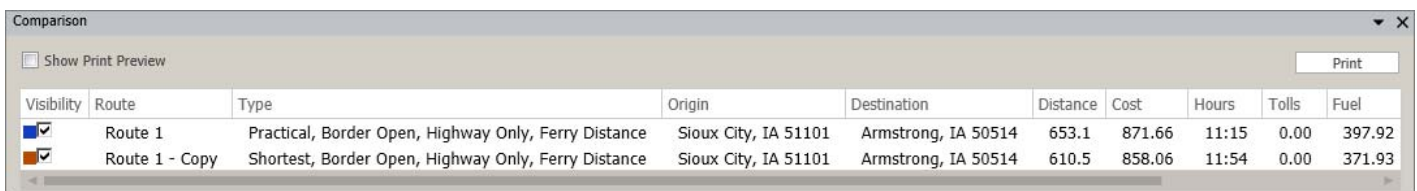
View the Comparison Report

The Comparison Report includes a summary of the total mileage, cost estimates, and time estimates for all currently open routes. It allows you to see clearly the differences between your generated routes.
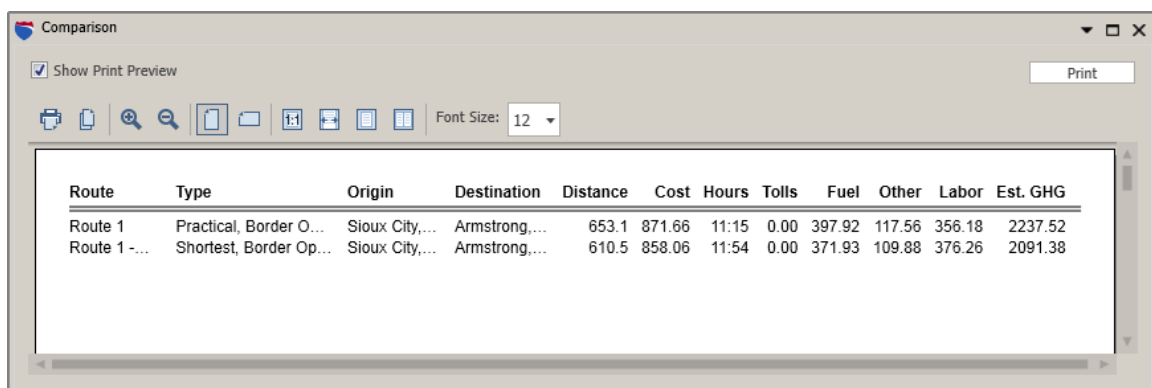
1. To view the Comparison report, either click *Comparison Report* in the Routes tab > Utilities group or press the **<F4>** key. In this report it's easy to see that the Shortest route covers fewer miles, but has a longer drive time. Scroll the report to the right to see additional cost estimates (Other cost, Labor cost, and Estimated Green House Gas emissions).

All cost estimates are calculated using default trip costs that can be customized in the Route Options dialog. Road speeds used in time estimate calculations can also be customized in this dialog. (Time estimates may also be affected by traffic considerations if PC*MILER|Traffic is licensed.)

2. To see the Comparison report in a printable format, check **Show Print Preview** in the upper left corner. The tool bar above the printable version allows you to change the font size and layout, zoom in and out, and copy and print the report.

3. Click the "X" in the upper right corner of the Reports pane to close this report and continue the Tour.
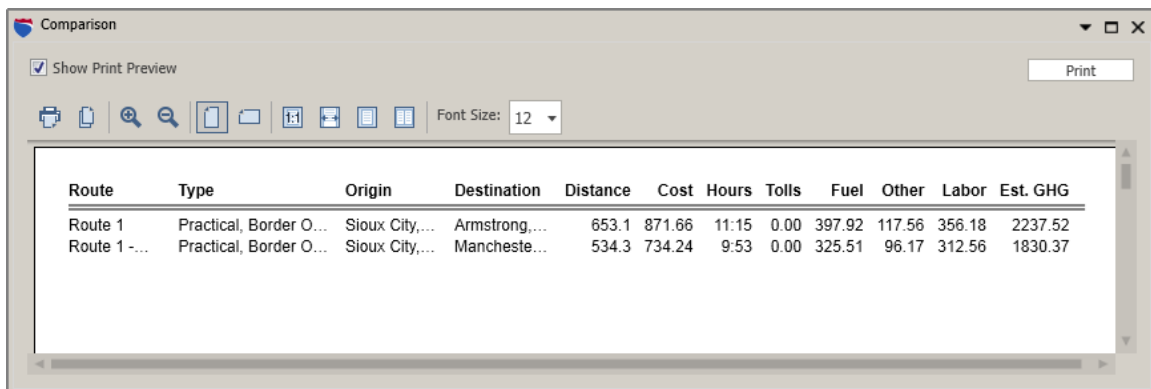
Optimize a Route

PC*MILER can reorder the stops on a route, thereby optimizing trip time, cost and mileage. Let's optimize **Route 1**:

1. Close the **Route 1 - Copy** window: click the gear button in the upper right corner ⚙ and choose *Close Route*.

2. Click on the maximize button in the upper right corner of the **Route 1** window. ⌄

3. Duplicate Route 1 again (Routes tab > *Duplicate*).

4. With the new route window active, select the Routes tab > *Optimize > Optimize Stops.*

5. The **Run route after optimizing stops** option should be checked and **Route Through All** should be selected, meaning the last stop can be reordered if necessary.

6. Click **OK** to optimize the stops in the new window.

7. Press the **<F4>** key to generate a new Comparison Report.

As you can see, PC*MILER determined that the optimal route would have Manchester as its destination and Armstrong as the second stop. The optimized route is significantly different from the version of the same route we entered earlier: it saves about **119 miles** and **over 1 hour and 20 minutes** of driving time, plus the additional trip costs!

Generate Least Cost Routing Options

PC*MILER includes a 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, letting the user choose an optimal route.

We will run Least Cost routing for the duplicate route, which already has an optimized stop order:

1. With the **Route 1 - Copy** window active, select the Routes tab > *Optimize > Least Cost Routing...* . Six different routes will be generated and displayed in a separate window. You'll see the most efficient calculated totals for distance, costs, hours and tolls highlighted in yellow below the map.

Visible	Color	Options	Distance	Costs	Hours	Tolls	Fuel	Labor	Other	EstGHG
☑	■	Practical, Border Open, High	534.3	734.24	9:53	0.00	325.51	312.56	96.17	1830.37
☑	■	Shortest, Border Open, High	518.8	725.07	9:58	0.00	316.08	315.61	93.38	1777.37
☑	■	Fastest, Border Open, Highv	534.5	731.09	9:46	0.00	325.64	309.24	96.21	1831.12
☑	■	Practical, Toll Avoid, Border	534.3	734.24	9:53	0.00	325.51	312.56	96.17	1830.37
☑	■	Shortest, Toll Avoid, Border	518.8	725.07	9:58	0.00	316.08	315.61	93.38	1777.37
☑	■	Fastest, Toll Avoid, Border (	534.5	731.09	9:46	0.00	325.64	309.24	96.21	1831.12

Print   Save Selected Options   Cancel

2. Highlight one of the Fastest routes and click **Save Selected Options** to save that route in the active route window (Route 1 - Copy), replacing the current route. Notice that the route is recalculated, as is the Comparison Report that is still open.

3. Close the Least Cost and Comparison Report windows to continue the Tour.

Generate a Route in Hub Mode

PC*MILER's Hub Routing feature allows you to generate routes and mileages from one origin to unlimited destinations. Let's rerun Route 1 in Hub mode. The origin (**Sioux City, IA**) will become the hub:

1. To see how a route can be floated in its own modal window, click the gear button in the Route 1 window and choose *Float*.

2. In the Route 1 window, click the gear button again and choose *Options*.

3. In the Route Options dialog, check **Hub Routing**.

4. Click **Save**. The new route will run automatically. It now has one hub and four stops.
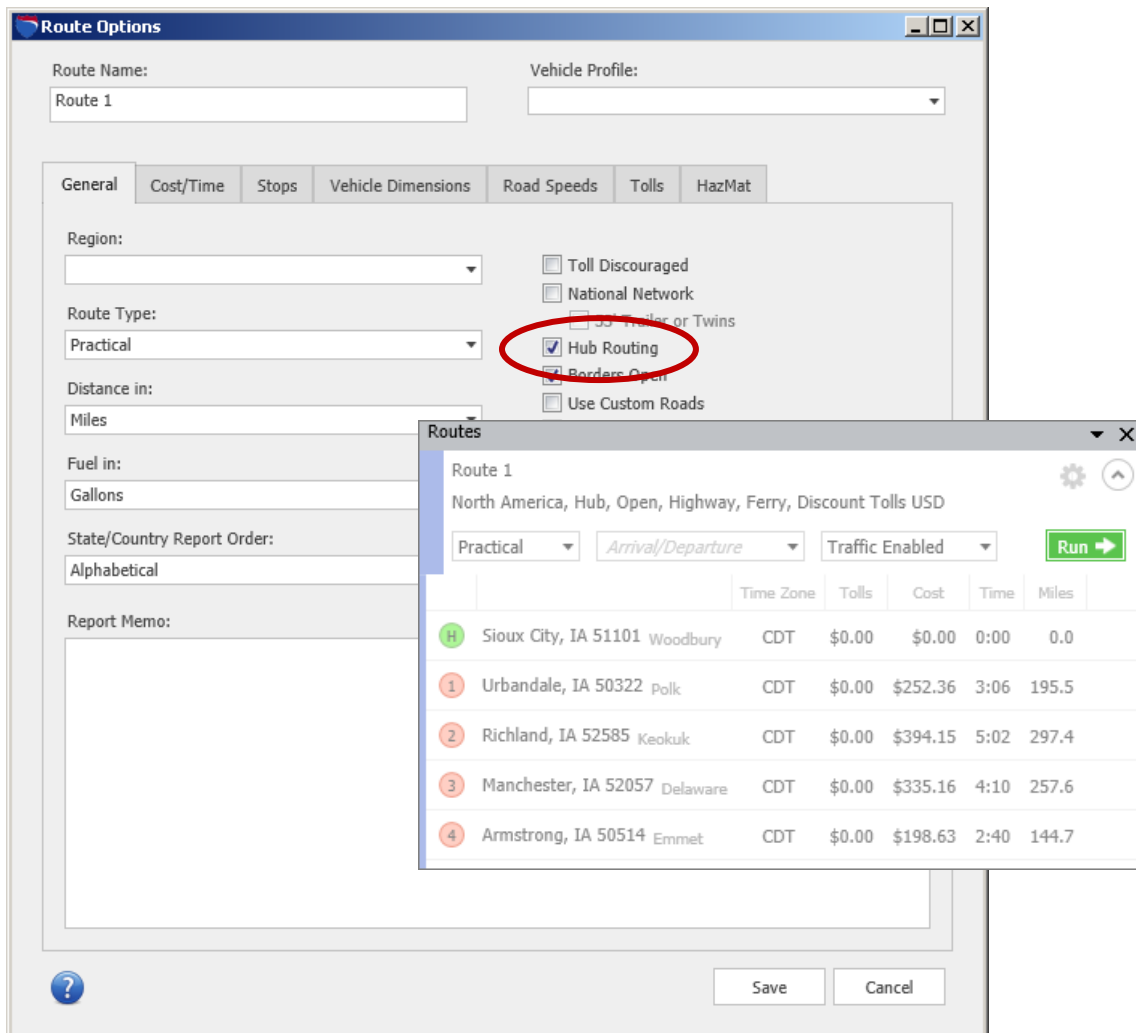
Route To a Truck Stop

PC*MILER gives you the ability to search for and add truck stops, highway exits and junctions, CAT weigh scales, and more as stop on a route. In the steps below, we'll add a truck stop to the stop list for Route 1.

1. Right click the Route 1 window title bar and choose *Dock.*

2. Highlight **Urbandale** on the stop list, then either right click and choose *Insert Stop Above,* or press **<F7>**.

3. In the *City* field type "@t, ia" and press **<Enter>** to get a pick list of all truck stops whose names begin with "T" in the state of Iowa. Highlight "**@Truck Haven (Sioux City), IA**" and click **OK**. This truck stop is now the first stop on the list.

4. Highlight Truck Haven on the stop list and double-click it to zoom to this truck stop on the map.

5. Click **Run** to generate the new route.
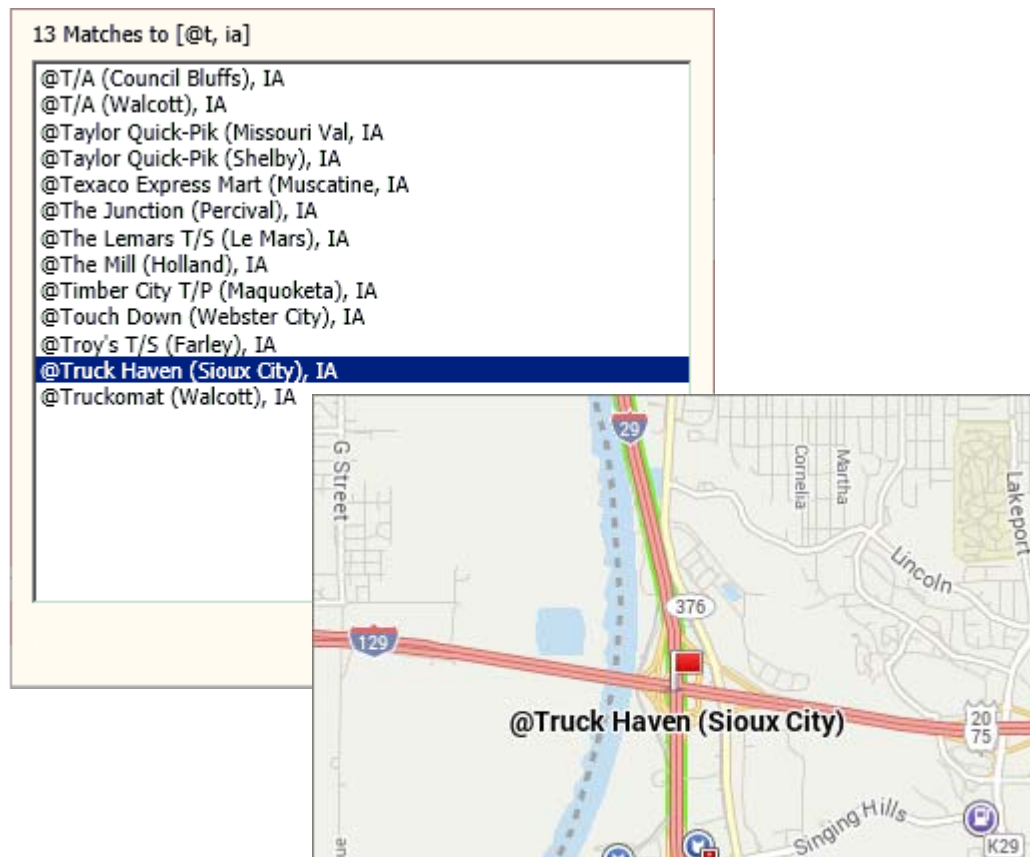
Customize Place Names

PC*MILER allows you to customize place names to match the names of your facilities and customer locations. Let's add a custom place to the stop list for Route 1:

1. Select the Tools tab > Custom Place Manager group > *Add Places*.

2. In the Add A Place dialog, type "**HQ**" in the **Name** field.

3. In the **Location** field, type "**fort dodge, ia**" then click **Save** and select the match at the top of the pick list. (A postal code or latitude/longitude point would also be accepted, and an address is optional.)

4. Select the Tools tab > Custom Place Manager group > *Manage*. You'll see the custom place that you added to the PC*MILER database listed in this dialog.

5. Close the Custom Place Manager window.

6. In the Route 1 window, with Stop 1 Truck Haven highlighted, press **<F7>** or click the *Insert Stop Above* button on the Routes toolbar.

7. Type "hq" in the *City* field and click **Add Stop** or press **<Enter>**. Your custom place will appear on the list as Destination 1.

8. To calculate the new hub route, click **Run**.
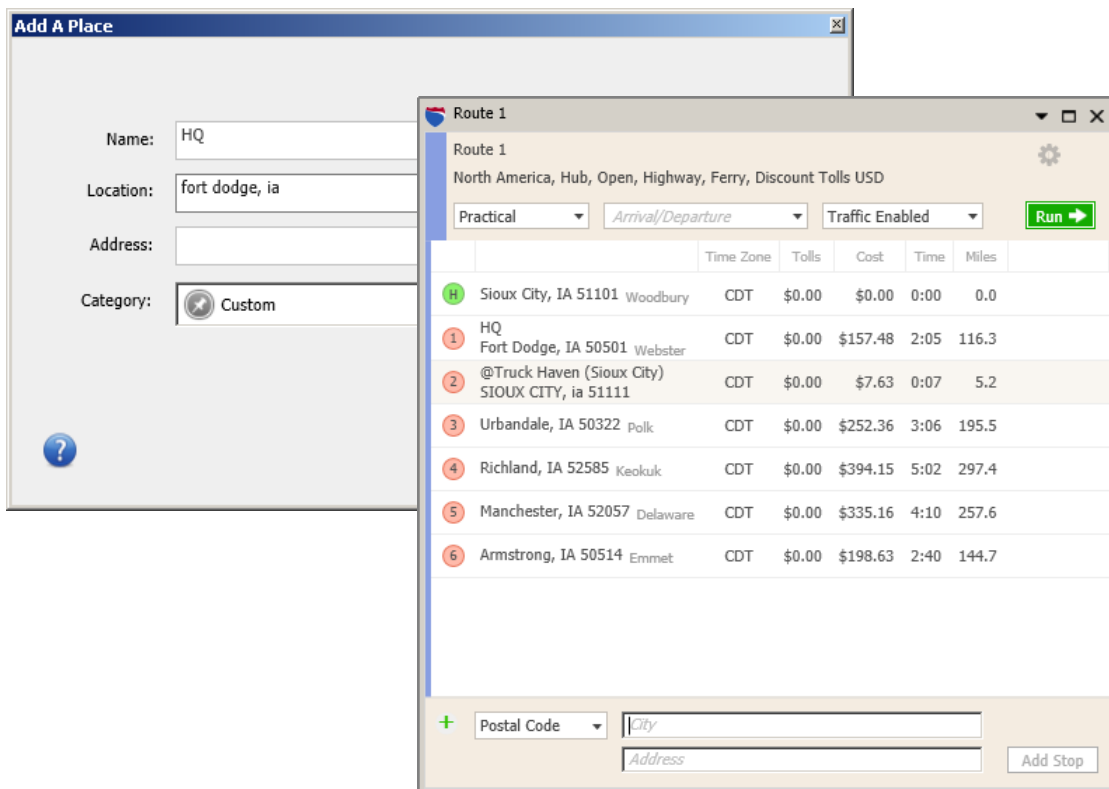
Customize Routes With Road Preferences

You can instruct PC*MILER to avoid or favor selected roads when generating a route. To try this out, let's create a new route from Augusta, ME to Charleston, SC and then designate road preferences around Augusta. Whole roads can be avoided or favored, but in the steps below we'll be picking road segments from the map.

1. Close both open routes (Route tab > General group > *Close All*), then click *New Route* or press **<Ctrl+N>** to open a new route entry window.

2. Enter **Augusta, ME** as the origin, **Oakland, NJ** as a stop, and **Charleston, SC** as the final destination, using any available ZIP codes, then run the route.

3. In the Map tab, select *Frame >* and uncheck *Auto Frame Routes*.

4. Highlight Augusta on the stop list and double-click to zoom into this capital city in Maine on the map. Notice that PC*MILER's route travels on **I 95** (the Maine Turnpike) going south from US 202 out of Augusta.

5. Right click on the map and select *Avoids/Favors > Favor Roads* from the menu (alternatively, you could click the *Favor Roads* button on the Tools toolbar).

6. On **US 201, ME 27** that runs south out of Augusta, click on several different points above Hallowell. Green highlighting will appear, indicating a **favored** road segment. (For now, ignore the Add Comment box that opens.)

7. Now right click on the map again and select *Avoids/Favors > Avoid Roads* (alternatively, you could click the *Avoid Roads* button on the Tools toolbar).

8. On the map, click on **I 95** going south from US 202 to designate it as a road segment to be **avoided**. Red highlighting will indicate an avoided road.
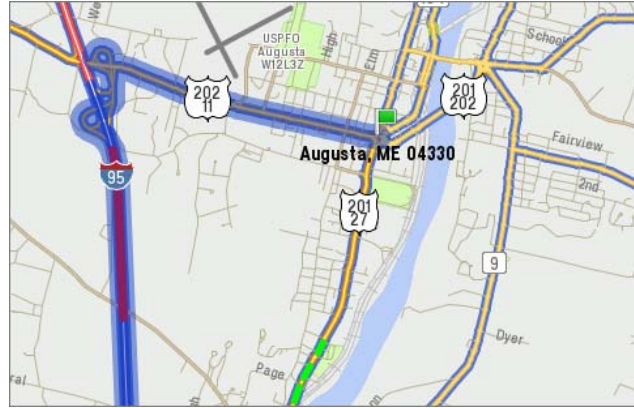
9. A comment can (optionally) be entered for any road preference you create using the Add Comment dialog box that pops up. This comment gets stored in the Avoid/Favor Manager along with the date the preference was created, and the length of the selected road segment. We'll enter "Construction" as a reason for avoiding I-95: type it in the dialog box and then click **OK**.
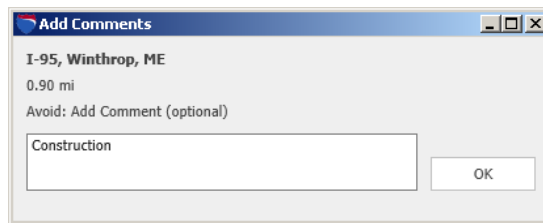
10. To take a quick look at this record in the Avoid/Favor Manager, select the Tools tab > Avoids/Favors group > *Manager* (the **Avoids** tab will be open) then close the window.
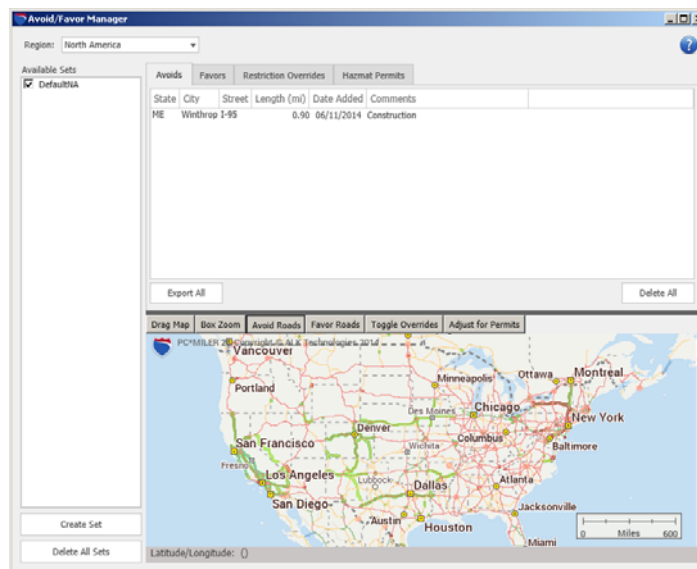
11. Next, open the Route Options dialog (click the gear button in the route window
and select *Options*) and check **Use Custom Roads**, then click **Save**. **This step is crucial to running a new route that includes the road preferences you designated.** If this option isn't turned on, road preferences won't be included in PC*MILER's route calculations.
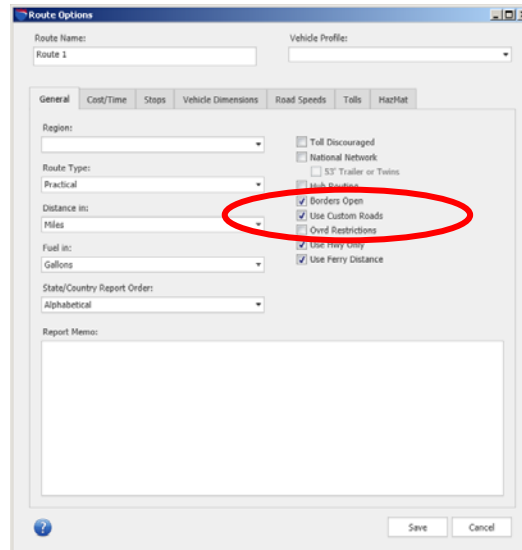
12. The route will rerun automatically when you exit the Route Options dialog – your route now travels on US 201 and avoids the Maine Turnpike.
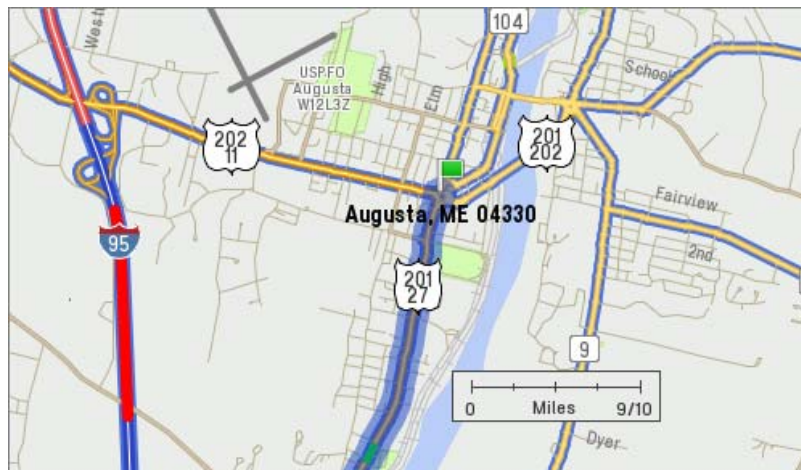
TIP: To clear a road preference, you have two options: you can click again on the road segment to toggle this preference off (for example, with *Avoid Roads* checked in the right mouse menu, click the red highlighting on the map to remove it); or open the Avoid/Favor Manager, highlight the road, and click the "X" on the far right. Use the **Delete All** button to clear all road preferences from the tab.

Customize Routes to Avoid or Favor States

You can instruct PC*MILER to either favor or avoid certain states when generating a route. Let's recalculate our Maine to South Carolina route with its current settings, but this time we'll avoid routing through Massachusetts, and favor routing through Vermont.

1. With the Route 1 window active, press the **<F6>** key or select the gear button > *Reports > State/Country* to view a summary of mileage, times, and costs listed alphabetically by state. Examine the list of states to confirm that Route 1 travels through Massachusetts.

Reports

Route 1 State	✕

☐ Show Print Preview   Print

Stop		Leg Miles	Total Miles	Leg Cost	Total Cost	Leg Hours	Total Hours	Leg Tolls	Total Tolls	Leg Est.GHG	Total Est.GHG	
04330	Augusta, ME, Kennebec	0.0	0.0	0.00	0.00	0:00	0:00	0.00	0.00	0.0	0.0	
07436	Oakland, NJ, Bergen	377.9	377.9	547.12	547.12	6:05	6:05	25.55	25.55	1294.5	1294.5	
29401	Charleston, SC, Charleston	783.9	1161.8	1139.88	1687.00	12:35	18:39	59.09	84.64	2685.8	3980.3	

State/Country	Total	Toll	Free	Ferry	Loaded	Empty	Toll($)	
CT	119.5	0.0	119.5	0.0	119.5	0.0	0.00	
DE	23.7	1.7	22.0	0.0	23.7	0.0	9.00	
MA	97.9	11.2	86.6	0.0	97.9	0.0	1.50	
MD	97.9	3.2	94.7	0.0	97.9	0.0	24.00	
ME	103.8	44.0	59.7	0.0	103.8	0.0	5.60	
NC	181.4	0.0	181.4	0.0	181.4	0.0	0.00	
NH	16.2	12.0	4.2	0.0	16.2	0.0	4.95	
NJ	77.6	0.0	77.6	0.0	77.6	0.0	20.00	
NY	31.0	18.3	12.7	0.0	31.0	0.0	13.50	
PA	57.1	9.4	47.8	0.0	57.1	0.0	6.09	
SC	166.0	0.0	166.0	0.0	166.0	0.0	0.00	
VA	189.7	0.0	189.7	0.0	189.7	0.0	0.00	

2. Now select the Tools tab > Avoids/Favors group > *States/Roads.*

3. **Check** **Enable** in the top left corner of the States/Roads Manager (this <u>must</u> be checked for state preferences to work).

4. In the pick list of states, scroll down and highlight **Massachusetts**. Click the **Avoid** button below to add that state to the States to Avoid list on the left.

5. Now highlight **Vermont** on the pick list of states, and click the **Favor** button to add that state to the States to Favor list on the right.

6. Close the States/Roads Manager window (your changes will be saved).

States/Roads Manager

Region: North America

State Restrictions | Roads Restrictions

☑ Enable

States to Avoid:
Massachusetts

States:
Aguascalientes
Alabama
Alaska
Alberta
Arizona
Arkansas
Baja California Norte
Baja California Sur
Belize
Bermuda
British Columbia
California
Campeche
Chiapas
Chihuahua
Coahuila
Colima
Colorado
Connecticut
Costa Rica
Delaware
District of Columbia
Distrito Federal
Durango
El Salvador
Florida
Georgia
Greenland
Guanajuato
Guatemala
Guerrero
Hawaii
Hidalgo
Honduras

States to Favor:
Vermont

« Avoid   Favor »

Clear All   Clear All

7. A new customized route will automatically generate in the route window, and the State Report will be updated accordingly. In the report, you'll see that PC*MILER has plotted the new route completely outside of Massachusetts, using Vermont and New York State as a byway. Check this new route on the map, too.

Reports

Route 1 State   X

☐ Show Print Preview   Print

Stop		Leg Miles	Total Miles	Leg Cost	Total Cost	Leg Hours	Total Hours	Leg Tolls	Total Tolls	Leg Est.GHG	Total Est.GHG	
04330	Augusta, ME, Kennebec	0.0	0.0	0.00	0.00	0:00	0:00	0.00	0.00	0.0	0.0	
07436	Oakland, NJ, Bergen	516.1	516.1	761.66	761.66	9:05	9:05	20.81	20.81	1768.2	1768.2	
29401	Charleston, SC, Charleston	829.3	1345.4	1340.38	2102.04	13:19	22:25	196.52	217.33	2841.1	4609.3	

State/Country	Total	Toll	Free	Ferry	Loaded	Empty	Toll($)	
DE	16.5	4.1	12.4	0.0	16.5	0.0	34.00	
MD	97.9	3.2	94.7	0.0	97.9	0.0	24.00	
ME	75.1	0.0	75.1	0.0	75.1	0.0	0.00	
NC	181.4	0.0	181.4	0.0	181.4	0.0	0.00	
NH	35.4	0.0	35.4	0.0	35.4	0.0	0.00	
NJ	112.1	88.3	23.8	0.0	112.1	0.0	24.00	
NY	224.0	146.4	77.6	0.0	224.0	0.0	135.33	
SC	166.0	0.0	166.0	0.0	166.0	0.0	0.00	
VA	189.7	0.0	189.7	0.0	189.7	0.0	0.00	
VT	247.2	0.0	247.2	0.0	247.2	0.0	0.00	
US	**1345.4**	**242.1**	**1103.3**	**0.0**	**1345.4**	**0.0**	**217.33**	

**8.** Close the Reports window to continue.

Drag a Route Onto a Different Road

Another way to customize a route is by dragging it onto a new road on the RouteMap. We'll try it with a segment of the Augusta to Charleston route:

1. In the Route 1 window, highlight Charleston on the stop list and press **<F7>**.

2. Enter "**new brunswick, nj**" and click **Add Stop**, then select any postal code.

3. Press **<F10>** to run the new route.

4. Double-click on the New Brunswick stop to zoom to it on the map.
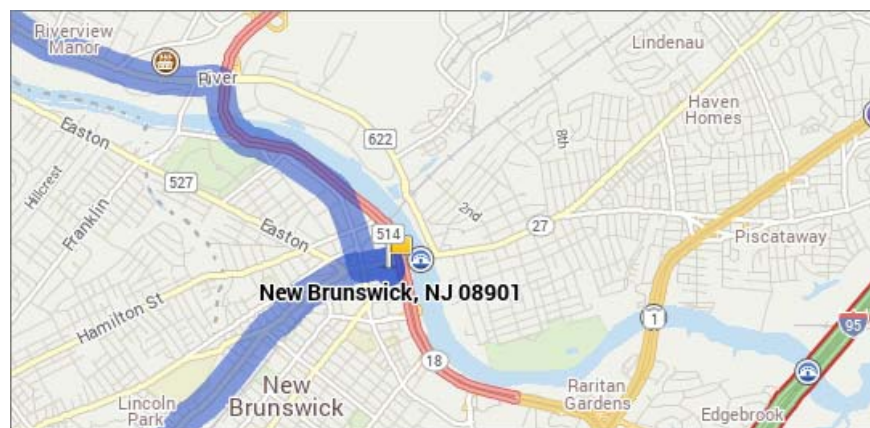
5. Select the Routes tab > Utilities group > *Drag Route.*

6. On the map, place your cursor on the portion of Route 1 that travels on Highway 91 south of New Brunswick, and holding the mouse button down, drag the route west onto Route 27. You'll see Route 27 briefly highlighted in green, then the route will be recalculated with a new waypoint on Route 27. (Waypoints are stops that cause a route to pass through a location that is not treated as a stop in driving directions or reports.)
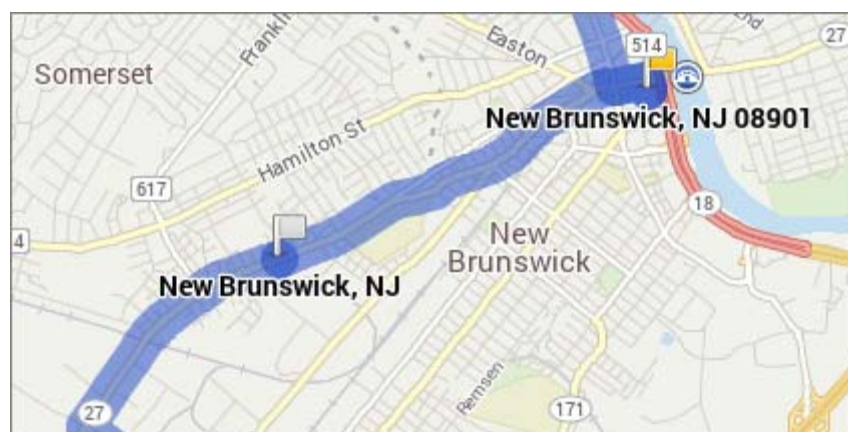
Calculate ETA/ETD With Time-Based Routing & Traffic Data

PC*MILER's time-based routing offers more precise travel time estimates, taking into consideration the time of day, day of the week, and time zones in route calculation and reports. Optionally, real-time and historical traffic data can also be used in route calculations for even more accuracy *(a subscription to PC*MILER|Traffic and an Internet connection is required)*.

At this point in the Tour, we will enter a target arrival time. When the route is run, PC*MILER will calculate the necessary departure time at the origin, and arrival times at two intermediate stops.

1. Minimize Route 1 and press **<CTRL+N>** to open a new route window (Route 2).

2. Open the *Arrival/Departure* drop-down in the route window and select **Arrive By**.

3. Under **Specific Date**, click the calendar and choose any future day in the current month.

4. Under **Local**, set the time to 4:30 PM: first click the pick list to the right and select "**4:00 PM**"; next, click the minutes setting and type "**30**" or use the up and down arrows next to the pick list.

5. Click anywhere in the route window to close the ETA window. If your copy of PC*MILER includes a subscription to PC*MILER|Traffic, select **Traffic Disabled** in the pick list to the right (we'll get back to this feature in a minute). The route window is now ready to calculate a route that arrives at its final destination at 4:30 PM on the selected day:
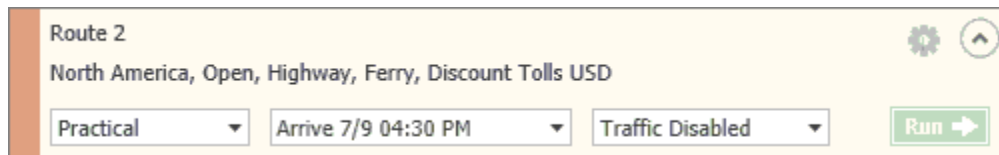
   NOTE: Both the time format (24 hours vs. AM/PM) and the time zone that is used for reporting can be changed in the File > *Application Settings* dialog. The time zone does not affect calculations.

6. Now let's enter an origin, destination, and stops on this route. Enter the following locations in this order: **Elizabeth, NJ**; **Hamilton, NJ**; **Camden, NJ**; and **Pittsburgh, PA** using any ZIP codes.

7. Run the route. In the **ETA/ETD** column (scroll to the right if it's not visible, or float the route window) you can see the approximate time at which the truck would have to depart from Elizabeth to get to Pittsburgh at 4:30. We didn't set the amount of time the truck will spend at each stop or any break time in the

Route Options dialog box (see p. 35-36 for time/cost editing), so this reflects only the driving time.

8. *(If PC*MILER|Traffic and an Internet connection are not available, skip to Step 10.)* Now we'll make one change to this route: select **Traffic Enabled** in the drop-down. The route will recalculate using real time and recent historical traffic pattern data, at the specified time, on the specified day of the week. Using traffic data, the estimated time of departure at the origin in our sample route is 37 minutes earlier for this route.*

9. We won't be using this route again, so close Route 2 (gear button > *Close Route*).

* *PC*MILER default routes, distances and travel times are calculated based on average road speeds by state/province, urban/rural, and class of road. Using traffic data can further enhance the accuracy of driving time estimates.*

Display Traffic Patterns on the Map

(A subscription to PC*MILER|Traffic and an Internet connection is required to use this feature and to complete this part of the Tour. If it is not available, please skip to "Create and Edit a Geofence" on p. 27.)

PC*MILER's traffic display feature lets you visualize historical, typical or real-time traffic patterns in the RouteMap window. We will quickly take a look at historical and real-time traffic patterns in and around the Lincoln and Holland Tunnels that cross under the Hudson River from New Jersey into New York City, New York.

1. Right click the map and select *Traffic…* to open the Traffic Display window.

2. In the Traffic Display window, select **Congestion** and **Historical** to see the day and time options for viewing historical traffic patterns. Select **Tuesday** and move the slider bar to **7:30 AM**.
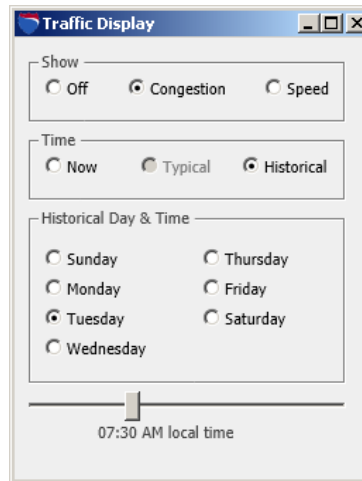
3. Press **<Ctrl+N>** to open a new route window.

4. In the Route 2 window, enter "**new york, ny**" (any ZIP code), then double-click it in the stop list to zoom to New York City on the map. The map displays what traffic congestion has been like historically at 7:30 a.m. on a Tuesday: red, yellow and green highlights indicate heavy, light or no congestion on the roads and tunnels in this area. There is some heavy congestion on the inbound lanes coming up to the Lincoln and Holland Tunnels.

5. Select the Map tab > Customize group > *Legends > Traffic.* The Traffic Congestion legend indicates the meaning of the colors used in the traffic display and the time and day for which historical data is displayed.
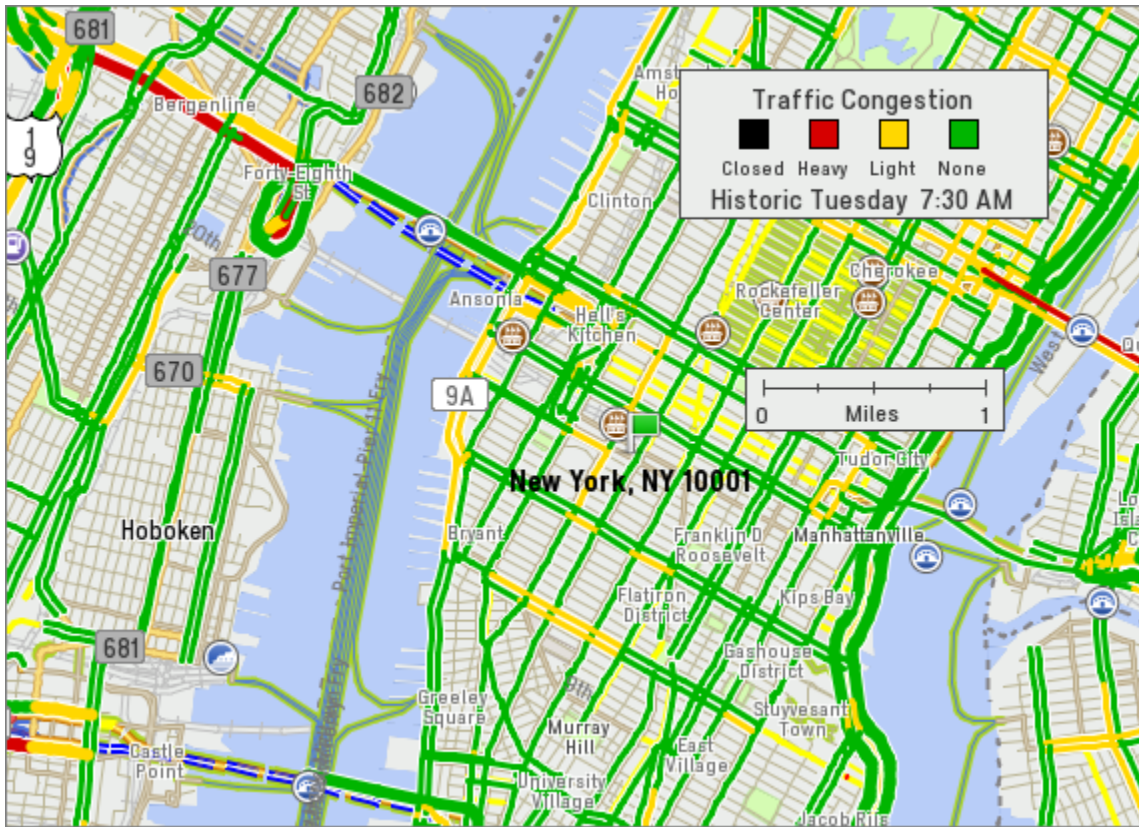
6. In the Traffic Display window, select **Now** to view real-time traffic. Notice that the legend now tells you when the data feed was last updated.
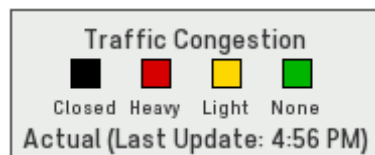
7. Now that you've had a look at the traffic display, we will turn it off. Select **Off** in the Traffic Display window, then close the window.

8. Select the Map tab > Customize > *Legends* and uncheck *Traffic.*

9. Close the Route 2 window.

Create and Edit a Geofence

PC*MILER lets you define geofences on the map. A geofence is a geographic area that will either generate an alert in reports when a route enters it, or will be avoided altogether by the route, or both. We will create a circular geofence around Cleveland, OH and edit its properties.

1. Press **<Ctrl+N>** to open a new route window.

2. Enter "**cleveland, oh**" as a stop (any ZIP code), and then double-click it in the stop list to zoom to this Midwestern city.

3. Select the Tools tab > Geofences group > *Create Geofence > Create Circle*.

4. In the RouteMap window, place the cursor over Cleveland, hold down the mouse button, drag a circle around a portion of the city, then let go. The new geofence will look something like this on the map:
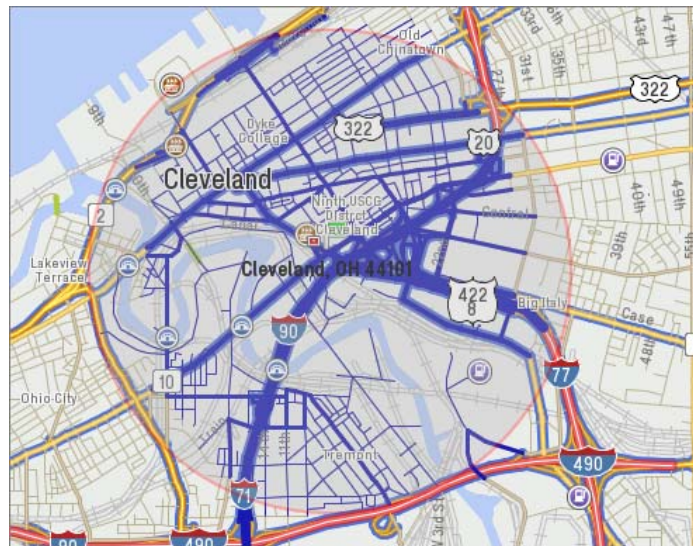
5. Select the Tools tab > Geofences group > *Geofence Options > Manage*.

6. Using this dialog, you can name a geofence and assign it to a geofence set that has customized properties. You'll see the default name assigned to the new geofence, "**Geofence_0**", under **Available Geofences**.

7. Click the default name to highlight it, then click **Edit Geofence Name**, type "**Cleveland**" and click **Apply Name**.

8. Now we will create a set for this geofence to belong to, so that we can edit its colors and properties. Click **Create a New Geofence Set**, then type "**Ohio**" and click **Create Set**.

9. To add the Cleveland geofence to the Ohio set, click on it and then click **Add Selected Geofence To Set**. As part of the set, its properties can now be edited.
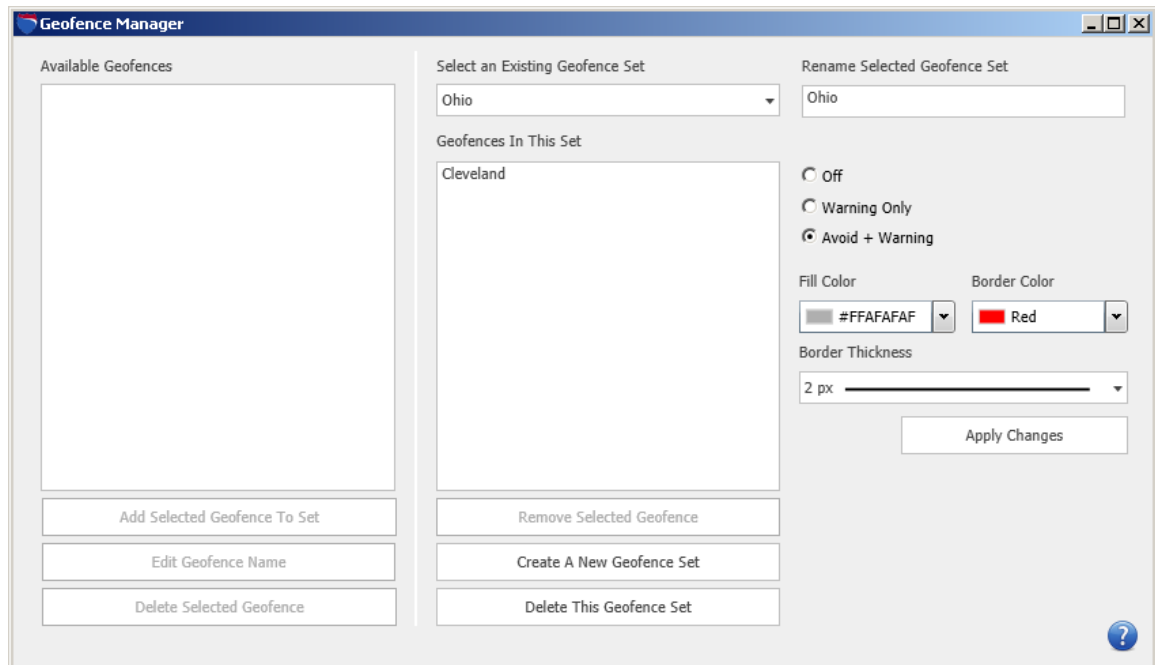
10. To change the fill color of this set, click the down arrow under **Fill Color** and choose a color. We'll choose yellow.

11. We'll leave the border red, but change the border width: under **Border Thickness** select **4 px** from the drop-down.

12. We could change the alert level of this set, but we'll leave it as it is – **Avoid + Warning.** At this level, routes will avoid the geofenced area whenever possible, but if they must enter the area (for example, if a stop is within that area) an alert will appear in reports at the point where the route begins to travel on the road segment that crosses the geofence.

13. Click **Apply Changes** to apply the fill color and border edits, then close the Geofence Manager. You'll see that the appearance of the geofence has changed on the map.
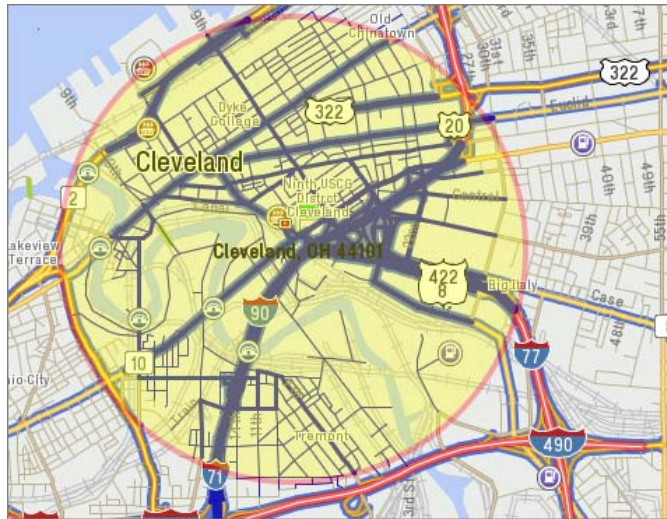
14. Once a geofence has been established, you can do a search to determine if a specified address falls within the geofence. Select the Tools tab > Geofences group > *Geofence Options > Identify.*

15. In the Geofence Identifier, enter **301 West Prospect Avenue, Cleveland, OH** in the **City** and **Address** fields.

16. Under **Search within**, select **A specific geofence set**.

17. In the drop-down list, select **Ohio**, then click **Search**. The correct geofence will appear under **Matching Geofences**:
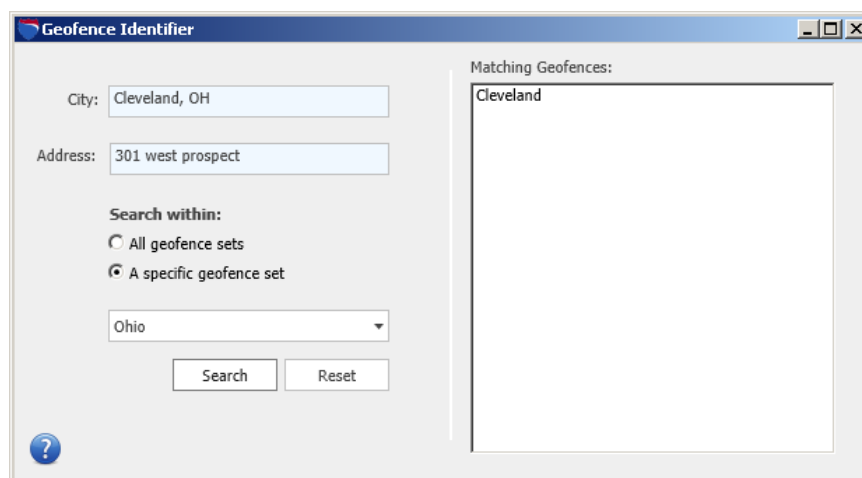
18. Close the Route 2 window to continue.

View and Print a Map

Now we'll return to the Route 1 window, frame it on the map, and print it:

1. Select the Map tab > View group > *Frame* > *Frame One Route* > *Route 1* to frame Route 1 on the map.

2. The route from Augusta to Charleston is now framed and positioned at the center of the RouteMap window. The size of the RouteMap window can be adjusted – you may want to close the Routes pane for a more expanded view of the map, and move or delete legends to create an unobstructed view. In the map shown below, road shields have been hidden using the Map Features dialog (Map tab > Customize group > *Map Features*).

3. To print the map, select the red File application menu > *Print Map*.
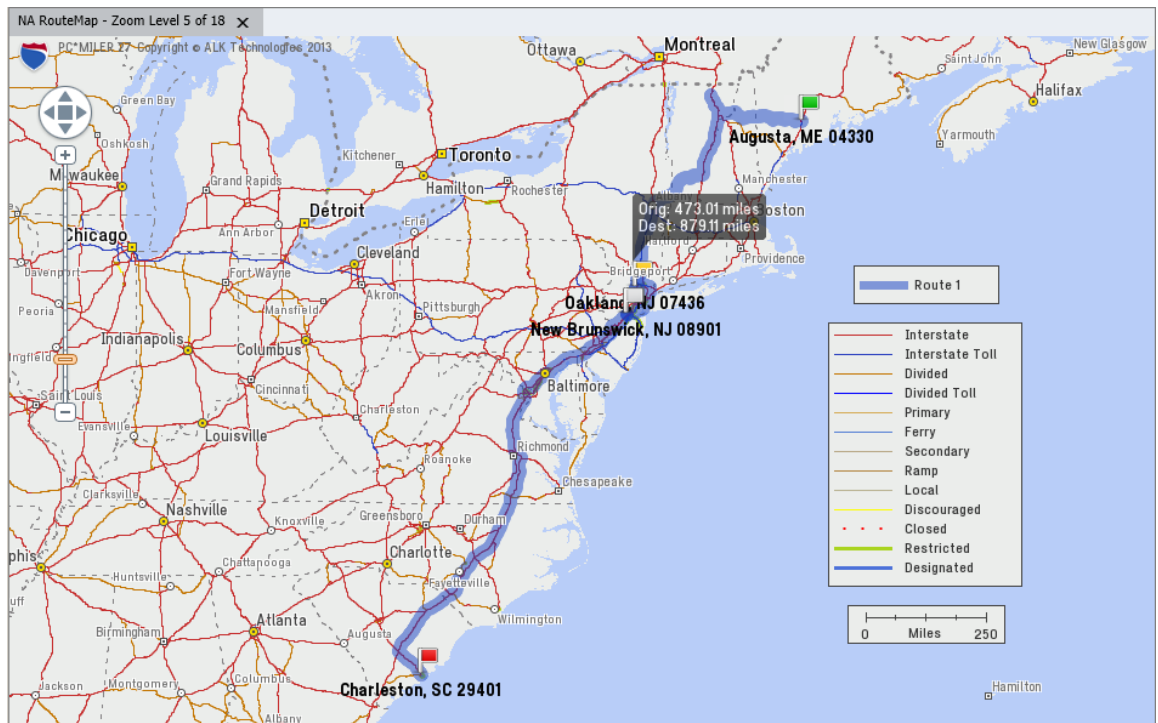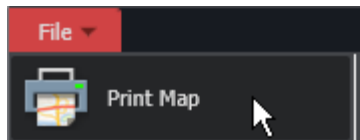
View and Print Driving Directions

Now let's view the driving directions for the Augusta - Charleston route by generating that report:

1. If the Routes pane is hidden at this point, select the Window tab > *Routes Window* to bring it into view, then click on the Route 1 window to activate it.

2. Now select the Routes tab > Route 1 group > *Reports > Driver's* to generate driving directions. The Driver's Report includes turn-by-turn detailed driving directions with cumulative distances and time estimates for each leg of the route.

3. In the Reports pane, check **Show Print Preview**. The Print Preview view will be displayed, along with a tool bar that enables printing, copying and several editing options.
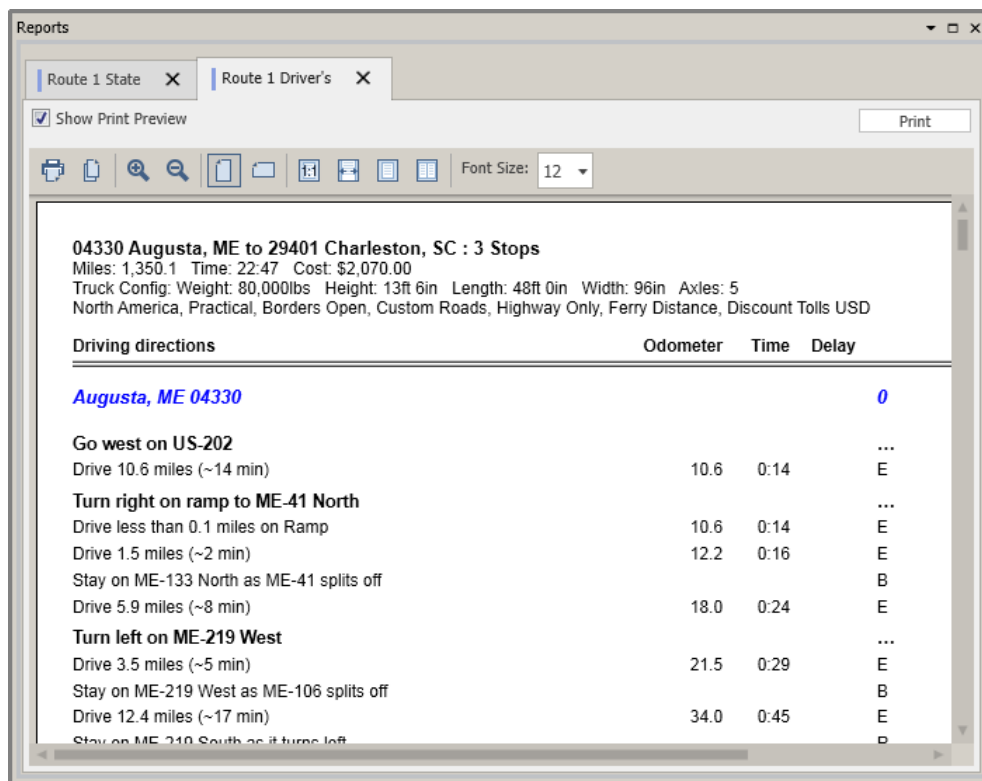
4. PC*MILER also provides a Detailed Route Report that includes interchange information, plus leg and cumulative mileage and time estimates including any designated on/off duty, border wait and break times. To generate this report, select *Detailed* in the *Reports* drop-down, or press the **<F5>** key.

Reports

Route 1 State ✕ | Route 1 Driver's ✕ | Route 1 Detailed ✕

☐ Show Print Preview   Print

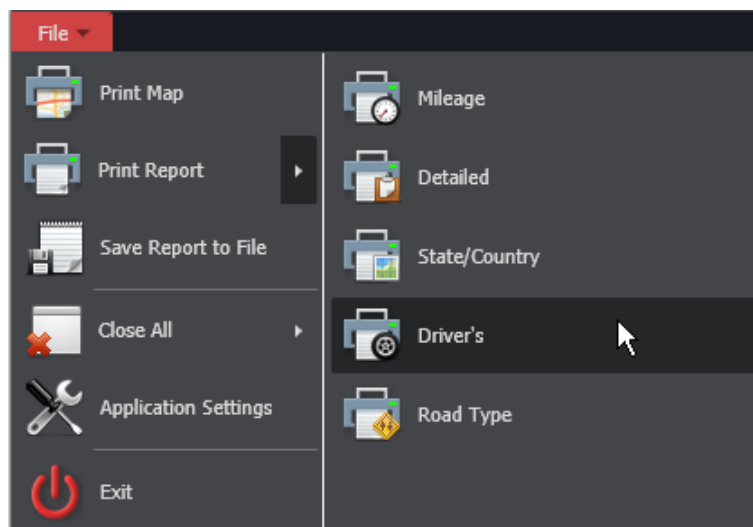| State/Country		Route	Miles	Hours	Interchange	Leg Miles	Leg Hours	Total Miles	Tot Hou
Origin: 04330 Augusta, ME, Kennebec (On-Duty) 0.00									
				0:00					
ME	West	US-202	10.6	0:14	+ US-202 Ramp	10.6	0:14	10.6	0:
ME	Keep right	Ramp	0.0	0:00	+ Ramp ME-41	10.6	0:14	10.6	0:
ME	North	ME-41	1.5	0:02	+ ME-41	12.2	0:16	12.2	0:
ME	North	ME-133	5.9	0:08	+ ME-133 ME-219	18.0	0:24	18.0	0:
ME	West	ME-219	3.5	0:05	+ ME-219	21.5	0:29	21.5	0:
ME	West	ME-219	12.4	0:17	+ ME-219 ME-219	34.0	0:45	34.0	0:
ME	South	ME-219	1.8	0:02	+ ME-219	35.8	0:48	35.8	0:
ME	West	ME-219	11.6	0:15	+ ME-219 ME-26	47.3	1:03	47.3	1:
ME	North	ME-26	15.9	0:18	+ ME-26	63.3	1:22	63.3	1:
ME	West	US-2	11.8	0:14	(to ME/NH State Line)	75.1	1:36	75.1	1:
NH	West	US-2	10.5	0:13	+ US-2 US-2	85.6	1:48	85.6	1:
NH	West	US-2	24.0	0:29	+ US-2	109.5	2:17	109.5	2:
NH	West	US-2	0.9	0:01	(to NH/VT State Line)	110.5	2:19	110.5	2:
VT	West	US-2	24.0	0:27	+ US-2 VT-18	134.4	2:46	134.4	2:
VT	South	VT-18	0.4	0:01	+ VT-18 Ramp	134.8	2:46	134.8	2:
VT	Keep right	Ramp	0.2	0:01	+ Ramp I-93	135.0	2:47	135.0	2:
VT	North	I-93	3.4	0:03	+ I-93 Ramp	138.4	2:50	138.4	2:
VT	Keep right	Ramp	0.2	0:01	+ Ramp I-91	138.7	2:51	138.7	2:
VT	North	I-91	33.0	0:39	+ I-91 Exit 26	171.7	3:31	171.7	3:

5. To print the Driver's Report, select the File application menu > *Print Report > Driver's*.

File
Print Map   Mileage
Print Report   ▶   Detailed
Save Report to File   State/Country
Close All   ▶   Driver's
Application Settings   Road Type
Exit

Save a Route

PC*MILER lets you save routes for future use. We're going to save Route 1 to disk now:

1. With the Route 1 window active, in the Routes tab select *Save > Save Route As* or use the **<Ctrl+S>** keyboard shortcut.

2. In the Save Route window, choose the drive and folder on your hard drive where you want to save the route.

3. Type a file name such as "**AugME-CharSC**" in the **File Name** field. The file extension ".R21" will be added by default to this name.

4. Click **Save** to save Route 1 to your hard drive for future retrieval.
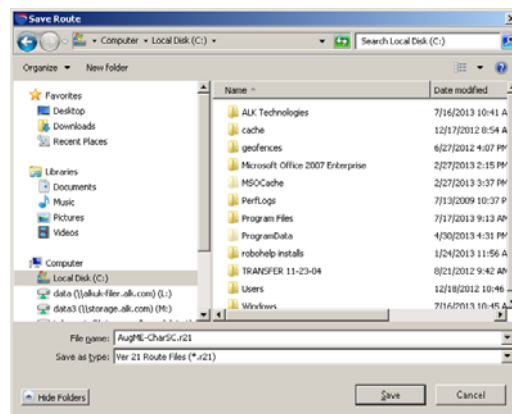
5. Try opening this saved route: close the Route 1 window, then select the Routes tab > General group > *Open,* locate the file and click **Open**.

CONGRATULATIONS, You Have Finished the Guided Tour!

In minutes, you calculated driving directions, maps and mileage for several routes and explored some of the many features that PC*MILER has to offer. Remember, the features covered in this Tour are only the most basic examples of what PC*MILER can provide for all your routing, mileage and mapping needs. See the PC*MILER *User's Guide* or online Help for many additional features and detailed descriptions.

You may want to continue on to the *Appendices* on pages 35-36: **Change the Trip Parameters** and **Importing Custom Places**.

Guided Tour Appendix: Change the Trip Parameters

The routes that you generated in the Guided Tour were mostly calculated using default trip parameters. However, you can choose from a variety of criteria that will give your routes more flexibility and efficiency. Try generating some sample routes with modified parameters, so that you can see for yourself how these changes will affect driving directions and route calculations.

To change a trip's parameters, first select the gear button > *Options* in the Route 1 window. Click on any of the tabs in the Route Options dialog to explore the parameters than can be edited (**General**, **Cost/Time**, **Stops**, **Vehicle Dimensions**, or **Road Speeds**)*. **NOTE:** Alternatively, you could select the Routes tab > General group > *Defaults* to set these same options as defaults for every new route.

* *If your copy of PC*MILER has the PC*MILER|Tolls and/or PC*MILER|HazMat module(s) installed, the* **Tolls** *and/or* **HazMat** *tabs will also be visible.*

General Options:

- Create a trip and assign a unique name to it by typing in the **Route Name** field.

- Enter additional information in the **Report Memo** field that will appear at the top of every report that is generated for this route.

- Change the distance calculations by selecting **Miles** or **Km.**

- Change the route type by selecting **Practical**, **Shortest**, or **Fastest**. Any of these route types can be combined with **Toll Discouraged** and/or **National Network** or **53' Trailer**.

- Allow routing between countries by checking **Borders Open**, or keep routing within a country by deselecting it.

- To generate a route that overrides all height, length, width and weight restrictions: check **Ovrd Restrictions** before running the route.

Cost /Time:

- At the bottom of this tab, assign various costs for **Loaded** and **Empty** miles.

- Under **Break Costs**, you can add a break time and length, and remaining hours of service to facilitate drivers' compliance with DOT Hours of Service Regulations (HOS hours are informational only and do not reflect drive times); **Border Wait** time for expected delays at international borders.

- Under **Other Costs**, enter your own cost estimates for loaded and empty miles.

- Under **Time Costs**, you can enter an arrival or departure day/time instead of entering this parameter in the route window.

Stops:

- For each stop, toggle the trip leg between **Loaded** and **Empty** using the checkbox.

- Assign costs per stop by typing an amount in the **Cost per Stop** field, and designate time spent at the stop in the **Hours per Stop** field. If the duration of the stop is counted as on-duty, check the **On-Duty** check box.

- To assign the same cost and hours per stop to all stops on the route, type them in for the origin then make sure **Use Origin Cost and Hours For All Stops** is checked at the bottom of the tab (it's checked by default).

Vehicle Dimensions:

- Enter vehicle dimensions to generate routing that conforms to the requirements of a vehicle's height, length, width and weight.

- For PC*MILER|Tolls users, entering the number of axles along with vehicle weight may increase the overall accuracy of toll cost reporting.

Road Speeds:

- (Note that these options are not available if the **Use Traffic Data** option is checked in the upper left corner.) To set new road speeds by state, select a state or province from the scrollable pick list and type new speeds in the appropriate fields.

Tolls:

- With the PC*MILER|Tolls module installed, PC*MILER will generate accurate, up-to-date toll costs for any routing type, taking into consideration the indicated toll discount programs.

HazMat:

- With the PC*MILER|HazMat module installed, PC*MILER will generate safe routes in the United States and Canada that are suitable for various types of hazardous materials and dangerous goods.

Click **Save** in the Route Options dialog to save any changes you make. **Cancel** will close the dialog without saving changes. To generate a route with new parameters, click on the **Run** button in the route entry window.