MetroCount®

Traffic Data Specialists
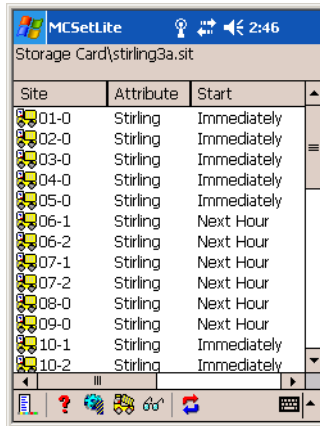
Site Lists

MTE User Manual

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Overview

Site Lists provide an excellent means of managing the process of collecting data. Using the familiar RSU setup dialog box, site setup information can be compiled into associated lists. Field setup then only requires connection to a RSU and selection of a site from a Site List. This removes the need for any manual entry in the field, greatly improving efficiency and accuracy of setup, especially with Pocket PCs.

Site Lists are created using MCSetup, and can be used in either MCSetLite or MCSetup. Site Lists are stored in a simple comma-delimited text file, so they can also be created and edited using a spreadsheet program.
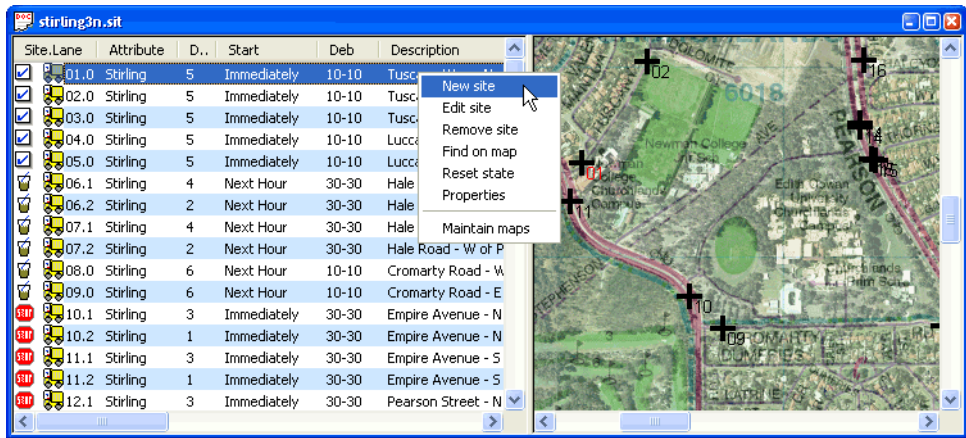

MCSetLite with a Site List loaded

MCSetup supports a few advanced Site List features not supported by MCSetLite, including:

- Maps based on bitmap images, with support for common compressed bitmap images.
- Checklist feature for tracking sites that have been setup, and unloaded.
- Site List usage enforcement, to force RSUs to be setup from a Site List.

Note:
*A Site List window in MCSetup is split into two panes, called the **List** pane and the **Map** pane. Most Site List operations are performed by **right-clicking** in one of the panes. Each pane has a different menu.*

Site List with map in MCSetup - note the right-click menu

Site List Construction

Creating Site Lists

Newly created Site Lists are stored in the folder specified in MCSetup's Preferences. The default location is the **User \ Sites** folder located where MTE is installed.

A single Site List may contain thousands of sites, however small groups of related sites per Site List is much more practical.

To create a new Site List

1. In MCSetup, select **File » New Site List.**
2. In the **New Site List file** box, enter a filename.
3. Click the **Save** button and an empty Site List will be displayed.

   Existing Site Lists are opened by selecting **File » Open sites.**

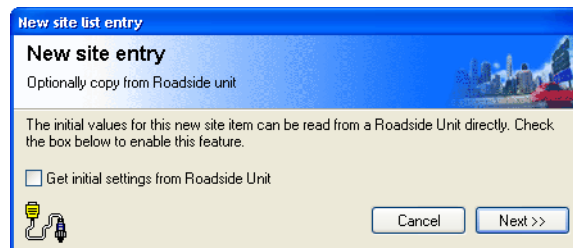   When a Site List is closed, MCSetup will ask to save any changes.

Editing Sites

Adding sites to a Site List uses the same dialog box used for RSU setup. The default setup parameters used for the new site can be copied from an existing site, or copied from the header of a RSU.

To add a new site to a Site List

1. Right-click in a Site List's list pane, and select **New site.**

   Right-click on an existing site to use its parameters as a starting point.

2. To create a new site from a RSU that has been manually setup, check the **Get initial settings from Roadside Unit** option.

Optionally copy setup parameters from a RSU

3. Click the **Next** button to display the setup dialog box.
4. Enter the setup parameters per normal RSU setup.

   Start times such as **Next hour** or **Next day** will be automatically calculated at the time a RSU is setup.

5. When done, click the **OK** button.

   Again per normal setup, each parameter will be range-checked, and warnings displayed if necessary.

   The site's icon indicates the type of Sensor Layout selected.

Icon	Description
�:	Site uses Classifier Layout.
📅	Site uses Count Layout.

To edit an existing site

1. Right-click on an existing site, and select **Edit site.**
2. Edit as required, and click **OK.**

    To display a read-only summary of a site, simply double-click.

Displaying all site parameters

To change the start time for a group of sites

1. In a Site List's list pane, **Shift** or **Ctrl** select a group of sites.
2. Right-click on one of the selected sites, and select **Set times.**
3. Confirm changing the selected sites' start time by clicking **Yes.**
4. In the **Roadside Unit Start Time** dialog box, select one of the automatically calculated start times. Remember, the actual time will not be calculated until a RSU is setup.

Setting the start time for a group of sites

5. Click **OK** to apply the new start times.

Spreadsheet Editing

Site Lists' comma-separated-values **(CSV)** format has been designed to provide maximum

compatibility with spreadsheet programs. Importing, editing and exporting a Site List through a spreadsheet program should be a seamless process.

The first column on each row indicates the row type. **METAMAP** and **MAP** are used for including map files, **DOC** for comments, and **SITE** for each site. For Site Lists created by MCSetup, a comment row is included above the site rows to form the column headings when imported into a spreadsheet.

```
METAMAP,perth.mpz
MAP,Churchlands.mpz
MAP,MtLawley.mpz
DOC,Site,Attrib,Init,Desc,Ln,DirA,DirB,Mode,State,Spac,StrtTm,DebA,DebB,Lat,Long,
SITE,01,Stirling,RPN,Tuscany Way - N of Empire Ave,0,5,0,0,1,1000,0,10,10,-31.924828,115.784872
SITE,02,Stirling,RPN,Tuscany Way - S of Dolomite Court,0,5,0,1,1,1000,0,10,10,-31.922364,115.786673
SITE,03,Stirling,RPN,Tuscany Way - S of Memory Place,0,5,0,2,1,1000,0,10,10,-31.920731,115.786814
```

Site List CSV format

Each column must adhere to the normal restrictions for that parameter. The following table is a quick-reference.

Column	Description
Site & Attrib	Site & Attribute - maximum 20 characters.
Init	Operator Initials - maximum 3 characters.
Desc	Site Description - maximum 70 characters.
Ln	Lane Number - number less than 16.
DirA & DirB	Directions A and B - for Classifier Layout use A only and leave B as zero. • 0 - Unused or unknown. • 1 - North bound, A hit first. • 2 - East bound, A hit first. • 3 - South bound, A hit first. • 4 - West bound, A hit first. • 5 - South bound A>B, North bound B>A. • 6 - West bound A>B, East bound B>A. • 7 - North bound A>B, South bound B>A. • 8 - East bound A>B, West bound B>A.
Mode	Sensor Layout • 0 - Axle sensors - Paired (Class, Speed, Count) • 1 - Axle sensors - Separate (Count) • 2 - Axle sensors - Split (Count) • 3 - Vehicle sensors - Separate (Count)
State	Checklist state (MCSetup only). • 0 - No state. • 1 - Site setup. • 2 - Site unloaded. • 3 - Site unloaded and stopped.
Spac	Spacing - must be entered in millimetres (mm). Range is 200 - 3050mm.
StrtTm	Start Time. • 0 - Start immediately. • 1 - Start next hour.

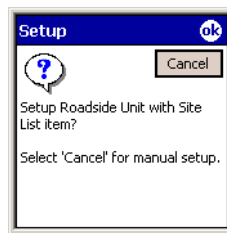| Column	Description
	• 2 - Start next day. • 3 - Start next Monday. • 4 - Start next Saturday.
DebA & DebB	Debounce for A and B Sensor - in milliseconds (ms). Recommended is 30 for single lane, 10 for multiple lanes.
Lat & Long	Latitude and Longitude - in degrees. South and West are negative.

Site List Usage

RSU Setup from a Site List

Using a Site List to setup a RSU is the same as the normal setup process, except the setup parameters are derived from the Site List, rather than manual entry.

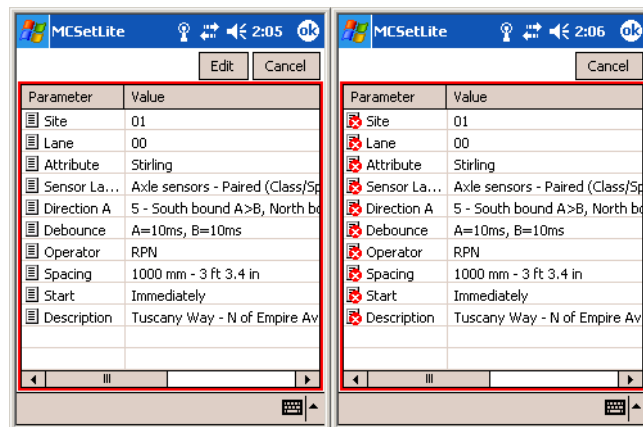### To setup a RSU from a Site List with MCSetLite

1. Open a Site List by selecting **Tools » Open Site List** from MCSetLite's menu button. Browse for and select a Site List, and tap the **OK** button.
2. Select a site by tapping it.
3. With a RSU connected, tap the **Setup** button.
4. Tap **OK** to use the selected site. Tapping **Cancel** will proceed with a normal setup.

Confirming Site List use

5. The standard setup dialog box is now displayed with the setup parameters from the selected site. Edit any parameters if necessary.

   The **Lock Site List** option in MCSetLite's Preferences will prevent editing setup parameters at this point. This feature is to discourage users from changing settings away from those specified in the Site List.

RSU setup from Site List - normal and locked.

6. Tap the **OK** button to proceed with the setup.
7. Check the RSU's status to confirm the setup.

To setup a RSU from a Site List with MCSetup

1. Open a Site List by selecting **File » Open sites** . Browse for and select a Site List, and click the **Open** button.

   MCSetup can have more than one Site List open at the same time.

2. Select a site.

3. With a RSU connected, click the **Setup** button.

4. The selected site's setup parameters will be displayed in a read-only form. Confirm the details and click **OK** to proceed with the setup.

Confirmation of site setup parameters

5. Check the RSU's status to confirm the setup.

RSU Unload from a Site List

When there is a Site List open in MCSetup, the Unload procedure is slightly different. MCSetup will retrieve the RSU's header, and attempt to match it to an item in the currently active Site List. This is to support MCSetup's Data Collection Checklist feature.

To unload data for a site that does not exist in a Site List, firstly close all open Site Lists, and then proceed with the Unload.

To unload data using a Site List

1. Open the Site List that contains the site that the connected RSU was setup with.

2. Click the **Unload** button on MCSetup's main toolbar.

3. MCSetup will locate the site in the Site List and start the Unload procedure.

Maps (MCSetup)

Overview

A map in MCSetup consists of a Map File, which uses a **.mpz** file extension. This file contains a pointer to the location of the map's bitmap image, and additional information about the map, such as latitude and longitude.

A Site List can have several attached maps, with sites distributed across them. Also, a single map can be shared amongst several Site Lists.

Each Site List can also have a map designated as the Metamap. This is usually a low detail map that encompasses each of a group of smaller, high detail maps.

Preparing Maps

Site Lists support maps in the form of bitmap images, including common compressed bitmap formats, such as JPEG. Such images can be sourced from many locations, including local street directories, or exported from a vector-based mapping system.

Suitable bitmap images should contain sufficient detail to allow sites to be placed with reasonable accuracy, based on the screen size where MCSetup will be used. Remember that multiple maps can be associated with each Site List, as well as a low-detail Metamap.

In order to use a bitmap image, the corresponding Map File must first be generated. A Map File contains a pointer to the bitmap image for the map, and the latitude and longitude of the bounding rectangle of the map. The Map File is then attached to Site Lists as required.

Note that when generating a Map File, the latitude of the top and bottom boundaries, and the longitude of the left and right boundaries of the image will be beneficial. These coordinates are used for a number of purposes:
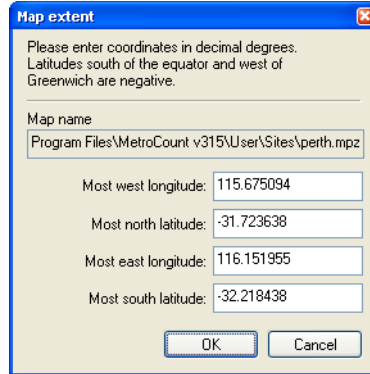
- Assigning coordinates to sites placed on a map.
- Locating sites on a map.
- Displaying the bounding rectangles of each attached map on the Metamap.
- Locating and placing sites using a GPS unit.

If the bounding coordinate information is not available, it is still possible to use maps in Site Lists, however the functionality listed above may be limited. Alternatively, for adjoining maps, simply make up coordinates that reflect the maps' relationships. This will still allow sites to be placed and located on the map.

To generate a Map File

1. For convenience, the images to be used for maps should be copied to the Site List folder specified in MCSetup's Preferences. The default folder is the **User \ Sites** folder located where MTE is installed.
2. In MCSetup, select **File » Create map.**
3. In the **Open map image** dialog box, select an image for the new map. Note the image-type filter at the bottom. When done, click the **OK** button.
4. In the **Map extent** dialog box, enter the coordinates for the bounding lines of the map.

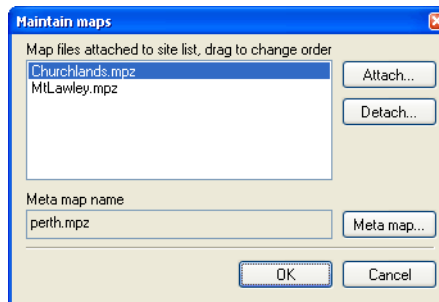   Coordinates south of the equator and west of Greenwich are negative.

Entering the map's bounding latitude and longitude

5. Click the **OK** button. A Map File with the same name as the bitmap image, and a **.mpz** file extension will be created in the Site Lists folder.

Attaching Maps to a Site List

To display maps in a Site List, the respective Map Files must first be attached to the Site List. The **Maintain maps** dialog box is used to manage the list of maps associated with a Site List.

Attaching maps

Note that the items in the list have a descending priority (the top of the list has the highest priority). When locating sites, if the area of two or more maps intersect, the map with the higher priority will be displayed.

To attach maps to a Site List

1. Right-click in the list pane of a Site List, and select **Maintain maps** from the pop-up menu.

2. In the **Maintain maps** dialog box, click the **Attach** button.

3. Select one or more Map Files to attach to this Site List, and click the **OK** button.

4. Reorder the attached maps list as required by dragging the map items.

   Note that maps can be disassociated from the Site List selecting, and clicking the **Detach** button.

5. Click the **OK** button to return to the Site List.

Navigating Maps

When placing sites on a map, the target map will first need to be selected from the list of attached maps, and displayed. Depending on screen size, the target map may need to panned and scrolled to locate the desired position for a site.
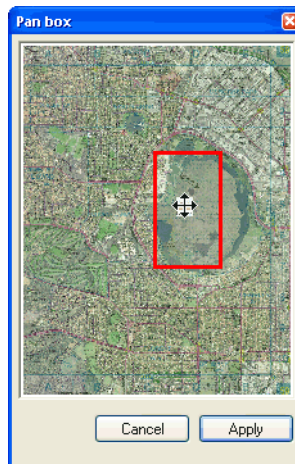
To switch the displayed map

1. Right-click in the list pane of a Site List, and select **Maintain maps** from the pop-up menu.

2. Select the desired map, and click the **OK** button. The selected map will be displayed in the map pane of the Site List.

To pan around a map

1. The **Pan box** dialog box displays a smaller version of the entire map. The rectangle indicates the area of the map currently being displayed. Click and drag this rectangle to display a new area of the map.
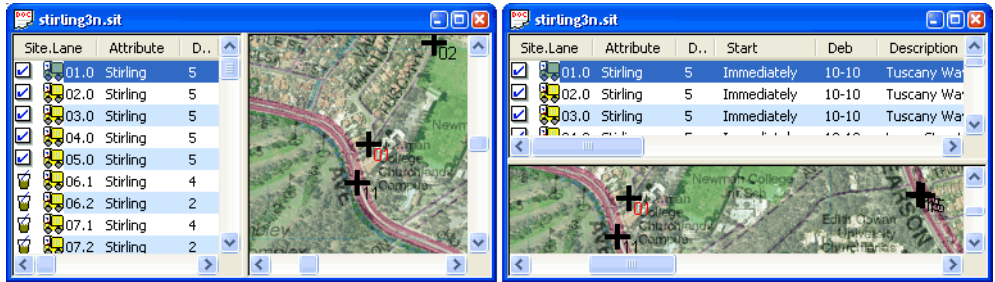

Panning around a map

2. Click the **Apply** button.

To toggle the Site List splitter position

- Select **View » Toggle splitter.** This will toggle the orientation of the splitter bar between the list pane and the map pane.

Optionally toggle the splitter bar position

Using the Metamap

The Metamap is intended to be a map that encompasses the other maps attached to a given Site List. When the Metamap is displayed, the bounding rectangles of each of the attached maps will be overlaid, assuming the correct coordinates have been entered for each map. Detail maps can be selected directly from the Metamap.

To set the Metamap for a Site List

1. Right-click in the list pane of a Site List, and select **Maintain maps** from the pop-up menu.
2. In the **Maintain maps** dialog box, click the **Metamap** button.
3. Select the desired Map File, and click the **Open** button.
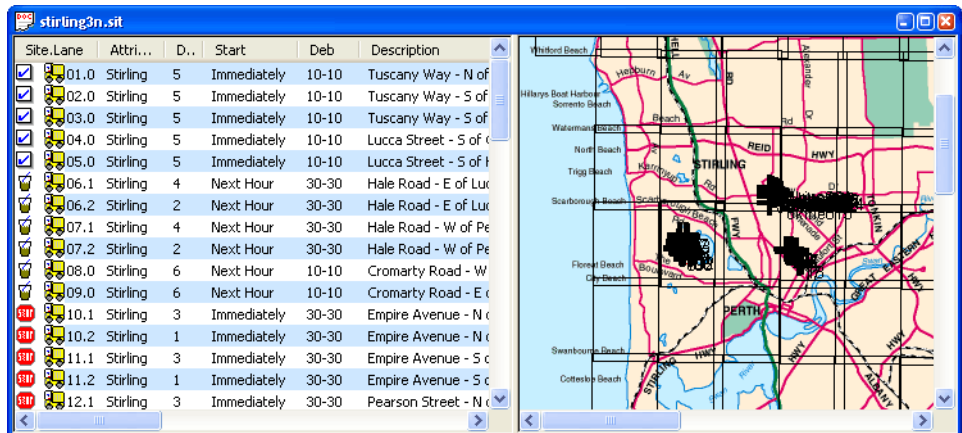4. Click the **OK** button to return to the Site List.

To display the Metamap

- Right-click in the map pane of a Site List, and select **Show metamap** from the pop-up menu. Note that if you a Metamap has not been designated, this option will be unavailable.

To select an attached map from the Metamap

- With the correct latitude and longitude entered for each map, the Metamap will contain black rectangles for the bounding area of each of the attached maps. Right-click within a rectangle, and select **Find detail map** to display that location.

Example Metamap - the bounding rectangles are the attached maps

Placing Sites on a Map

Each site in a Site List has an associated latitude and longitude for placing and locating the site on a map. The location of a site can be set in a number of ways:

- Create a new site directly on a map.
- Drag an existing site onto the map.
- Manually enter a site's coordinates.
- Use a GPS unit to automatically set a site's coordinates.

Using the first two methods described above, the site's coordinates are derived from the map's bounding latitude and longitude coordinates.

Using the last two methods where the coordinates are specified, if one of the attached maps contains these coordinates, MCSetup will automatically display the site on that map.

To create a new site on a map

1. Display the map that will contain the new site, and scroll to the desired location.
2. Place the mouse pointer at the precise location, right-click and select **New site** from the pop-up menu.
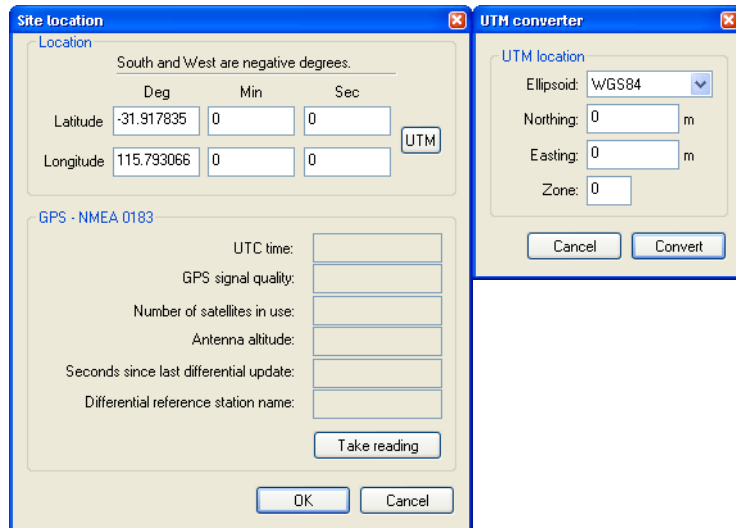3. Follow the usual procedure for adding a site.

To place an existing site on a map

1. Display the map that will contain the existing site, and scroll to the desired location.
2. In the list pane, locate the site to be placed on a map.
3. Click-and-drag the site onto the map, dropping it at the precise location. Note that a group of sites can be selected and dragged to place them at the same location, such as multi-lane sites.
4. Confirm the site location by clicking the **OK** button. The selected site(s) will appear.

To manually enter a site's coordinates

1. While creating or editing a site, click the **Location** button.
2. Enter the coordinates in the **Latitude** and **Longitude** edit boxes. To enter the coordinates using Universal Transverse Mercator, click the **UTM** button, and enter the site coordinates using Eastings, Northings and the UTM zone.

3. Click the **OK** button to update the site's coordinates.

Locating Sites

Using a Site List's attached maps is the simplest method for locating the correct list item for a given site. Once a site has been located on a map, MCSetup can automatically select the corresponding item in the list pane, which can then be easily setup. Conversely, MCSetup can automatically display the map location for a selected site in the list pane.

To toggle the site highlight

- Double-click a map, or right-click a map and select **Flash sites** from the pop-up menu. This will shade the map to make visually finding sites easier.

To locate a site from a map

- Locate a site on a map, right-click on top of the site, and select **Locate site** from the pop-up menu. The corresponding site will be selected in the list pane. Note that if there are multiple sites extremely close together at the point selected, all of those sites will be selected in the list pane.

To locate a site's location on a map

1. In the list pane of a Site List, right-click a site to be located, and select **Find on map** from the pop-up menu. If the site can be found within one of the Site List's attached maps, MCSetup will display that map with the selected site centred in the Map pane. The selected site name will also be displayed in red.

2. MCSetup will automatically enable the site highlight feature that will shade the map. If necessary, double-click the map to turn the shading off.

Data Collection Checklist (MCSetup)

The Checklist feature provides a basic means of tracking the setup and data collection of a group of sites in MCSetup. An icon next to each site indicates the current state of the site. Initially, the Checklist icon will be blank. MCSetup will automatically change this icon when a site is setup, and then when the site has been unloaded, and ultimately stopped.

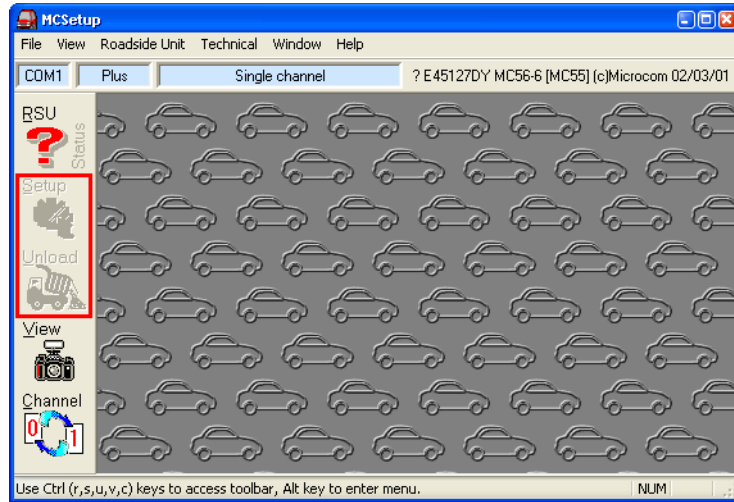| Icon	Description
☑	Site has been setup. (Survey started)
☑	Site has been unloaded, but not stopped. (Mid-survey inspection)
🛑	Site has been unloaded and stopped. (Survey complete)

To reset the Checklist icon for a group of sites

1. In a Site List's list pane, **Shift** or **Ctrl** select a group of sites.
2. Right-click one of the selected sites, and select **Reset states** from the pop-up menu.

Enforce Site List (MCSetup)

The Enforce Site List feature only allows RSUs to be setup from a Site List, by disabling the **Setup** and **Unload** buttons when there is no Site List open. Enforcing the usage of a Site List ensures that a given site exists in a Site List, and that a RSU was setup adhering to that information.
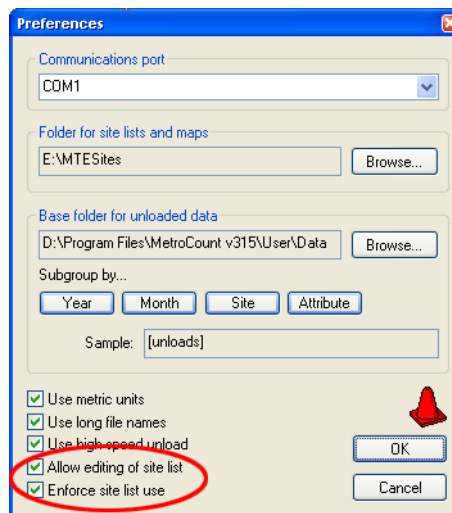
When the Enforce Site List feature is enabled, a Site List must be open to make the Setup button available. When unloading data from a RSU, MCSetup will attempt to match the RSU's header to a site in the currently active Site List. Unloading of the data will only continue if the site is found.

Effect of the Enforce Site List feature

A further option exists to prevent accidental editing of Site Lists. In order to change a Site List this option must be toggled.

Both options can be found in MCSetup's Preferences.

Enforce Site List option in MCSetup

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