

## Localization Editor

The Localization Editor allows you to create a new localization file, Add and/or delete localization points, and turn ON / OFF Vertical and/or Horizontal component control.

A localization file contains the projection coordinates and matching local coordinates for control points in the project. At mines and landfills, one localization file usually covers the mine site and is never changed. For construction companies moving from site to site, localization files do change frequently and are loaded in this routine. This feature allows for loading a pre-existing localization file created by Carlson Grade, Grade Supervisor, SurvCE, Topcon Pocket 3D, or Carlson Field or to create a new localization file by reading the GPS. Before loading or creating a localization file, make sure the correct projection has been selected.

### Create New Localization File:

Press the Add button and select whether the local coordinates will be typed in or if the point is in the current coordinate file. After entering the coordinates or point number, you will be prompted for whether you want to enter the lat/long/height or read it from the GPS. If you select Read from GPS, you will see a window that shows the current status of the GPS.

Make sure the GPS antenna is plumb and in the correct position over the point and press the Read button to start averaging the positions. When finished, the results are shown for acceptance. The positions are shown in the coordinates of the current projection (Local, State Plane or UTM). The items of importance on this screen are the Standard Deviation (Std) values toward the end of each average position line. These numbers indicate errors of the position, so you want to make sure each number is close to zero.

After pressing OK, you will see the new point in the alignment window. You should collect at least three or four known points in this manner. After shooting in your localization points, check the Vertical (VRes) and Horizontal (HRes) Resolution for accuracy. These numbers should be close to 0.

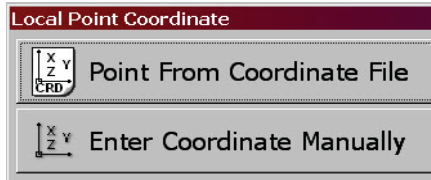
Alignment Editor							
Local Coordinates		Raw Coordinates		Helmert			
P/ID	Use H	Use V	HRes	VRes	Northing	Easting	Elevation
BASE 1 N	N	N	0.11	0.31	4998.99'	1648.06'	1018.02'
CP 18	Y	Y	0.04	-0.03	5004.15'	1650.89'	1018.10'
CP 19	Y	Y	0.04	0.06	4996.50'	1777.84'	1011.36'
CP 20	Y	Y	0.03	-0.07	4997.55'	1574.93'	1022.00'
CP 22	Y	Y	0.01	0.03	5159.11'	1877.43'	1005.07'
CP 23	Y	Y	0.01	0.00	5072.99'	2219.40'	987.59'
CP24	Y	Y	0.03	0.00	4214.85'	2218.99'	980.43'
CP 25	Y	Y	0.05	0.00	4361.63'	1537.54'	1005.44'

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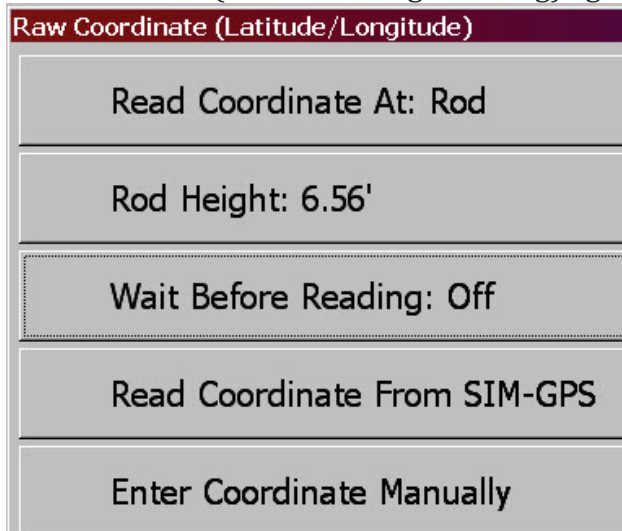
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### *Add / Delete Localization Points:*

By pressing the Add button in the Localization Editor, you can add points manually or choose from a coordinate list.



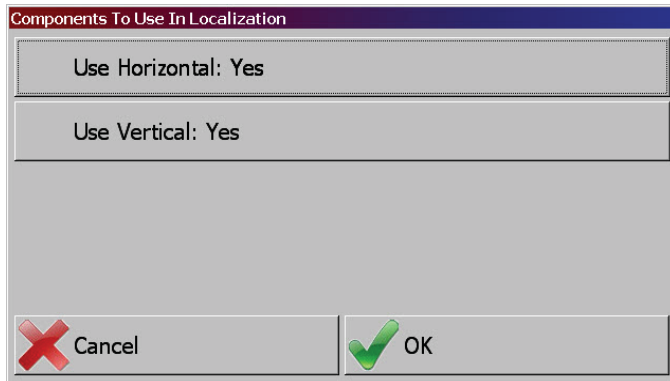
An example scenario: If you notice that you have a bad (busted) control point and need to replace it with the correct coordinates (NEZ), simply highlight the bad point and press delete. Next, press the Add button and type in the correct information or choose the coordinate from a coordinate file. You can then type in the known Raw (Lat, Long, and Ellipsoidal Height) coordinates of that specific point or choose to shoot it (take an average reading) again.



### *On/Off Vertical/Horizontal Component Control:*

To use this option you will need to tap twice on the coordinate of choice then you can turn on/off horizontal or vertical information for this point. This allows you to remove the horizontal or vertical components of your localization points. This is a frequently used feature that enables use of one point for vertical control only (turn off its horizontal component) and other points for horizontal control (turn off their vertical, if appropriate).

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*Discussion of Localization Techniques:*

- ⇒ If you do a base localization by entering latitude and longitude or known coordinates on the designated coordinate system, you do not need to add localization points. A base localization would put you on grid north and grid scale and would work for any new job where you are not trying to match existing coordinates. However, any time you are working on a project that has existing coordinates, you will most likely need to re-localize. Even if that existing job is supposedly on State Plane, UTM or another known coordinate system, the project coordinates often fail to match the grid scale and grid north exactly, requiring a re-localization. While localizing, it is advisable to use at least 3 points for horizontal control and 4 points for vertical control in order to get a measure of residuals. (The program will “best fit” a plane through all activated control points.) A residual is a measure of error pertaining to the best-fit plane. For example, if you are seeing high numbers (numbers greater than one) in your residuals, then the localization is not very accurate and it may indicate the known points need to be setup differently or you need to make sure you measure each known point accurately. Since multiple elevation points may create a slightly tilted plane, some surveyors will verify that the vertical control has low residuals and is accurate using multiple vertical control points, then turn off all but one point and use only the nearest elevation as they progress through the job.
- \* This file is required and can be created within or loaded from an established localization file. It works in conjunction with the configured projection (coordinate system), which may be UTM (by zone) or U.S. State Plane 27 or 83 (by state), for example. You can load a localization file that was made using SiteMetrix, SurvCE, Topcon Pocket 3D or Carlson Field. The localization file is a Carlson-specific format. The localization file can be selected during project creation under Projects/ New Project, or under the Configure Projects menu.
- ⇒ Localization Editor: Localization Editor allows changes to be made to the localization file. Add and/or delete localization points, and turn ON/OFF Vertical and/or Horizontal component control. For example, it is possible to

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use solely the vertical values of a control point if the horizontal is unknown or skewed.

- Test Coordinate System
  - \* Enter known coordinates for a location. (Example Lat 84 °23'12.2432)  
Press calculate to show details and relationship to occupied position.  
These results will help confirm the correct projection is being used.