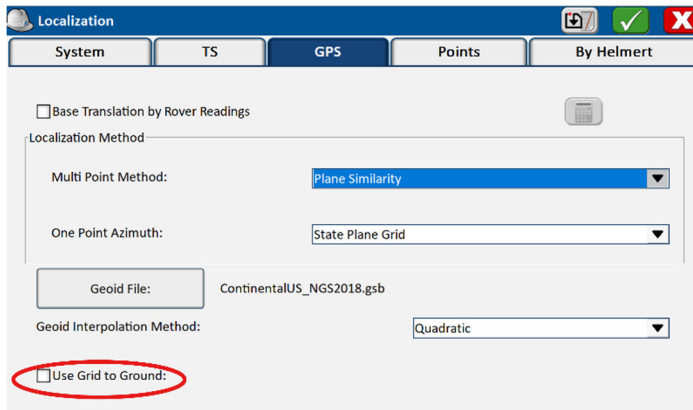


Grid to Ground Survey Best Practices Workflow

By default, with no adjustment to settings GPS, will measure in grid distance because SurvPC requires a State Plane Coordinate Projection (ie.NAD83, etc.) of some type which is a Grid system. In contrast with measuring between two points using a robotic/total station which by default will measure ground distance.

Assumptions:

- Start with a known monument with a published State Plane Coordinate (ie. Section corner, city monument, benchmark)
- These known coordinates may be entered manually into the data collector or transferred digitally from a CAD drawing. This can be done for multiple control monuments.
- To ensure measurements are taken in Ground in SurvPC navigate to the GPS tab by tapping on the equipment tab then the Localization button, and then the GPS tab. Check the “use Grid to Ground” box in the lower left corner. (red circle)



The screenshot shows the 'Localization' screen in the GPS tab. At the top, there are tabs for 'System', 'TS', 'GPS', 'Points', and 'By Helmert'. Below these, there is a 'Base Translation by Rover Readings' checkbox. The 'Localization Method' section includes a 'Multi Point Method' dropdown set to 'Plane Similarity', a 'One Point Azimuth' dropdown set to 'State Plane Grid', a 'Geoid File' field with 'ContinentalUS_NGS2018.gsb', and a 'Geoid Interpolation Method' dropdown set to 'Quadratic'. At the bottom left, the 'Use Grid to Ground' checkbox is circled in red.

This provides two options to either read from GPS or manually enter a known scale factor.

1. Read from GPS

Localization

System TS **GPS** Points By Helmert

☐ Base Translation by Rover Readings

Localization Method


Multi Point Method: Plane Similarity

One Point Azimuth: State Plane Grid

Geoid File: ContinentalUS_NGS2018.gsb

Geoid Interpolation Method: Quadratic

☒ Use Grid to Ground: 1.000000000000



This allows the GPS receiver to use the GNSS to calculate a scale factor for the particular project being measured.

2. Manually enter a known scale factor.

Localization

System TS **GPS** Points By Helmert

☐ Base Translation by Rover Readings

Localization Method


Multi Point Method: Plane Similarity

One Point Azimuth: State Plane Grid

Geoid File: ContinentalUS_NGS2018.gsb

Geoid Interpolation Method: Quadratic

☒ Use Grid to Ground: 1.000000000000



This allows manual entry of a derived scale factor from your own calculations or one provided by a survey control file or drawing.

Unless reliable scale factor data is available/provided it recommended that “Read from GPS” be used.

This workflow allows all future GPS measurements to be taken at true ground distances for this job.