

Permanent GPS Benchmarks
USGS, Cascades Volcano Observatory (CVO)

GPS survey benchmarks are 3 inch brass reference points permanently installed in bedrock and flush with the ground. The existing benchmarks at Mt. St. Helens are periodically occupied during GPS campaigns, EDM surveys and Leveling surveys to measure ground deformational changes on the volcano prior to, during and after an eruption.

During a typical GPS campaign, a surveyor's tripod is set up and centered over the benchmark and mounted with a GPS antenna. A small plastic box containing a GPS receiver and two small batteries and is placed at the base of the tripod, along with a small portable folding 20w solar to charge the batteries and supply power to the GPS receiver during the campaign. The GPS is operated and collects data for 48 to 72 hours and is then removed. There are currently 27 GPS benchmarks within the Mt. St. Helens National Volcanic Monument and on USFS lands adjacent to the monument that CVO has historically occupied during a GPS campaign.



Photograph of a typical GPS or Surveying benchmark.