GASB 34 is a recently established financial reporting standard for state and local governments in the United States. It requires each government to maintain an up-to-date inventory of assets and document their condition.

Situated in Orange County, the city of Garden Grove has a population of nearly 170,000, and covers approximately 30 km (18 square miles), with 120 km (75 miles) of arterial roadway. For Garden Grove, GASB 34 compliance meant mapping all the traffic signs along these roads—in excess of 6,000 signs at more than 4,000 locations.

At this size, the inventory had to be accurate, yet easy to create and maintain. It also had to be compatible with the city’s existing GIS format, and allow the textual data to be augmented with digital photographs.

Project manager George Vail from Parsons Brinckerhoff recommended proven field technology—a Trimble GPS Pathfinder® Pro XR receiver, the TerraSync™ software on a Compaq iPAQ and a digital camera. The Pro XR offers sub-meter accuracy using real-time differential corrections from nearby Coast Guard beacons.

Garden Grove has discovered that using real-time corrections is an invaluable time-saver when pinpointing assets for data maintenance, especially when teamed up with background GIS data such as aerial photographs. And the data is accurate enough to be overlaid on existing GIS and engineering data and maps.

Using the GPS Pathfinder Office software, Vail developed a data dictionary to speed up data collection and improve quality control. Field workers can breeze through the field assessment, using customized lists and data entry fields tailored to Garden Grove’s specific requirements. For example, to specify the sign type, field workers simply pick from a predefined list of types (Guide, Regulatory or Warning). Valuable feedback from field crews has helped to refine the fields and defaults for streamlined data collection.

Each day, the field crews use mission planning in GPS Pathfinder Office to predict when the GPS constellation will be best. To reduce downtime and ensure that they collect only high-quality positional data, crews plan data collection—and their lunch breaks!—around the GPS conditions.
Two people, each equipped with a GPS Pathfinder Pro XR system and a digital camera, collect data simultaneously in the field. Using two teams reduces the inventory time from 27 weeks to just 10. For each sign, the field workers record its GPS location, attributes (such as type, condition and street location), and a digital photograph. The photo is referenced to the feature using a Photo ID attribute.

Back in the office, the data is transferred to GPS Pathfinder Office, where it is processed through quality control procedures to ensure the required accuracy is achieved, and then exported to the GIS format. Next, the data is validated against orthographic aerial photos, road centerlines and curb edges from the GIS. Once verified, the data is merged into the GIS.

Garden Grove has realized more benefits from the inventory than just compliance with GASB 34. The inventory helps the city to identify signs that need to be replaced or repaired, budget and plan for this maintenance and coordinate maintenance work across departments. The data even plays a part in emergency response activities and preparedness. The net results are better asset management, more efficient operation, and, ultimately, greater public safety.

The equipment used on this project includes:

- GPS Pathfinder Pro XR receiver
- TerraSync software
- GPS Pathfinder Office software
- Compaq iPAQ
- Digital camera