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QRS Journal is a periodical publication providing information to our clients, the industry and our employees about QRS services, industry information and personnel.

Points of interest:

- Excellent GPS receivers with real-time submeter accuracy and real-time options
- PoleTrack, Juniper and Trimble are excellent data-gathering software for complete pole and underground inventory
- Complete facility audits of utility and vendors



Lifecycle of a Utility Pole GPS Inventory

The project is called a "**Feeder Audit.**" For each feeder, we are given a complete map set that details pole numbers, device numbers and locations, padmount device numbers, phasing and conductor types. The map sets vary in size (depending on the coverage of the feeder), but may be 40 sheets, or as many as 200 sheets. Working from the maps, we begin at the feeder's substation of origin and work out to the end of the line.

To make the job efficient and manageable, a Trimble GPS unit and a Juniper data logger are used to collect and store all the data. A separate file is made for each day with the Feeder name used as the prefix.

Each data file gets stored in a master project folder created for each feeder. Every pole gets inventoried. A GPS location is taken as are data detail including pole owner, age of pole, height and class. Conductors are included, with type, phase, count, and location of neutral. Any devices on the pole (transformers, fuses, capacitors, etc.) are listed along with their number(s), sizes/ratings, state (open or closed) and phases.

Where devices should have a tag displayed, the tags are checked against the GIS information on the feeder maps. Vendor attachments are also noted, so that any joint use rentals from Telco, CATV, Fiber, or others are sure to be received.

Padmount devices get inventoried too. A GPS location, phase, size, and tag numbers are inspected and detailed. Vaults get GPS-located and their size and phase are also collected. For underground installations, phasing as stated on the feeder maps is assumed to be accurate, unless observed as not accurate where it taps off the overhead facility.



Obviously, the maps are not completely accurate. That is why the project is so important. To the GIS database, missing poles get added, extra ones deleted, phasing is corrected and devices get moved to the correct location.

Additionally, we have the opportunity to report dangerous situations in the power system, if they are visible. Having an accurate, exhaustive GIS database of the distribution system is invaluable to asset management and task planning for line workers.

The method of collecting data has change in recent years.

Today, use of electronic devices, pda's, laptops, GPS units, self-designed units and standard paper (e.g., MS Excel and MS Access) documentation are all acceptable.

How data is delivered or downloaded to the client is the most important factor.

For complete accurate data gathering, **QRS** provides a proven **Quality Assurance** system.

For information and comments

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