UMS Group Inc.
Line and Structure Data Cleanup

OVERVIEW

UMS Group was engaged to perform an audit of the lat/long location of ~100,000 transmission structures on >1,000 circuits.

METHODOLOGY

- An initial data validation step was conducted to isolate data anomalies, e.g. duplicate/missing ID numbers, duplicate lat/long coordinates, and incorrect line names.
- The review/audit process was manual. One T-Line is isolated at a time, and the structures are reviewed through mapping visualization.
- Each line is checked for continuity, i.e. structures follow a logical path, no orphans, no large gaps, sub to sub connection is obvious, etc.
- Major gaps in the line are reviewed in more detail. Oftentimes the gaps will be resolved by a switch in the guest line/structure relationship, or by other lines that connect to the same/relevant substation(s) as the line being reviewed. Other acceptable gaps were where the line obviously crosses a highway, river or valley.
- Where possible, calculated distances from structure to structure were reviewed for each noticeable gap. Structure numbers were also reviewed as a check for those that might deviate from the normal sequence.
- All issues were recorded with notes and screen shots.

DATA UTILIZED

Structure database containing lat/long coordinates, substation database.

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Case Study: Line and Structure Data Cleanup

CHALLENGES

General data quality issues.

SUCCESS

- Successfully flagged issues for the client team to investigate and fix (e.g. missing structures and specific data quality issues)
- Successful in reassuring the client that their structure locations (lat/long coordinates) were generally correct with a high degree of certainty.

Example of the visualization of the Tx structure audit initiative

- *This line would be noted as having an issue. There is a large gap between two structures (2500') that we could not find a logical reason for (i.e. guest line, highway/river crossing), Underground section, etc.*

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