Background
Following a recent acquisition of a major pipeline system, the acquiring pipeline operator was struggling to leverage the associated Geographic Information System (GIS) to conduct mandatory compliance business processes. Data reports from the GIS were often inconsistent with reality on the ground and this quickly resulted in a lack of confidence in subsequent pipeline safety and integrity analyses. Our client wanted to understand the underlying functional problems with options that would permanently resolve the issue and restore confidence in critical pipeline decision making. The client implemented the following steps to address these recommendations:

- Quantify and explain the root causes of inconsistent data reports from the GIS database.
- Benchmark GIS data maturity against other large interstate natural gas pipeline transmission companies.
- Correct the root cause GIS infrastructure problems and track data accuracy progress against established milestones.

Scope
G2 Integrated Solutions, LLC was retained by one of the country's largest natural gas pipeline companies to support their GIS infrastructure improvement project to:

- Perform comprehensive analysis of GIS data versus pipeline records by construction date and operating region.
- Measure GIS data confidence and accuracy against projected risk profiles to prioritize upcoming efforts to correct analysis findings.
- Update and improve critical GIS database infrastructure that supported compliance business processes.

Results
At completion of this project, the client had a GIS database that accurately and consistently matched reality that would:

- Improve the quality of pipeline/facility integrity management analyses;
- Support compliance business processes with current and quality data; and Allow prioritization of capital projects based on threats to the transmission system.
Background
Accurate data is a vital, fundamental component of sound Asset Integrity Management programs. Operators must know the physical attributes and location of their pipelines to accurately perform important functions, such as:

- Identify and evaluate potential risks;
- Schedule pipeline assessments and maintenance;
- Make informed pipeline class and maximum allowable operating pressure (MAOP) determinations; and Perform High Consequence Area (HCA) assessments and develop compliance strategies and implementation plans.

Pipeline owners and operators increasingly recognize the need to improve the accuracy and functionality of their Geographic Information System (GIS) database systems to increase operational efficiencies, and minimize the potential for accidents that could affect safety, the environment, community and regulatory relations, and enterprise value.

Scope
G2 Integrated Solutions was retained by a premier interstate natural gas pipeline owner and operator to:

- Research and resolve extensive pipeline attribute information, including unknown pipe segments, rated and un-rated fittings, and pipeline coatings.
- Perform primary and secondary research, quality control checks, and resolution for over 20,000 unknown values.
- Update the client’s GIS system using a variety of source materials, including:
  - Pressure Tests
  - Process and Instrumentation Diagrams
  - Detailed Drawings
  - Alignment Sheets and Construction Orders
  - Field Books and Survey Books
Results

At the completion of this 12 month task, the client will have a much more accurate and user-friendly GIS Data System that will allow its staff at all levels to:

- Optimize Business Process Objectives;
- Reduce potential safety and environment risks for its entire system;
- Assure compliance with related regulations; and
- Demonstrate itself as a Pipeline Industry leader with proven pipeline data integrity, data services and GIS processes, regulatory and risk management reporting, and compliance.