

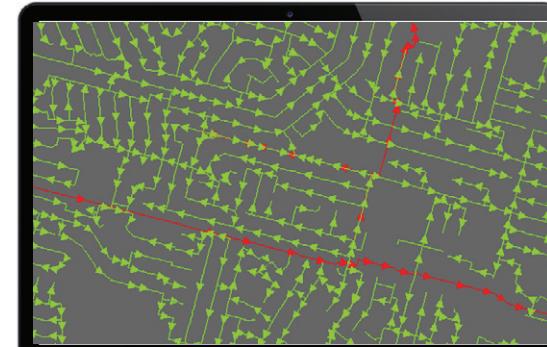
GAS & LIQUID HYDRAULIC SYSTEM MODELING

OUR SOLUTIONS

In today's world, pipeline operators oversee complex systems which demand a high degree of technical expertise and diligence to satisfy customer and business demands. Pipeline operators use hydraulic modeling as a tool to help manage their systems and meet their customers' needs.

Hydraulic modeling can provide operators with quick accurate answers to difficult operational questions, enabling them to optimize their system performance, verify feasibility, anticipate potential threats, maintain aging assets, and prepare for gas consumption growth. Operators must also meet new PHMSA Regulations regarding responses to a rupture under 49 CFR 192, requiring hydraulic modeling.

EN Data Solutions, a sector of ENTRUST Solutions Group, is uniquely positioned to offer our expertise to successfully deploy modeling solutions.

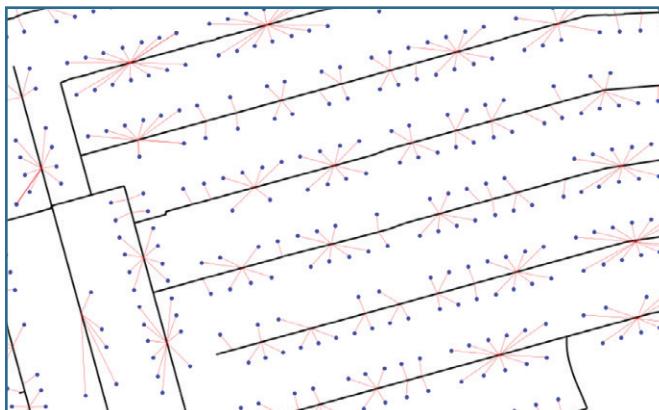


ENTRUST has dedicated hydraulic modeling, GIS, and data analytics experts in model development. The team's technical expertise encompasses several modeling software packages, including *Synergi Gas™*, *PIPESIM™*, *Piper™*, and *ATMOS Simulation (SIM) Suite*. Additionally, our teams have decades of experience across the natural gas and pipeline industry, including design, regulatory, compression, regulation, and more, allowing us to deliver the modeling solution you need.

ENTRUST also has extensive experience developing and using modeling software to simulate, analyze, and optimize our clients' transmission and distribution systems. We integrate different data sources (GIS, CIS, and operational data) to build hydraulic models representative of client systems which can be used to perform further analysis.

ENTRUST's modeling expertise includes:

- Develop/refresh models
- Perform a third-party modeling QA/QC
- Develop loading schemes
- Support system construction
- Analyze operational impacts
- Evaluate system feasibility
- Optimize system performance
- Analyze RNG blending
- Perform population/demand growth forecasting analysis
- Automate modeling scenarios



MODELING SUPPORT EXPERIENCE

Mains Replacement Modeling Support

ENTRUST began a long-term project to support a client's mains replacement efforts using hydraulic modeling. Our modeling support team assessed each replacement project in depth to determine expected operating conditions throughout the construction activities. This assessment allows the construction team to have confidence in their procedures and detect abnormal operating conditions during construction. As part of this support, clients are provided emergency isolation plans optimized with modeling analysis.

Capital Investment Plan

ENTRUST has supported a capital investment plan involving full model development, demand growth forecasting, and minimum system improvement evaluation/prioritization. As a result, we produced a six year capital investment plan for a gas utility. Our team continues to use the model created for the capital investment plan project to perform on demand support as needed.

RNG Blended Stream Analysis

ENTRUST has evaluated the impact of adding a new renewable natural gas supply to a client's distribution system. The analysis included simulating a range of expected gas quality values and identifying which customers are subject to the variable quality stream.