



System Design, Analysis, and Modeling Projects

Reviewed and revised system start-up and shut-down procedures for the City of Vernon, California gas distribution and transmission systems. Completed 2022.

Conducted Lost And Unaccounted For Gas “audit” for the City of Charlottesville, Virginia. Completed 2022.

Developed and calibrated model of Brownsville Energy Authority (Tennessee) natural gas distribution system. Reviewed various supply scenarios for a large manufacturing facility. Completed 2022.

Developed model of the City of Las Cruces, New Mexico natural gas distribution system, reviewed various system changes. Completed 2022.

Prepared construction drawings and bid documents for high-pressure gas line extension and system replacement for the City of Las Cruces, New Mexico natural gas distribution system. Completed 2022.

Updated model of Clarksville, Tennessee natural gas distribution system. Completed 2022.

Developed model of Thomasville, Georgia natural gas distribution system. Completed 2022.

Reviewed, updated, and revised regulatory documents including O&M for Transmission Line requirements. Midwest Energy Inc (Kansas). Completed 2022.

Developed model and reviewed various operating scenarios for Midwest Energy Inc (Kansas) Copeland/Ingalls distribution and transmission system. Completed 2022.

Developed and calibrated a model of the natural gas system for Rocky Mount, North Carolina. Services included development of a base system model and several “calibration” models. Completed 2021.

Developed and calibrated a model of the natural gas system for West Tennessee Public Utility District (Tennessee). Completed 2021.

Developed and calibrated a model of the natural gas system for the City of Coalinga, California. Reviewed various operating/supply scenarios for serving large commercial customer. Completed 2021.

Updated model of natural gas distribution system of City of Enumclaw, Washington. Reviewed operating and supply scenarios for serving a new large commercial customer. Completed 2021.

Prepared construction and bid documents for high-pressure gas line repair and relocation for the City of Walsenburg, Colorado. Completed 2020.



Developed an asbestos handling procedure for the removal and disposal of pipeline coating containing asbestos material for the City of Walsenburg, Colorado. Completed 2020.

Developed a planning model of the natural gas system for Los Alamos County, New Mexico in support of a gas master plan study. Services included development of a system model, development of various planning, operational, and growth scenarios. Completed 2020.

Developed a system model of the natural gas system for Lake Apopka Natural Gas District, Florida. Services included development of a system model and report of results. Completed 2020.

Designed gas line for SDC facility at Pueblo Chemical Depot, Colorado. Services included sizing, plan preparation, design calculations, and preparation of the as-built drawings for the pipeline and regulator station. Completed 2020.

Performed Right-Of-Way document review for a 30-mile high-pressure gas line for the City of Walsenburg, Colorado. Services included researching and documenting various easement, right-of-way, and crossing permit documents. Identified missing documents and undocumented portions of the line. Completed 2019.

Developed a system model of the natural gas system for the City of Clarksville, Tennessee. Services included development of a system model, a report of the results, and training. Completed 2019.

Developed a system model of the natural gas system for the City of Charlottesville, Virginia. Services included development of a system model and report of the results. Completed 2019.

Model and design fuel gas distribution system for BH Orchards. Services included developing a model of the existing and proposed system supplying about 500 agricultural heaters for a large orchard on the Colorado Western Slope, and determining required pipe sizes and supply points. Completed 2018.

Developed a system model for the Redstone Arsenal, Alabama. Services included development of a model of the existing system from GIS data. Ongoing 2018.

Developed a system model for the City of Las Cruces, New Mexico. Services included development of a model of the existing system from GIS and CIS data. Completed 2018.

Updated the system model for the City of Virginia, Minnesota. Services included updating their system model from CAD data. Completed 2018.

Performed a regulatory document review and updated accordingly for Raton Gas Transmission, an interstate pipeline operating in Colorado and New Mexico. Services included the review and updating of all regulatory documents including Emergency Plan, O&M Manual, Public Awareness Program, Operator Qualification Program, Integrity Management Plan, and more. Completed 2018.



Performed a study of system reinforcement options for the City of Trinidad, Colorado. Services included review of various supply locations and interconnections, review of various operating configurations, and the preparation and presentation of the study report. Completed 2017.

Performed a study of supply options for the City of Walsenburg, Colorado. Services included development of a model of the City's existing 33-mile high-pressure supply line, development and analysis of various future development scenarios, review of various supply locations and interconnections, field review of potential pipeline routes, and the preparation of the study report. Completed 2017.

Performed a "due diligence" study of an existing third-party 26-mile pipeline for possible acquisition by the City of Walsenburg, Colorado. Services included review of historical documents, field review of the physical line and right-of-way, develop a hydraulic model of the line and review various operating configurations, and the preparation and presentation of the study report. Completed 2016.

Developed base model of the gas system for the City of Richmond, Virginia. Services included development of a model of the existing system from GIS data. Completed 2016.

Developed base and various planning models of the gas system for the US Marine Corps Recruiting Depot, San Diego, California. Services included development of a model of the existing system from CAD data and development and analysis of various future development scenarios. Completed 2016.

Developed and calibrated a model of the natural gas system for the City of Palo Alto, California. Services included development of a model of the existing system from GIS data and calibration for several peak demand occurrences. Completed 2015.

Developed various planning models of the natural gas system for the City of Enumclaw, Washington in support of a gas master plan study. Services included review and update of existing system model, development of various planning, operational, and growth scenarios. Completed 2015.

Developed a planning model of the natural gas system for the City of Ellensburg, Washington in support of a gas master plan study. Services included review and update of existing system model, development of various planning, operational, and growth scenarios. Completed 2014.

Developed a model of the natural gas system for the City of Trinidad, Colorado. Services included building a base model of the existing system from imported CAD data, model cleanup, and calibration. Development and review of various operating and configuration scenarios in support of an addition of a large commercial CNG fill station. Completed 2014.

Developed a model of the natural gas system for the Village of Morton, Illinois. Services included building a base model of the existing system from imported GIS data, model cleanup, and calibration. Completed 2014.



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Engineering & Software Services

Developed a regulator/relief valve station database for the Minnesota region of CenterPoint Energy. Services included converting existing client database to StationManager, review and cleanup of resulting database, and review of resulting calculations. Completed 2013.

Developed various operating and configuration scenarios for Missouri Gas Pipeline in support of capacity planning studies. Services included review and update of existing system model, development of various planning, operational, and growth scenarios. Completed 2013.

Developed a model of the natural gas system for the City of Charlottesville, Virginia. Services included building a base model of the existing system from imported GIS data, model cleanup, and calibration. Completed 2013.

Developed a model of the natural gas system for the City of Willcox, Arizona. Services included building a base model of the existing system from imported CAD data, model cleanup, and development of models of various conceptual operating configurations. Completed 2012.

Provided various modeling services for a gas gathering system in Oklahoma and Texas for Laredo Petroleum. Services included updating the client's existing model and developing models for review of various operating and system configurations. Completed 2012.

Developed a model of the natural gas system for a state prison complex. Services included building a base model of the existing and proposed system from imported CAD data, model cleanup, and development of models of various conceptual system configurations. Completed 2012.

Developed a model of the natural gas system for the City of Greenwood, South Carolina. Services included building a base model of the system from imported GIS data, model cleanup, and verification. Completed 2011.

Developed a system map and model of the natural gas system for the City of Rangely, Colorado. Services included building a base model of the system from imported CAD and CIS data, model cleanup, and verification. Completed 2011.

Developed a model of the natural gas system for the City of Virginia, Minnesota. Services included building a base model of the system from imported CAD and CIS data, model cleanup, and verification. Ongoing since 2011. (Provide annual model updates through current year.)

Developed a model of the natural gas system for West Point Military Academy, New York. Services included building a base model of the existing system from imported CAD and GIS data, and model cleanup and verification. Completed 2011.



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Engineering & Software Services

Provided various modeling services for the natural gas distribution system for the University of British Columbia, Vancouver, Canada. Services included building a base model of the system from imported CAD and GIS data, calibrating the model, and studying the effect of various additions and configuration changes to the system. Ongoing since 2011. (Provide annual model updates through current year.)

Developed a model of the natural gas system for the City of Rocky Mount, North Carolina. Services included building a base model of the system from imported GIS data, model cleanup, and verification. Completed 2011.

Provided various modeling services for a gas gathering and water recovery system in Wyoming for Double Eagle Petroleum. Services included creating a model of the client's existing gas gathering and water recovery systems and developing models for review of various operating and system configurations. Completed 2011.

Provided various technical services for the design of a propane distribution system for a city development in Jordan. Services included developing models of various system designs, configuration and operating scenarios, and preparation of design documents and drawings. Ongoing since 2010.

Provided various technical services for the replacement of the gas distribution system for the Town of Stromsburg, Nebraska. Services included developing a base model and various system replacement scenarios. Completed 2010.

Provided various modeling services for a 120-well gathering system in Oklahoma for Laredo Petroleum. Services included updating the client's existing model and developing models for review of various operating and system configurations. Completed 2010.

Provided various technical services for the Alaska Gasline Port Authority. Services included preparation of various estimates, studies, and grant applications for proposals to provide natural gas service to the Fairbanks North Star Borough in the interior of Alaska. Completed 2009.

Provided various technical services to the Town of Ignacio, Colorado. Services included the study of various scenarios for replacement of a large portion of the town's distribution system, including system sizing and design, development of replacement phasing plan, preparation of cost estimate, construction plans, specifications, and bid documents. The project consisted of 13,000 feet of 2" and 4" distribution main, 300 services, and one gate station. Ongoing since 2007.

Provided various technical services to the Southern Ute Tribal Authority. Services included system sizing and design, preparation of preliminary construction estimate, preparation of construction and bid documents for main and service renewal of a portion of their distribution system. The project consisted of 3,000 feet of 4" and 2" MDPE main and 50 services. Completed 2008.



Provided various technical services to the Southern Ute Tribal Authority. Services included system sizing and design, preparation of preliminary construction estimate, preparation of construction and bid documents for a supply line to a new gate station, and district regulator station for a new subdivision. The project consisted of 11,000 feet of 6" HDPE main, one gate station, and one district regulator station. Completed 2008.

Provided various technical services to the Southern Ute Tribal Authority. Services included the study of various supply scenarios for a new casino project, including system sizing and design, preparation of preliminary construction estimates, preparation of construction and bid documents, and assisting with purging and start-up activities. The project consisted of 17,000 feet of 6" HDPE main, one gate station, one large customer meter set, and one district regulator station. Completed 2008.

Served as design engineer, as part of a design-build team, for a new supply line for the Pueblo Army Depot, Pueblo, Colorado. Services included system sizing and design, preparation of construction plans and documents. The project consisted of 30,000 feet of 6" HDPE main and one regulator station. Ongoing since 2007.

Updated gas system model for Cheyenne Power Fuel & Light's natural gas distribution system. Services included revision of the existing model to reflect main replacements, new main extensions, and customer changes by incorporating piping and customer data from their GIS and CIS systems. Completed 2007.

Developed gas system model for Cheyenne Power Fuel & Light's natural gas distribution system. Model consisted of 700 miles of main and 32,000 customers. Services included development of a model of their existing system by incorporating piping and customer data from their GIS and CIS systems. Completed 2006.

Developed gas system model and gas system master plan for the City of Mesa, Arizona's natural gas distribution system. Model consisted of 1000 miles of main and 51,200 customers. Services included development of a model of their existing system, development of full build-out models with various configuration and supply scenarios, and incremental models for partial build-out scenarios. Model development included incorporating piping and customer data from their GIS and CIS systems. Completed 2006.

Developed a partial gas system model for the Malmstrom Air Force Base, Montana. Provide capacity information and conceptual design for base redevelopment. Completed 2006.

Designed a replacement gas regulator station for the City of Las Vegas, New Mexico. Services included preparation of construction drawings and specifications, start-up and phasing plans, inspection of construction activities, and preparation of as-built drawings. Completed 2005.

Developed a gas system model for the City of Austin, Minnesota's intermediate pressure natural gas distribution system. Model consisted of 92 miles of main and 6,900 customers. Services included development of an entirely new system model incorporating piping and customer data from their CAD system. Completed 2005.



Designed gas distribution system for 300-lot commercial, residential, and multi-family subdivisions located in the City of Franklin, Tennessee. Services included development of various configurations and supply models consisting of about 13,500 feet of main. Completed 2005.

Performed pipe sizing and layout, developed construction plans and as-built drawings for new system extensions for Kinder Morgan's Glenwood Springs division. The division includes towns and developments within Eagle, Garfield, and Pitkin counties in Colorado. Project involved 122 miles of 2" PE to 8" Steel main, 2,150 services, and 5 regulator stations. Completed 2000 - 2005.

Developed gas system models for Kinder Morgan's Rocky Mountain gas systems. Services included developing models for 11 individual systems covering a total of 34,000 customers and 600 miles of main. Completed 2000 - 2004.

Performed system design and developed construction documents for a new supply line to Evans Army Hospital, Fort Carson, Colorado. Project involved 3,200 ft of 4" PE main, regulator and meter set.

Performed system design and developed construction documents for system extensions to new housing developments at Fort Carson, Colorado. Project involved 8 individual projects consisting of 12 miles of 2" to 6" PE main, 415 services, and 3 regulator stations. Completed 2000 - 2003.

Developed partial gas system model for Warren Air Force Base, Wyoming. Provided capacity information and conceptual design for base redevelopment. Completed 2001.

Updated system model for the City of Winfield, Kansas. Model consisted of 70 miles of main and 4,900 customers. Services included development of an entirely new system model incorporating updated piping and customer data from their GIS and CIS systems. Completed 2001.

Developed a gas system model for Peterson Air Force Base, Colorado. Completed 2001.

Developed a gas system model and long-range plan for the County of Los Alamos, New Mexico. System size 7,200 customers and 100 miles of main. Completed 2000.

Developed a gas system model and long-range plan for the City of Mesa, Arizona. System size 28,000 customers and 750 miles of main. Completed 2000.

Developed meter and regulator station designs for Tasco Engineering. The sets were to be used on a project in central Utah. Completed 1998.

Developed a gathering system model for Barfield Oil. The model was for a 50+ well field in eastern Colorado. Completed 1998.



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Engineering & Software Services

Calibrated gathering system model for Evergreen Operating. The model and operational data was provided by the client for a 200+ well low-pressure field in southern Colorado. Completed 1997.

Developed and calibrated various gathering system models for Pipeline Strategies Inc. Models were for fields in Colorado, Wyoming, and Texas. Completed 1996.

Developed and calibrated distribution system model for the City of Ellensburg, Washington. Model consisted of 57 miles of main and 2,500 customers. Completed 1995.

Performed feasibility analysis for the City of Trinidad, Colorado. Services included preliminary design of new gas systems for five rural areas, estimation of construction and material costs, preparation of a cost of service and cost-benefit analysis. Completed 1995.

Developed and calibrated distribution system model for the City of Palo Alto, California. Model consisted of 169 miles of main and 23,000 customers. Completed 1994.

Developed preliminary design and prepared cost of service and cost-benefit analysis for new distribution and transmission system for the City of Cripple Creek, Colorado. Completed 1994.

Prepared cost of service and cost-benefit analysis for new distribution and transmission system for various communities near Bailey, Colorado. Completed 1994.

Developed and calibrated system model for the City of Falls City, Nebraska. Model consisted of 35 miles of main and 2,300 customers. Services included development of a replacement phasing plan and isolation valve plan. Completed 1993.

Developed preliminary design for a new distribution system for Montana-Dakota Utilities in Pierre, South Dakota. Completed 1992.

Developed a system model of 4" and larger mains for the Southern Union Gas Company's Austin, Texas transmission and distribution system. Model consisted of 455 miles of main and 133,000 customers. Completed 1992.

Developed and calibrated system model for the City of Winfield, Kansas. Model consisted of 70 miles of main and 4,900 customers. Services included development of a replacement phasing plan and isolation valve plan. Completed 1992.

Developed distribution and transmission system design for the rural communities of Levan, Mona, and Nephi, Utah. Services included route selection, system sizing, and estimation of construction and material costs. Completed 1991.