Kleinfelder is recognized as one of the nation’s leading consultants in trenchless technology methods and applications for oil and gas, water, sewage, and drainage systems. Trenchless technologies are highly useful for installing new piping systems, repairing existing pipelines, and renewing existing underground infrastructure. Use of trenchless technologies minimizes surface disruptions, limits damage to the environment and existing improvements, helps protect endangered species and their habitats, and often alleviates permitting concerns in protected areas.

Services within our practice include:

- Condition Assessment of Pipelines
- Design and Product Evaluations
- New Pipeline Installations
- Renewal of Existing Infrastructure
- Repair of Existing Pipelines
- Protective Coatings and Lining Systems
- Geotechnical Investigations
- Construction Services

Our innovative, efficient, and cost-effective solutions help address the needs of various utility companies and municipal water and sewer departments or districts.

CONDITION ASSESSMENT OF PIPELINES
Condition assessments or surveys determine the existing condition of a pipelines and the extent of required renewal. Kleinfelder performs physical inspections and coordinates with outside contractors with specialized equipment as needed to perform condition assessments.

- Man entry and remote video H-D, sonar, laser, and LIDAR technologies
- Pipeline, manhole, and structure structural condition determination
- Determination of flow bypassing requirements
- Evaluation of site/project constraints for applying trenchless technologies

DESIGN AND PRODUCT EVALUATIONS
Numerous trenchless systems and products are on the market today and new systems are constantly introduced. Kleinfelder maintains a library of these systems containing product literature, design criteria, advantages/disadvantages, installations, test documentation, costs, and system limitations.

- Trenchless systems design for new and renewal applications
- Small to large diameter pipeline evaluation and new installation applications
- Understanding of design guidelines and system/product limitations
- Development of design criteria and performance standards for trenchless technologies
- Independent review and evaluation of manufactured or product systems
- Value engineering services
NEW PIPELINE INSTALLATIONS

New pipeline installations using trenchless technologies is a growing field where Kleinfelder stands at the forefront, using these technologies to benefit clients.

- Pipe jacking
- Auger boring
- Guided and pilot tube auger boring
- Horizontal directional drilling
- Pipe ramming
- Microtunneling
- Tunneling

RENEWAL OF EXISTING INFRASTRUCTURE

Kleinfelder has extensive experience in design and construction of renewal systems for existing infrastructure. In 1995, Kleinfelder received the Trenchless Project of the Year Award from Trenchless Technology magazine for the largest sewer rehabilitation project undertaken in the U.S for the MWRA Wellesley Extension Relief Sewer project just west of Boston, MA.

- Cured-in-place pipelining
- Sliplining
- Swagelining
- Pipe bursting
- Fold-and-formed sliplining
- Service lateral lining
- Test verification

Traditional renewal systems may not be available or warranted for a particular application, such as for manholes and flow diversion structures. Kleinfelder has extensive experience in using protective coatings and lining systems and determining their appropriateness for these applications. Kleinfelder staff has served on a national panel of experts in assessing renewal needs as part of a large metropolitan area wastewater program.

- Product evaluation
- Design, application, inspection, testing
- Pipelines, manholes, structures
- New installations and renewal applications

Our experts in pipe lining technologies assisted with the preparation of the ACSE manual of practice for the design of gravity pipelines due to be published in late 2016 or early 2017.

REPAIR OF EXISTING PIPELINES

In many cases, completely renewing an entire pipeline is unnecessary. Our engineers help clients save money through knowledge of other systems pertaining to point or sectional repairs.

- Joint sealing and chemical grouting
- Point repairs
- Sectional repairs
MANHOLE RENEWAL
Manholes also deteriorate. A condition survey may indicate different systems to address those conditions.
• Structural systems
• Nonstructural lining systems
• Infiltration reduction measures

GEOTECHNICAL INVESTIGATIONS
Kleinfelder is a national leader in geotechnical investigations for pipeline and trenchless construction applications due to our experience, multiple office locations throughout the US and Canada, and ability to provide local service to our clients.
• Extensive local knowledge of geologic formations and conditions that affect selection of trenchless construction methods
• Exploration methods include geotechnical borings, cone penetration test soundings, test pits, and surface and down-hole geophysical surveys
• Trenchless method feasibility studies
• Geotechnical engineering assistance with trenchless crossing design
• Experience with geotechnical data, interpretive and baseline reports for design of jack and bore, guided auger boring, pipe ramming, HDD, microtunneling, and 2-pass tunneling projects

CONSTRUCTION SERVICES
Kleinfelder provides construction support for its clients and design teams throughout the US and Canada. We provide quality control observation and testing of soils, pipelines, and construction materials for both new installations and rehabilitation/renewal work. Our construction support staff includes resident project representatives, construction managers, and field technicians that are experienced with pipeline installation and renewal projects as well as trenchless construction methods.
• Construction management and administration
• Shop drawing review
• Review and response to requests for information
• Change order and claim review and processing
• Site observation and monitoring
• Testing verification
• Post construction quality review
• Record drawing preparation
• Project close out