

Condition Assessment and Rehabilitation Services

The Condition Assessment and Rehabilitation Services core technology under the Conveyance & Storage Global Service Team offers advanced inspection, assessment, and rehabilitation services that help our clients address aging and damaged infrastructure by determining its condition and evaluating the need for, and selection of the most cost-effective repair, rehabilitation, and replacement solutions.

Water managers face complex challenges related to population growth, increasing water supply uncertainty, climate change, regulatory changes, and increasing demand for integrated watershed solutions.

Our vision is to lead the development and implementation of fully integrated solutions for water cycle management, providing sustainable water supplies for people and the environment.

CH2M HILL's Conveyance and Storage Infrastructure Services include six core technologies— **Wastewater Collection and Wet Weather; Tunnels & Trenchless; Water Distribution; Conveyance Design; Condition Assessment and Rehabilitation; and Dams and Levees.**

Condition Assessment and Rehabilitation Services (CARS)

includes:

- Planning effective inspection and data handling approaches
- Analyzing data and information to determine condition status
- Selecting and implementing rehabilitation technology

Our broad understanding of the tools and applications for infrastructure assessment helps us determine the most cost effective, long-term solution that produces the least level-of-service disruptions to our clients.

CARS experts know how to apply their knowledge and experience to each unique infrastructure challenge, regardless how large or small the project.

Condition Assessments

Condition assessments provide key infrastructure performance information that enables us to determine the asset's remaining useful life; whether more advanced inspection analysis is needed; or whether immediate corrective action is needed to avoid catastrophic failure.

Our inspections and assessments help restore and improve conveyance systems and transmission systems for wastewater, stormwater, and water systems around the world.



A force main coupon is used to assess this damaged pipe's integrity and the extent of necessary repairs

Service offerings range widely and can include activities such as:

- Short-term and long-term flow and rainfall monitoring
- CSO and I/I programs
- I/I quantification and prioritization
- Asset location, identification and inventory mapping
- Manhole, pipe, and pump station inspections
- Condition and predictive scoring
- SSES evaluations
- Corrosion monitoring and analysis
- Large diameter gravity analysis
- Pressure pipe analyses
- Condition assessment data collection protocols, work order decision logic, and systems integration support
- Condition assessment training
- Asset management condition scoring, remaining life, and lifecycle cost analyses

Rehabilitation Services

CH2M HILL CARS is a leader in the application of rehabilitation technologies that assist in overcoming service challenges and renew and rehabilitate deteriorated buried infrastructure.

Trenchless rehabilitation techniques help to preclude or minimize roadway and railway traffic effects and business and social disruptions. They can also help avoid negative effects on rivers, lakes, wetlands, sensitive wildlife habitats, aesthetic values, historic and archaeological sites, and other sensitive and valuable resources.

Perhaps just as important, trenchless technologies can be more cost-effective than open-trench methods of construction and replacement of subsurface utilities.

Service offerings range and include activities such as:

- Rehabilitation alternative evaluation and design
- Trenchless technology development support
- Technical and performance specifications review and updates
- Life-cycle cost-based rehabilitation recommendations

Field Testing Services

CH2M HILL offers clients in-house field services and equipment, as well as access to experts in our construction and operations business groups. The following types of integrated field testing services and tools include:

- Manhole inspections
- CCTV and smoke and dye testing
- Zoom camera
- Flow monitoring
- Hydraulic grade line testing
- Pump capacity/efficiency curve testing
- C-factor testing
- Fire hydrant flow testing
- District diurnal flow testing
- Pressure transient testing

Conveyance Industry Leadership

CH2M HILL's CARS staff is active in every major U.S. professional organization through committee work and authoring technical papers at national and regional conferences and workshops.

We have also contributed to a number of industry-leading infrastructure publications such as the WEF's *Guide to Managing Peak*

Wet Weather Flows; ASCE *Journal of Pipeline System Engineering and Practice*; WEF's *Methods of Cost-Effective Rehabilitation of Private Lateral Sewers*; ASCE MOP 92 *Manhole Inspection and Rehabilitation*; and WEF MOP FD-6 *Existing Sewer Evaluation and Rehabilitation*.



Advanced petrography testing on core samples is often used to determine the interface boundary between good and poor concrete



Trenchless technologies re-establish the asset's useful service life and help manage overall installation costs

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