REGIONAL LEADERSHIP BRIEFING | CARIBBEAN

Reliable water begins with a network that holds

A country-neutral sales presentation speech for water utilities, ministries of works, engineers, procurement leaders and public decision-makers

THE MHE PROPOSITION

Condition-led water-main replacement, HDPE systems, HDD where the corridor supports it, open-cut where it is the sounder choice, fusion quality controls, approved connection methods, field guidance, training and documented handover.

How to use this regional copy

Caribbean utilities do not share one network condition, water balance, legal framework or risk profile. This briefing uses regional evidence and a common infrastructure analogy. This is a country-neutral regional discussion copy, not a country-specific diagnosis. A local annex can add verified asset data, adopted standards, procurement route and contact details; no country-specific baseline is implied here.

Suggested delivery: 12–15 minutes with pauses for evidence and discussion.

Opening speech

Good morning. Thank you for the opportunity to discuss a service that every household, school, hospital, business and public institution depends on: reliable water at the tap. A water treatment plant can do its job and still leave customers with intermittent service if the buried network loses water, loses pressure, breaks repeatedly or cannot be isolated and repaired quickly. The public experiences the whole system, from source to tap.

Across the Caribbean, utilities work under different conditions. Some manage water scarcity. Some face intense rainfall, flooding, hurricanes or drought. Many must balance network losses, limited investment, ageing assets and the cost of maintaining dependable service. Regional studies describe these pressures, while also warning that utility performance and available data vary. That is why each replacement plan must begin with local evidence. [1–4]

> *Today's question is practical: which sections should be replaced first, how will each job protect service and road access, and what will the utility measure after the work?*

The distribution problems, and the response after each one

1 | Corrosion, encrustation and repeat breaks

THE PROBLEM

Older metallic mains can corrode. Scale and deposits can restrict flow, while weakened pipe walls and joints can contribute to leaks and breaks. A discoloured tap or a corroded pipe does not by itself prove that water caused illness. Corrosion may release metals under particular water-chemistry and material conditions, and pressure loss or a break can create a contamination pathway where a cross-connection or other hazard exists. Utilities need sampling, incident investigation and public-health procedures to establish actual risk. [5, 8]

MHE RESPONSE

Build a condition-led replacement list from pipe age and material, break history, pressure complaints, water-quality records, consequence of failure and field inspection. Prioritize high-consequence sections and confirm the hydraulic design, potable-water approvals and locally adopted standards. Where suitable, potable-water-rated HDPE can avoid ferrous corrosion; joint performance depends on compatible products, qualified operators, approved procedures and documented inspection. [9]

2 | Water loss, energy use and emergency spending

THE PROBLEM

Leaks and main breaks can waste treated water and pumping energy, reduce revenue and consume crew time that could go to planned work. The IDB’s 2021 Caribbean Water Study identifies non-revenue water as a major challenge among the selected utilities it benchmarked. Its reported sample is not a claim about every Caribbean utility, and non-revenue water is not identical to physical pipe leakage. [1]

MHE RESPONSE

Pair priority replacement with utility-led district or corridor measurement. Record a baseline and method, then compare flow, pressure, repeat breaks, repair hours and service interruptions after construction. A replacement project should report verified outcomes, not only metres installed. The utility retains responsibility for water balance, customer metering and official performance reporting.

SAY THIS

> *“A repair can restore service today. Planned replacement targets the pipe sections that keep sending crews back to the same street. The test is whether repeat failures, water loss and outage time fall after the work.”*

Service reliability and public confidence

3. Intermittent supply and unstable pressure

THE PROBLEM

Many communities in the region report intermittent service, low pressure or concerns about water quality, although the extent differs by utility and location. Pressure transients, repairs and low-pressure conditions can stress weak assets. In the presence of a cross-connection or other pathway, loss of positive pressure can create a risk of intrusion. That is a risk pathway requiring control and sampling, not proof that a specific customer became sick. [3, 5]

MHE RESPONSE

MHE can support replacement and network layouts that allow better isolation and monitoring: correctly rated valves, accessible chambers, pressure gauges and labelled connection points. Hot tapping or live-line work belongs only in a utility-approved engineered procedure with compatible components, permits, contingencies and trained personnel. The utility's water-quality team retains responsibility for flushing, disinfection, testing, advisories and public-health decisions.

4. Buried or undocumented assets slow the response

THE PROBLEM

If crews cannot find an isolation valve, confirm the pipe material or locate the correct service boundary, they lose time while customers remain without water. Incomplete asset records also weaken capital planning and can lead to repeat excavation or damage to nearby utilities. IDB's regional study notes gaps in utility information and benchmarking, so each operator should validate its own records. [1]

MHE RESPONSE

Include maintainability in the replacement scope. Locate and label valves, gauges and manifolds. Deliver georeferenced as-builts, material and size records, fusion logs, pressure-test results, connection details and a clear handover register. Track time to isolate and restore service as a practical measure.

5. Capacity constraints and unequal service

THE PROBLEM

Replacing a pipe cannot create source water, treatment capacity, pump head or electricity. Yet a restricted or poorly connected main can add friction to an already constrained system, worsen pressure distribution and leave high points or end-of-line customers with weaker service. Regional water-scarcity and investment pressures vary across countries and even between service zones. [2, 3]

MHE RESPONSE

Begin with the utility's demand forecasts, source and treatment limits, hydraulic model, pump data and pressure complaints. Size replacement mains and distribution connections against those constraints. Manifolds and in-ground service boxes may improve access and control where hydraulic design, ratings, drainage and traffic loading support them. Do not promise continuous supply unless the full system can deliver it.

When a pipe failure damages more than the pipe

6. Road damage, erosion and movement of land

THE PROBLEM

Water escaping from a broken main can wash away bedding and surrounding soil. It may saturate pavement layers, reduce their support capacity, cause settlement or collapse, and force emergency road closures and reconstruction. In sloping or erosion-prone ground, sustained leakage can contribute to soil loss or instability. Landslides are possible only under particular soil, slope, drainage and flow conditions; they are not an automatic result of every break. [6, 7]

MHE RESPONSE

Plan replacement jointly with the utility and the responsible road authority or ministry of works. Review prior breaks, drainage, slope conditions and restoration standards. Agree in advance on traffic control, pavement cuts, compaction, reinstatement, inspection and cost responsibility. Include road restoration and any required geotechnical review in the project estimate and acceptance record.

7. Repeated emergency trenches disrupt communities and budgets

THE PROBLEM

If the same corridor is opened repeatedly, the utility pays for emergency response and water loss while the road agency may face repeat traffic control, inspection and pavement restoration. Residents, businesses, schools and emergency services also pay through delay and restricted access. Trenchless construction can reduce surface excavation in suitable locations, but it is not appropriate for every ground condition, crossing or connection density.

MHE RESPONSE

Choose the installation method segment by segment. Use HDD where utility locating, route geometry, geology, cover, entry and exit space, drilling-fluid controls and contingency planning support it. Use open-cut where it provides safer access, clearer utility management or a more practical tie-in. Confirm surface restoration and other-agency coordination before mobilization.

Shared-cost message

A main break can place costs on more than one public budget. The utility may cover leak response, pipe replacement and water loss. The road authority may cover inspection, traffic management, pavement restoration or slope stabilization depending on local rules. The project should identify each owner’s work and track the total public cost across agencies.

Resilience and local capability

8. Storms, drought, floods and ground movement

THE PROBLEM

The Caribbean faces varied exposure to hurricanes, intense rainfall, flooding, drought and changing rainfall patterns. CDB describes climate pressures alongside ageing infrastructure, water losses and limited investment. A weak or poorly supported pipeline can become harder to access and repair during an extreme event, especially where roads, slopes or power are also affected. [2, 4]

MHE RESPONSE

Design around the actual hazard map and ground conditions. Review alignment, burial depth, restraint, transitions, surge, drainage and emergency access. HDPE can offer corrosion resistance and flexibility in suitable designs, but no pipe material guarantees survival in a landslide, poor fusion, extreme surge or unsuitable installation. Engineers must set limits and specify the protection required for each site. [9]

9. Projects fail when the utility cannot operate what was installed

THE PROBLEM

A project that leaves without usable records, trained crews or clear responsibility transfers risk to the utility. Installation quality, inspection, commissioning and repair capability determine whether the asset can deliver lasting service. CDB identifies regional training and capacity building as important parts of water-sector development. [2]

MHE RESPONSE

Pair construction with practical training for utility employees and approved local contractors. Cover pipe handling, fusion preparation and records, installation, safe repair, inspection, flushing, disinfection and handover. Define competency checks, as-built records, operation instructions, responsible asset owners and warranty limits in the contract. MHE can scope a structured in-house training and handover plan, including a target of 6–12 months where the project and client readiness support it.

> *A disciplined replacement project protects the work after the contractor leaves.*

The MHE replacement program

MHE brings water-system products, HDPE and HDD equipment relationships, field support and training into a project-specific proposal. The utility retains engineering authority, procurement control, water-quality responsibility and asset ownership. MHE's role is to help plan and deliver the agreed scope with clear acceptance records.

1 | Establish the local baseline

Review pipe records, material and age, break clusters, pressure and outage reports, water-quality incidents, road restoration history, planned capital work and current performance indicators. Confirm the route, services and ground conditions in the field.

2 | Rank the corridors and choose a method

Score candidate mains by likelihood and consequence of failure, service criticality, water loss indicators, road and slope exposure, repair history and constructability. Compare replacement sections, open-cut, HDD or other approved methods. Record why each method fits the site.

3 | Define materials and controls

Confirm the utility specification, pressure class, diameter, fittings, valves, approved product standards and compatibility. Set hold points for receiving and storage, fusion operator qualification, machine calibration, joint records, installation inspection and pressure testing.

4 | Coordinate construction across agencies

Agree on permits, traffic control, service interruptions, emergency response, road reinstatement, compaction testing, public notices and responsibility for restoration. Keep an issue log and report changes to schedule or cost before they become disputes.

5 | Commission, train and transfer ownership

Complete pressure tests and utility-approved flushing, disinfection and sampling. Handover as-builts, test results, fusion records, valves and connection locations, operating instructions, defects list and training records. Confirm who maintains each asset and how warranty requests are handled.

Pilot before scale

Select one priority service zone or corridor jointly. Establish the baseline, agree on acceptance criteria and publish the before-and-after scorecard. Expand the replacement program when results support it, adjust when they do not, and record the reasons. That is a credible path from emergency repairs to planned public investment.

A scorecard leaders and communities can check

MEASURE	REPORT BEFORE AND AFTER
Reliability	Breaks and repeat repairs per kilometre, outage hours, time to isolate and time to restore.
Water loss	A defined water-balance or zone-flow indicator, including method, boundary and reporting period.
Road and land cost	Road closures, restoration and stabilization costs, traffic impact and repeat utility cuts.
Pressure and access	Pressure range at agreed monitoring points, including high points and end-of-line customers.
Water quality	Sampling and corrective-action records, using utility and public-health procedures.
Local capability	Training attendance, demonstrated competency, records accepted and named asset owners.

Closing speech

The Caribbean cannot afford to treat repeated water-main failures as routine. A break can interrupt service, waste treated water, damage a road and create costs across the utility and road authority. The scale and cause differ by country, so the first obligation is honest local evidence. The second is a replacement plan that the public can measure.

MHE is ready to work with the utility and ministry of works on a priority corridor: assess the conditions, select the right pipe and installation method, document quality, coordinate road restoration, train the local team and report the results. The proposal will state the scope, responsibilities, standards, cost, schedule and warranty terms before commitment.

> *Let us choose one zone, set the baseline and agree on the scorecard. If the results reduce repeat breaks, water loss, outage time and restoration costs, the evidence will support the next stage. That is how a replacement program earns public trust and how MHE can help leave a stronger network in local hands. Thank you.*

Visible failure and planned replacement

Illustrative scenes for the discussion: corroded pipe interior, pavement collapse and erosion, emergency excavation, and removal of a failed main for replacement. These images do not show a specific Caribbean country, utility or MHE project.



ENCRUSTED PIPE

Scale and corrosion can reduce internal space and contribute to leakage or restriction.



ROAD DAMAGE AND EROSION

Escaping water can undermine pavement or soil; slope effects depend on site conditions.



EMERGENCY EXCAVATION

Repair work can require traffic control, excavation, pipe repair and road restoration.



OLD MAIN REPLACEMENT

Planned work coordinates removal, installation, testing and transfer to the utility.

All images on this page are AI-generated illustrations. Confirm local failure data with the responsible utility and road authority before external presentation.

Regional evidence and technical references

Regional conditions differ. The sources below support the general analogy in this briefing; they do not replace local network data, engineering design, health surveillance, regulatory requirements or procurement review.

[1] Inter-American Development Bank (2021), *Caribbean Water Study*. Benchmarking of selected Caribbean utilities, non-revenue water, resilience and information gaps.
https://publications.iadb.org/en/caribbean-water-study

[2] Caribbean Development Bank, *Water Resource Management*. Regional discussion of water scarcity, ageing infrastructure, losses, investment and climate pressures.
https://www.caribank.org/our-work/sectors/water-resource-management

[3] World Bank (2025), *Reimagining Water Service Delivery in the Caribbean: From Infrastructure to Impact*. Reports intermittent service, low pressure and water-quality concerns in many communities.
https://www.worldbank.org/en/news/feature/2025/05/28/reimagining-water-service-delivery-in-the-caribbean-from-infrastructure-to-impact

[4] World Bank (2021), *360° Resilience: Water Supply and Sanitation in the Caribbean*. Resilience guidance for a high-risk region exposed to shocks.
https://documents.worldbank.org/en/publication/documents-reports/documentdetail/873941635345060357

[5] US Environmental Protection Agency, *Drinking Water Distribution System Tools and Resources*. Leaks, main breaks, water loss and cross-connection pressure risks.
https://www.epa.gov/dwreginfo/drinking-water-distribution-system-tools-and-resources

[6] Federal Highway Administration, *Geotechnical Aspects of Pavements*, Chapter 8. Notes that leaks from water-bearing utilities can saturate pavement layers and reduce their support capacity.
https://www.fhwa.dot.gov/engineering/geotech/pubs/05037/08.cfm

[7] K. Chan, Hong Kong University of Science and Technology (2019), doctoral research on leakage-induced soil erosion and slope instability. This is a mechanism study; site-specific landslide risk requires qualified geotechnical assessment.
https://researchportal.hkust.edu.hk/en/studentTheses/erosion-fluidization-mechanisms-and-slope-instability-due-to-leak/

[8] Health Canada (2025), *Guidance on Sampling and Mitigation Measures for Controlling Lead Corrosion*. Technical guidance explaining that corrosion of metal pipes and fittings can release lead and that sampling informs exposure assessment.
https://www.canada.ca/en/health-canada/services/publications/healthy-living/guidance-controlling-corrosion-drinking-water-distribution-systems.html

[9] Plastics Pipe Institute, *Handbook of PE Pipe*, 2nd ed.; American Water Works Association, AWWA C906-21 listing. Confirm current locally adopted standards and product approvals.
https://www.plasticpipe.org/PowerCommunications/Shared_Content/Shop/PE-Handbook.aspx

Evidence boundary: This is a regional discussion copy. It does not claim that one utility's statistics apply across the Caribbean. Corrosion, pipe breaks, discoloured water or pressure loss alone do not prove a specific illness or contamination event. Use accredited water-quality sampling, public-health investigation and local engineering review. Road damage, slope movement and restoration responsibility vary by site and jurisdiction.

Commercial boundary: Product availability, design, standards, permitting, installation scope, training hours, warranty coverage, pricing and performance targets require confirmation in a project-specific MHE proposal and the utility's approved documents.

MCDAVID
HEAVY EQUIPMENT

Water systems. Delivered end to end.

HDPE pipelines | valves | hot tapping
Goodeng HDD drills | MHE training | support

Products, equipment and project support in one MHE package



A complete water project package

One MHE point of coordination from project definition through field handover

Bring the supply chain, equipment and field support into one conversation.

01

Project brief

Route, pipe size, pressure class, schedule

02

Specification

Product selection and sourcing plan

03

Equipment

HDD rig, tooling and support systems

04

Field support

Consultation, service and installation guidance

05

Handover

Training, commissioning and warranty path

Scope, availability and responsibilities are confirmed in a project-specific proposal.

Water distribution products

A coordinated bill of materials for main replacement, new networks and repairs.

01 HDPE pressure pipe, straight lengths and coils

02 Butt fusion, electrofusion and mechanical fittings

03 Isolation, control, air-release and service valves

04 Hot-tapping machines, saddles and accessories

05 Manifolds, chambers, meters and system components

06 Fusion equipment, inspection and installation tools

Product standards, pressure ratings, dimensions, availability and origin are confirmed against the approved project specification.

Caribbean water distribution pressures

Common regional pressures require country-specific evidence before each investment decision.

01 Ageing mains

Older or poorly documented assets can increase the need for planned replacement, repairs and better asset records.

02 Water losses

Leakage and non-revenue water can reduce service reliability and pressure utility finances. Measure the local water balance.

03 Climate exposure

Hurricanes, flooding, drought and changing rainfall can damage assets and interrupt service. Assess each corridor hazard.

04 Investment and recovery

Limited investment and recovery capacity can delay replacement and lengthen restoration after major events.

Horizontal directional drilling

A trenchless option for utility corridors where route, ground and clearances support the method

Keep more of the surface available while the utility moves below it.

01 Less surface restoration

A bore can reduce open excavation and reinstatement across suitable road, driveway and landscaped crossings.

02 Fewer access conflicts

Planned entry and exit pits can help maintain access and reduce disruption to traffic, businesses and residents.

03 A planned installation

Route review, utility locating, bore planning, fluid management and pullback controls support predictable field work.

04 Cost depends on the site

Ground conditions, depth, length, pipe size, restoration and utility congestion shape the comparison with open cut.

MHE reviews the route and installation conditions before recommending a method or estimating savings.

HDPE fusion and joint quality

A reliable pipeline starts with controlled preparation and documented fusion work

Choose the joining method for the pipe, fitting and field condition.

01 **Butt fusion**

Joins compatible pipe ends to build continuous mainline runs. Alignment, clean faces, machine condition and cooling time matter.

02 **Electrofusion**

Connects compatible fittings and branch components when the fitting system and prepared pipe surface support the method.

03 **Controlled parameters**

Use the approved procedure for pipe material, diameter, wall thickness, ambient conditions and fusion equipment.

04 **Inspection and records**

Track joint locations, operator, equipment and procedure. Inspect completed joints before handling or pressure testing.

MHE provides HDPE fusion training, inspection support and field guidance.

Hot tapping for controlled connections

A planned branch connection can preserve service when the utility approves a live-line method

The connection is engineered around the live main, the new branch and an approved work window.

01 Confirm compatibility

Verify pipe material, outside diameter, pressure class, wall thickness and the tapping fitting and valve ratings.

02 Design the connection

Select a pressure-rated tapping saddle or tee, isolation valve and tapping machine under the utility's approved procedure.

03 Control the work

Set the work zone, confirm operating conditions and agree on isolation or contingency steps before tapping.

04 Verify and document

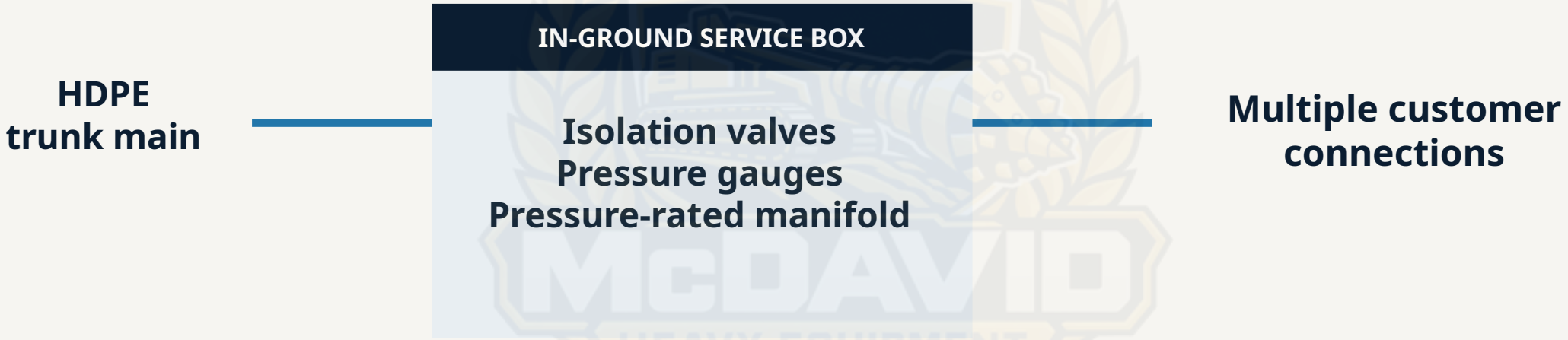
Check the completed connection for leaks, record components and test results, and update utility asset records.

Live-line work requires utility authorization, an engineered method and manufacturer-approved components.

Pressure-rated customer distribution

Organize multiple service connections around accessible isolation and monitoring points

Bring each customer connection back to a serviceable distribution point.



Confirm design pressure, outlet demand, component ratings, surge conditions and pressure-test requirements for each project.

Specify box size, access, drainage and traffic loading for the installation location.

Goodeng HDD equipment, backed by MHE

Sales, sourcing and service support for horizontal directional drilling



A drilling package can include

- Goodeng HDD rigs matched to bore length, diameter and ground conditions
- Drill rods, bits, reamers and pullback tooling
- Locating systems, mud mixing and fluid support
- Rig inspection, diagnostics and maintenance
- Parts, commissioning and operator start-up support

Goodeng drill options depend on stock and project requirements.

MHE + GOODENG

HDD equipment with training and support

A rig package that helps the customer operate with confidence from start-up onward.

01

GOODENG DRILLS

Horizontal directional drills selected to fit bore length, pipe size and ground conditions.

02

MHE OPERATOR TRAINING

Operating techniques, locating, drilling controls, fluid practices and pullback. 100-hour packages can be scoped.

03

LONG-TERM CUSTOMER SUPPORT

Follow-up technical help, maintenance guidance, parts coordination and refresher training, scoped to the customer and service region.

MHE stays engaged after delivery with a support plan agreed for the equipment package.

Project consultation in the field

Technical guidance that connects the design assumptions to the worksite

- Route and work method review
- HDD equipment and tooling selection
- Installation planning and work sequencing
- On-site supervision and troubleshooting
- Commissioning records and handover planning



MHE supports the project team before mobilization and while work is underway.

Training tracks

On-site or classroom delivery can be built around the project.

01 **HDD operation**

Setup, drilling controls, locating and pullback

02 **HDPE fusion**

Preparation, fusion procedure and joint records

03 **Hot tapping**

Equipment setup, safe operation and checks

04 **Service & maintenance**

Daily care, fault finding and planned upkeep

MHE can train the client’s in-house team and local certified contractors, then target a full operational handover within 6–12 months.

A clear warranty and support path

Protection and follow-through are defined before the order is placed

2

YEAR

equipment warranty

MHE package

Support commitments

- Warranty eligibility and coverage stated in the written quotation
- Manufacturer terms, commissioning requirements and exclusions disclosed
- Service contacts and escalation route identified at handover
- Training and consultation scope matched to the equipment package

Final coverage follows the signed warranty document and applicable manufacturer terms.

International supply relationships

A sourcing network designed to connect product, equipment and technical capability

Project and supply relationships span

CHINA

Equipment and water-system product relationships

INDIA

Technical workforce and project delivery connections

MEXICO

Regional supply and market relationships

Every proposal confirms the specific supplier, product origin, certification, availability and service coverage.

A country-specific MHE delivery plan

Each proposal is shaped around the local utility, road authority, standards and delivery capacity.

01 **Water-system scope**

Confirm pipe, fittings, valves, hot tapping and distribution components against the approved specification.

02 **Installation method**

Use HDD where route and ground conditions support it. Use open-cut or another approved method where it is safer or more practical.

03 **Local team capability**

Scope operator and fusion training, inspection, maintenance guidance, field support and handover milestones.

04 **Clear accountability**

Confirm responsibilities, permits, schedule, quality records, warranty coverage, supplier availability and support in writing.

A controlled path from inquiry to handover

Each stage produces a defined decision or project document

01	**Project brief**	Location, route length, pipe sizes, application and schedule
02	**Technical review**	Specification gaps, equipment fit, risks and site inputs
03	**MHE proposal**	Bill of materials, equipment list, service scope, training and warranty
04	**Mobilization**	Supplier confirmation, delivery plan, field support and responsibilities
05	**Commissioning**	Training records, inspection documents and handover actions

The customer sees scope, pricing, lead time, responsibilities and warranty terms before commitment.

Choose the package that fits the job

One accountable MHE conversation, scoped to the project

WATER SYSTEM SUPPLY

Pipe, fittings, valves, hot tapping and distribution products

HDD EQUIPMENT

Rig, tooling, locating, mud system, parts and service

PROJECT SUPPORT

Consultation, installation supervision, commissioning and troubleshooting

TEAM CAPABILITY

Operator, fusion, hot tapping and maintenance training

Combine supply + equipment + training + field consultation in a project-specific proposal.

Why MHE

Equipment reach, engineering judgement and customer support in one project partner

MORE THAN EQUIPMENT

MHE helps turn access into field performance.

MHE connects Caribbean projects to equipment and manufacturing relationships across China, India and Mexico, then brings the technical support to help put that reach to work.

ENGINEERING	Match equipment and water-system components to the project scope, route and site conditions.
MHE OPERATOR TRAINING	Teach setup, operating techniques, locating, drilling controls and equipment care.
CONSULTING + LONG-TERM SUPPORT	Guide mobilization, field troubleshooting and commissioning, then stay engaged with the customer.

Train client staff and local certified contractors. Target a full handover in 6–12 months.

MCDAVID HEAVY EQUIPMENT

Put your next project on the table.

Ask for an MHE + Goodeng HDD package meeting with Norman McDavid.

Bring the location, route length, pipe sizes and target schedule. MHE will map the right product, equipment and support package for review.



McDavid Heavy Equipment | St. Thomas, Ontario, Canada