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.