Strengthening Water Conservation in Grenada's Health Sector

G-CREWS 3/06/2026

Key Messages

- Water audits conducted in 13 health centers alongside training of environmental and maintenance staff to be able to conduct further assessments.
- Implementing identified conservation measures could cut water use by about 50 – 60%.
- The water storage units of 11 medical facilities were enhanced, resulting in a combined additional storage capacity of 165,000 imperial gallons (approximately 198,000 US gallons) of water (approximately 5 days' supply).
- Strengthened water efficiency and storage capacity improves resilience to climate impacts and service disruptions.

11,400 imperial gallons cistern under construction at the Windward Medical Station in Carriacou

Water Audit Training

30 environmental and maintenance officers from the Ministry of Health were trained in water loss management, water auditing as well as development and implementation of water conservation strategies.

Water Audit Methodology

As a joint effort between the Ministry of Health, the National Water and Sewerage Authority (NAWASA), Daniel & Daniel Engineering Inc and the German Development Cooperation (GIZ), one pilot audit was conducted in 2021 at the Princess Alice Hospital and the data gathered, served as the basis for the auditing process carried out at subsequent facilities. A total of 13 water audits were conducted in 2025, at various health facilities on the islands of Grenada and Carriacou. Information collected included:

- Facility operations and occupancy
- Water consumption data obtained from water meters and utility records between 2022 and 2025.
- Inventory of water use points throughout the facility
- Fixture flow rate testing and leakage inspections
- Computations, observations, and recommendations for water conservation

The results of these audits provided the necessary basis for identifying opportunities to improve water efficiency and strengthen water security within Grenada's health facilities.

Audit Result using the example of Bellevue Medical Center, St. David

A water conservation audit conducted at Bellevue Medical Center in St. David examined water consumption patterns, plumbing infrastructure,

and water storage capacity at the facility. The facility operates with five employees per shift, serving an average of 50 walk-in patients daily.

On the job training for officers of the Ministry of Health

Key findings:

Water storage capacity at the facility was approximately 800 US gallons, providing roughly two days of water storage. According to the Pan American Health Organization (PAHO) SMART Hospitals Toolkit, health facilities should ideally maintain a minimum of four days of on-site water storage capacity. The audit also found that water pressure from the public supply system was higher than optimal, which had the potential to contribute to increased water consumption and potential stress on plumbing fixtures. No plumbing leaks were detected during the inspection. These findings highlighted the need for targeted interventions to improve efficiency and system resilience.

Water Conservation Measures Implemented

Based on the audit findings, several water conservation measures were recommended and implemented, including:

- The installation of commercial low flow faucets with flow rates between 0.35 – 1.0 US gallons per minute (gpm) in bathrooms and 1.5 gpm in kitchen areas
- Replacement of showerheads with low-flow fixtures operating between 1.0 – 1.5 gpm
- Installation of modern low-flush toilet systems using less than 1.6 US gallons per flush
- Installation of water-efficient urinal valves rated at 1.0 US gallons per flush or less
- Installation of a pressure-reducing valve (PRV) to regulate water pressure to 85 pounds per square inch (psi) or below
- Routine monitoring of plumbing systems to detect and address leaks

These upgrades were critical to improving water efficiency while maintaining the functionality required for daily health facility operations.

Overall Results

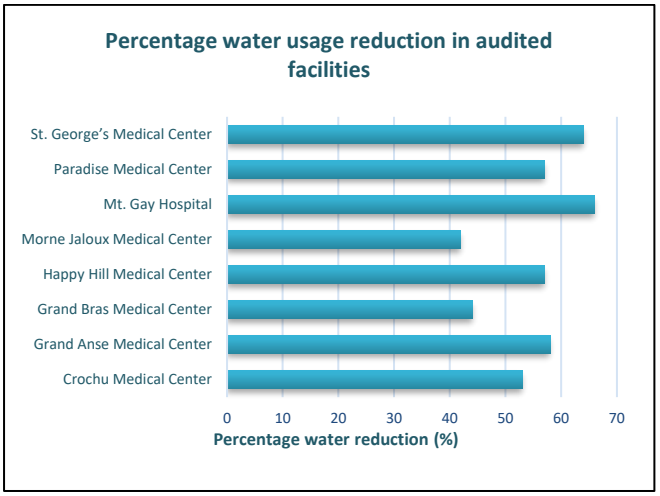
A total of 13 health facilities were assessed under the G-CREWS program. Of these, 8 facilities provided complete water consumption data, which were used to evaluate the impact of implemented water conservation measures.

Key outcomes include:

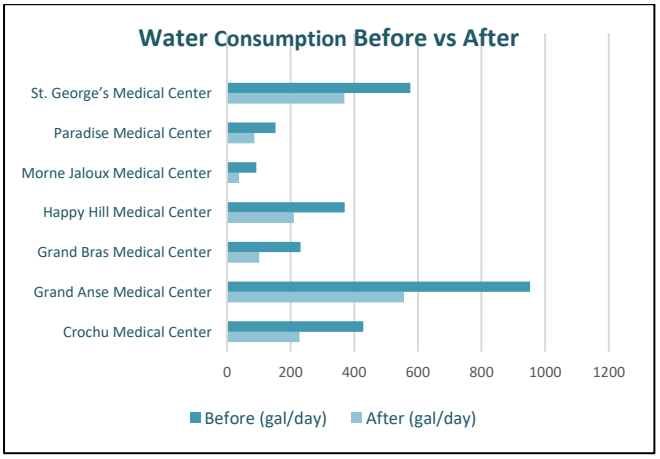
- Average reduction in water consumption: approximately 55%
- Total estimated water savings: approximately 6,100 US gallons per day
- Estimated monthly water savings: approximately 182,000 US gallons
- Approximately 90% implementation of recommended water conservation systems
- Improved regulation of water pressure, reducing stress on infrastructure

Metric (Mt. Gay Hospital)	Value (US gal/day)
Previous Water Consumption	14,500
Projected water Savings	4,868
Post Implementation Projection	9,632

- Increased adoption of water management practices across health facilities



Prior to this intervention, no facilities had water-efficient fixtures installed, and several operated with excessive water pressure and insufficient storage capacity.



Mt. Gay Hospital is the largest water consumer amongst the audited facilities because of the large number of live-in patients who reside at the facility. The projected water saving potential at the facility is a testament to how effective water efficiency interventions can be.

Auditors at the St. George's Medical Center inspecting pipe fixtures

Climate-Resilient Water Storage in Health Centers

The G-CREWS project in collaboration with NAWASA's support equipped eleven (11) health centers with hurricane-proof water storage tanks. This contributes to stabilizing water supply during droughts and extreme weather events. Increasing overall storage capacity improved the ability of health centers to remain operational during periods of supply interruption. The upgrades were designed to align with recommended PAHO[1] water storage standards, supporting approximately 5 days of on-site water availability and up to 101,841 US gallons (386 m^3) of additional water storage. In several cases, the integration of new tanks provide opportunities for future expansion, including the potential incorporation of rainwater harvesting systems. Collectively, these improvements reduce the reliance for a continuous supply from the water company, thus enhancing the reliability of water access for essential healthcare services.

[1] Pan American Health Organization SMART Hospitals Toolkit standards

Water Storage tank inspection during audit

Additional Contributions to National Climate Goals

Adequate water conservation planning in the health sector is a core objective of the National Adaptation Plan (NAP) and the implementation of Grenada's Health National Adaptation Plan (HNAP). Initiatives of this nature increase water storage capacity and enhance resilience to extreme weather events.

Recommendations for Replication

The success of water conservation interventions demonstrates strong potential for replication across additional facilities. Sustained collaboration between the Ministry of Health, the National Water and Sewerage Authority (NAWASA), and other responsible stakeholders will be essential to:

- Maintain and monitor installed systems
- Expand water conservation planning across additional facilities
- Increase water storage capacity in line with PAHO standards
- Strengthen long-term water resource management practices

These actions will help ensure that health facilities can continue to deliver essential services during climate-related challenges.

Looking To the Future

The G-CREWS project demonstrates the efficacy of targeted, data-driven interventions. In the face of increasing climate uncertainty and geopolitical strife, it is important to improve climate resilience and water efficiency.

Health facilities are amongst the first to face the consequences of poor resource infrastructure, which is why upgrades and continuous monitoring and maintenance are crucial.

Hospital Laundry Cistern Under Construction

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